



FCC RADIO TEST REPORT

FCC ID : 2AS7A-B3KF1
Equipment : Head Mounted Display
Model Name : KW49CM
Applicant : Imaginante, LLC
103 Foulk Road, Suite 202, Wilmington, DE 19803
Standard : FCC Part 15 Subpart C §15.247

The product was received on Dec. 18, 2019 and testing was started from Dec. 24, 2019 and completed on Feb. 01, 2020. We, SPORTON INTERNATIONAL INC., EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issued Date
FR9D1825-01C	01	Initial issue of report	May 29, 2020
FR9D1825-01C	02	Revising accessory and equipment information.	Aug. 14, 2020

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(a)(2)	6dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.247(b)	Power Output Measurement	Pass	-
3.3	15.247(e)	Power Spectral Density	Pass	-
3.4	15.247(d)	Conducted Band Edges	Pass	-
		Conducted Spurious Emission	Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	Under limit 1.09 dB at 2483.520 MHz
3.6	15.207	AC Conducted Emission	Pass	Under limit 10.96 dB at 0.498 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	Pass	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Wii Chang

Report Producer: Lucy Wu



1 General Description

1.1 Product Feature of Equipment Under Test

GFSK, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ax, and Wi-Fi 5GHz 802.11a/n/ac/ax.

Product Specification subjective to this standard	
Antenna Type	GFSK: Loop Antenna WLAN <Ant. 1>: Dipole Antenna <Ant. 2>: Dipole Antenna Bluetooth: Dipole Antenna

1.2 Modification of EUT

No modifications are made to the EUT during all test items.



1.3 Testing Location

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory	
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	
	TH05-HY	CO05-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory	
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855	
Test Site No.	Sporton Site No.	
	03CH15-HY	

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW1190 and TW0007

1.4 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. The TAF code is not including all the FCC KDB listed without accreditation.

2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane for MIMO Ant. 1+2; Y Plane for MIMO Ant. 1+2 Full RU and Partial RU) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0

Test Cases	
AC Conducted Emission	Mode 1: GFSK Link + Bluetooth Link + WLAN (2.4GHz) Link + Earphone + Controller(Left) + Controller (Right) + USB Cable (Charging from AC Adapter)
Remark: For Radiated Test Cases, the tests were performed with Battery 2.	

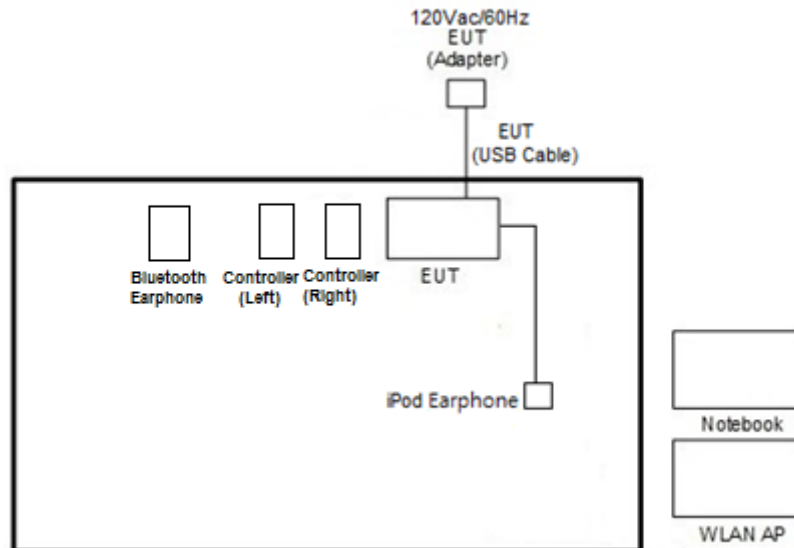
Ch. #	2400-2483.5 MHz			
	802.11b	802.11g	802.11n HT20	802.11n HT40
Low	01	01	01	03
Middle	06	06	06	06
High	11	11	11	09

Ch. #	2400-2483.5 MHz	
	802.11ax HE20	802.11ax HE40
Low	01	03
Middle	06	06
High	11	09

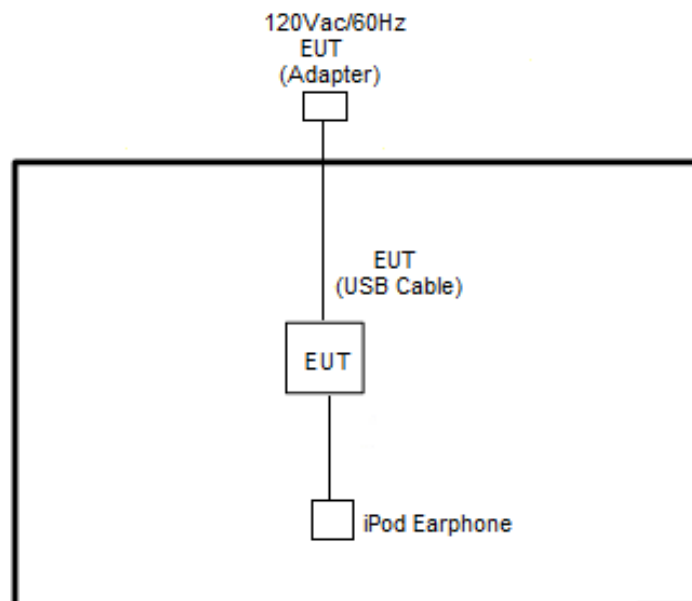
Remark: For radiation spurious emission, the final modulation and the worst data rate was reference the max RF conducted power.

2.3 Connection Diagram of Test System

<For AC Conducted Emission Mode>



<For Radiated Emission Mode >



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
5.	Controller (Right)	N/A	N/A	N/A	N/A	N/A
6.	Controller (Left)	N/A	N/A	N/A	N/A	N/A
7.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A

2.5 EUT Operation Test Setup

The RF test items, utility "QRCT_V4.0.00142" was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW) $\geq 3 * RBW$.
6. Measure and record the results in the test report.

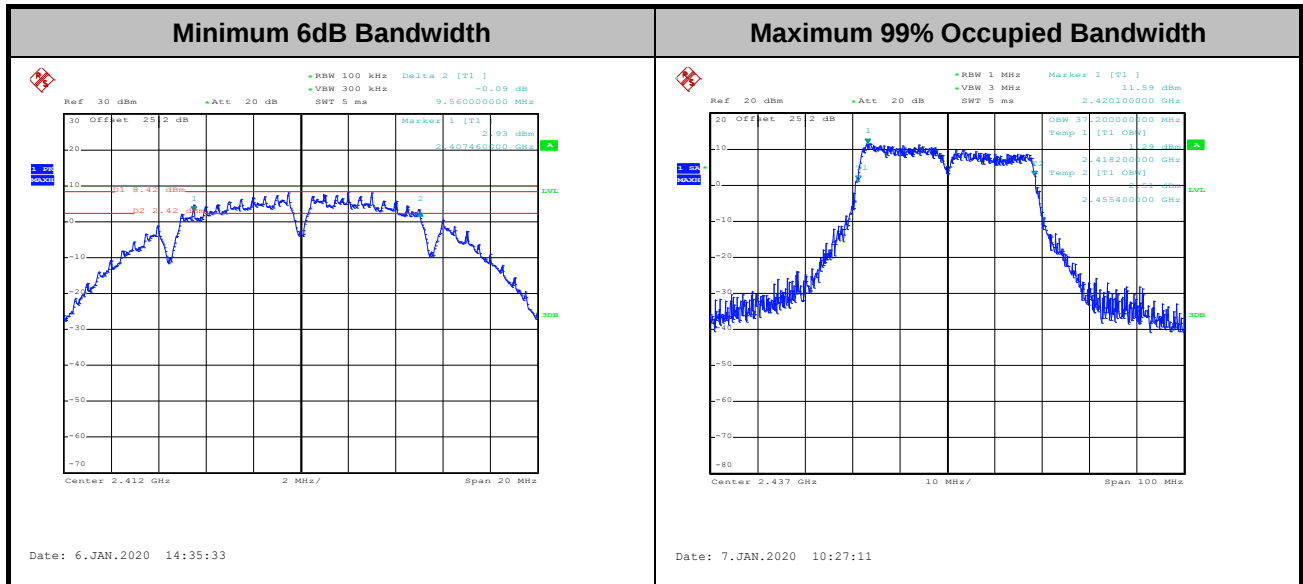
3.1.4 Test Setup





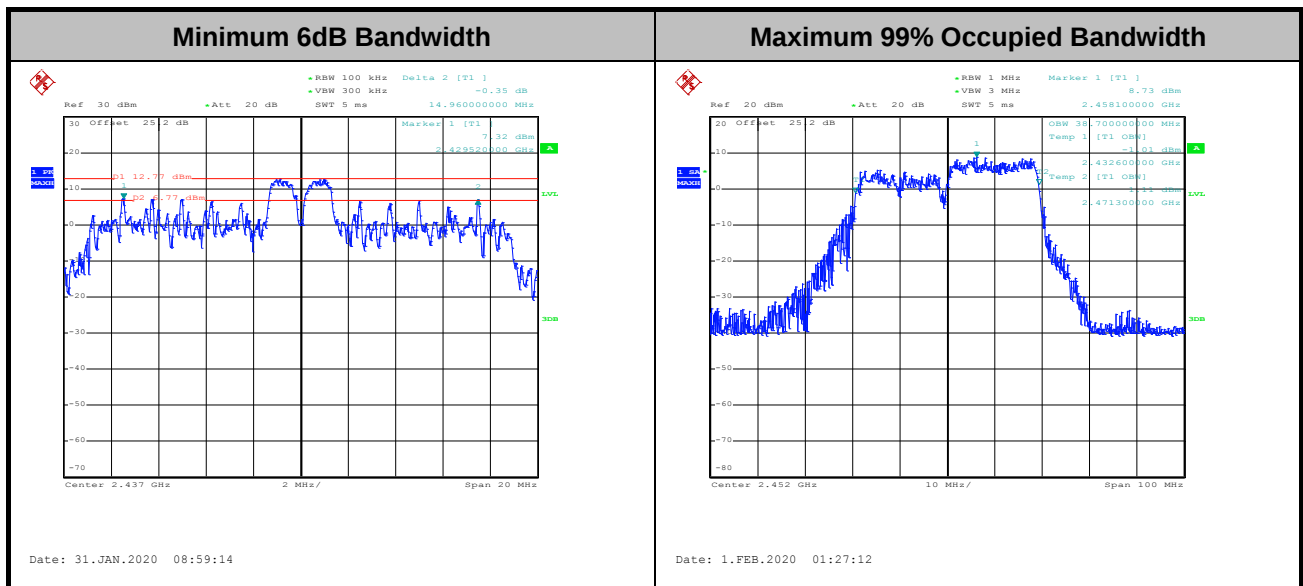
3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<For Partially Loaded RUs>



3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for output power is 30dBm. If transmitting antenna with directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

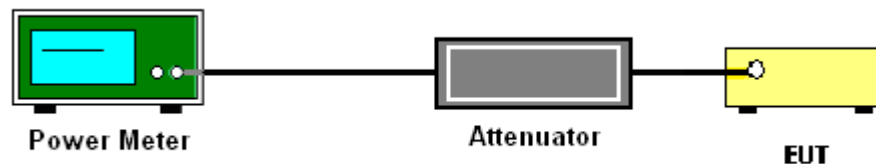
3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

3.2.3 Test Procedures

1. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

3.2.4 Test Setup



3.2.5 Test Result of Average Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

3.3.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

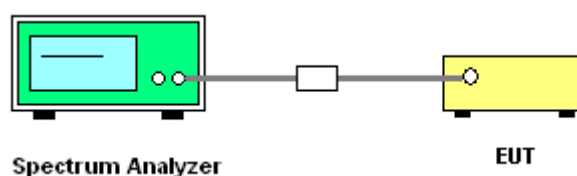
If measurements performed using method (2) plus $10 \log(N)$ exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

Method (1): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

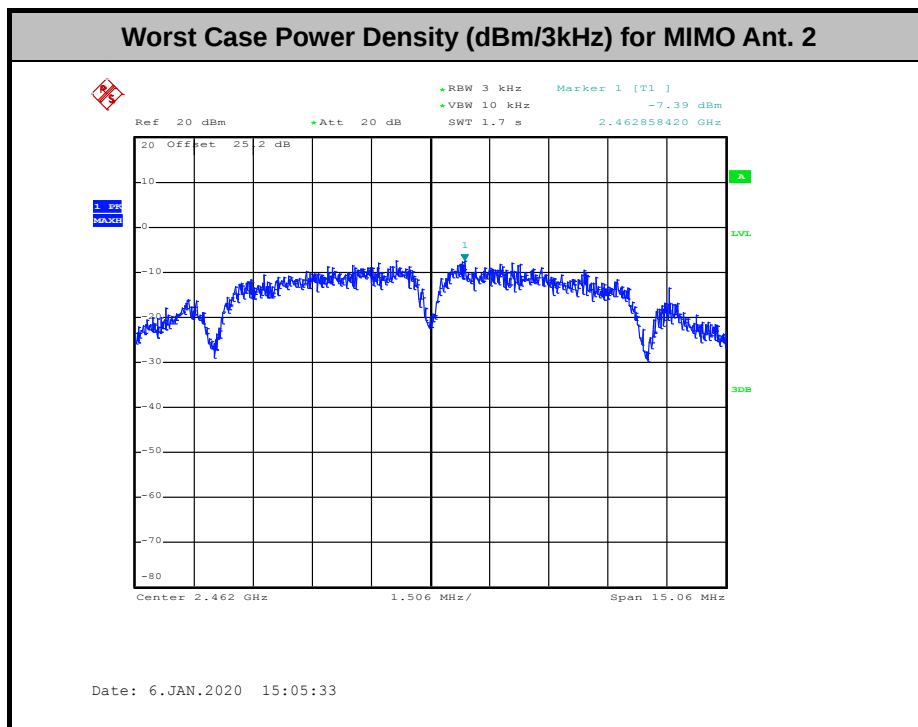
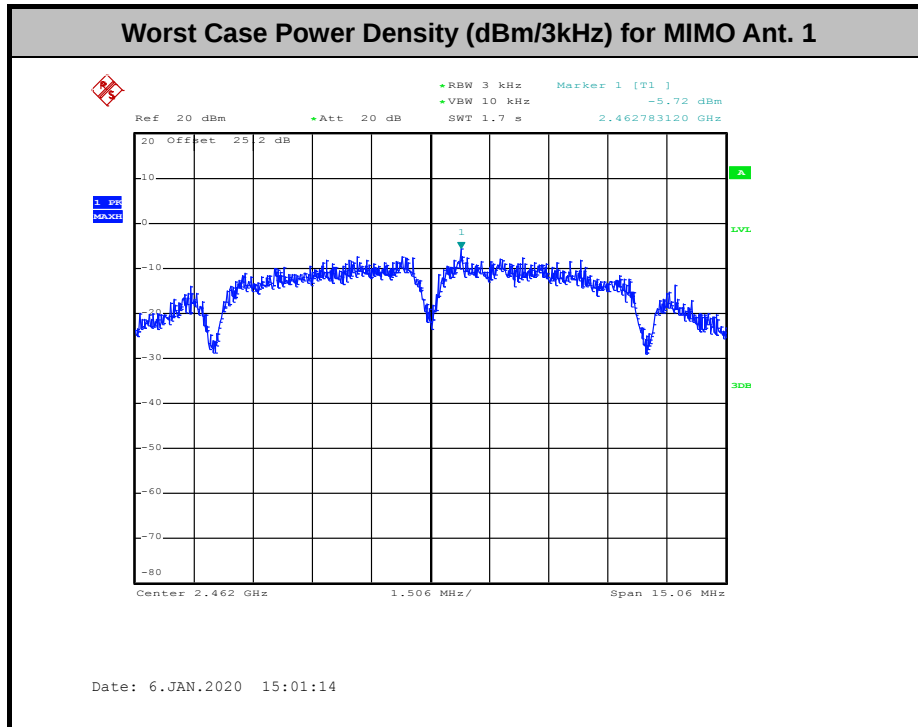
Method (2): Measure and add $10 \log(N)$ dB, where N is the number of outputs. (N=2)

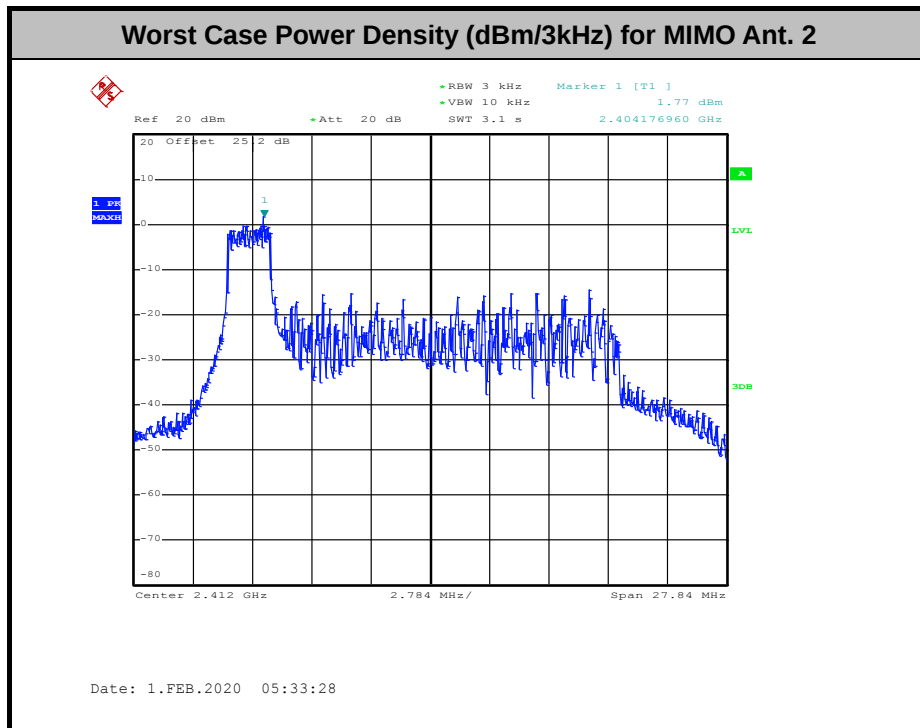
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.





3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

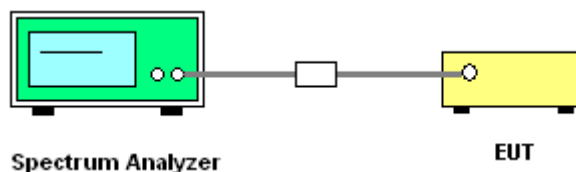
3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

3.4.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.11.3 Emission level measurement.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup





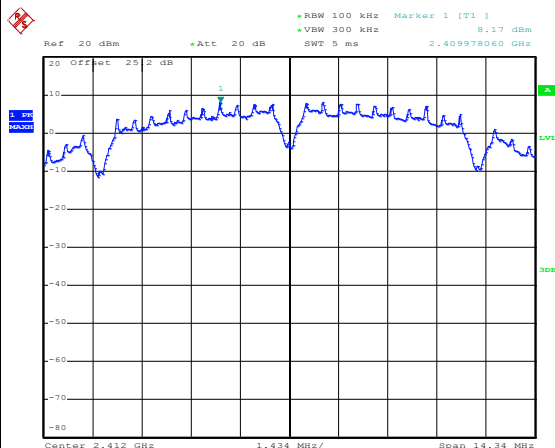
3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Engineer :	Howard Lin and Kai Liao	Temperature :	21~25°C
		Relative Humidity :	51~54%

Number of TX = 2, Ant. 1 (Measured)

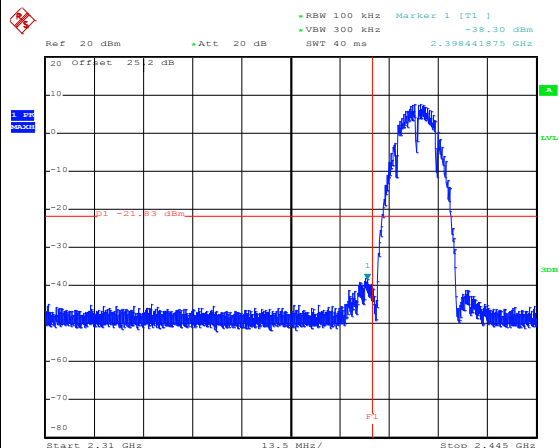
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100kHz PSD reference Level



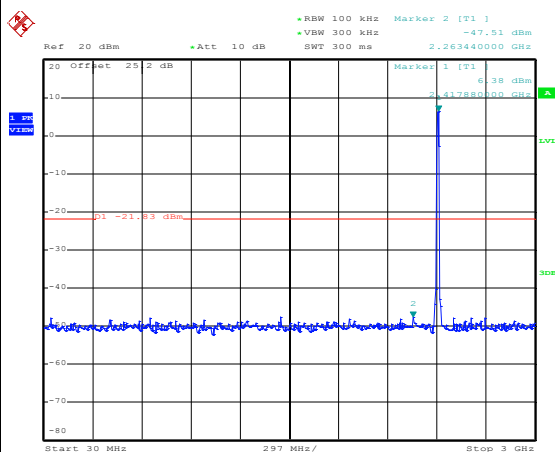
Date: 6.JAN.2020 14:36:42

Low Channel Plot



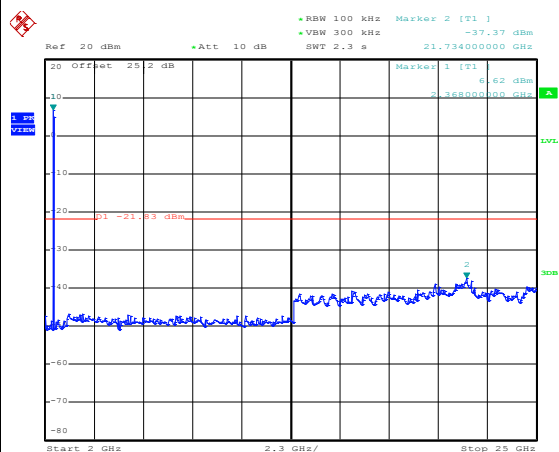
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Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 14:37:36

Spurious Emission 2GHz~25GHz

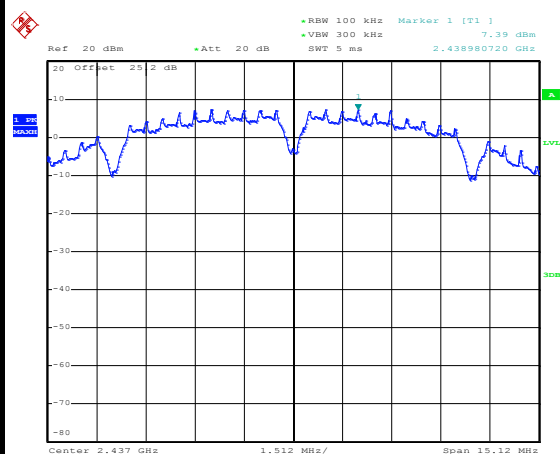


Date: 6.JAN.2020 14:37:55



Test Mode :	802.11b	Test Channel :	06
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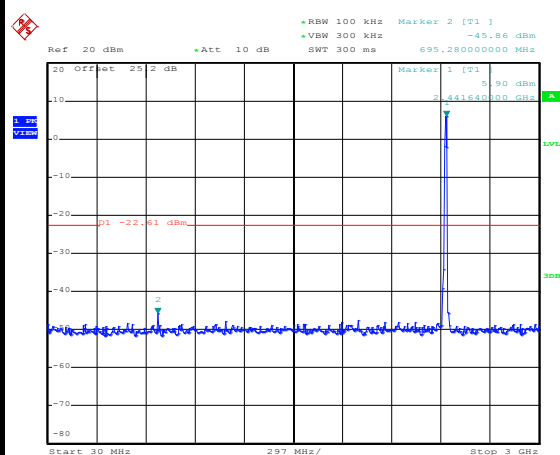
100kHz PSD reference Level



Date: 6.JAN.2020 14:53:22

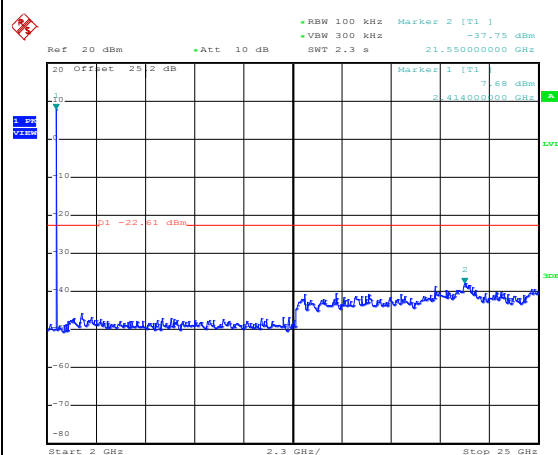
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 14:54:00

Spurious Emission 2GHz~25GHz

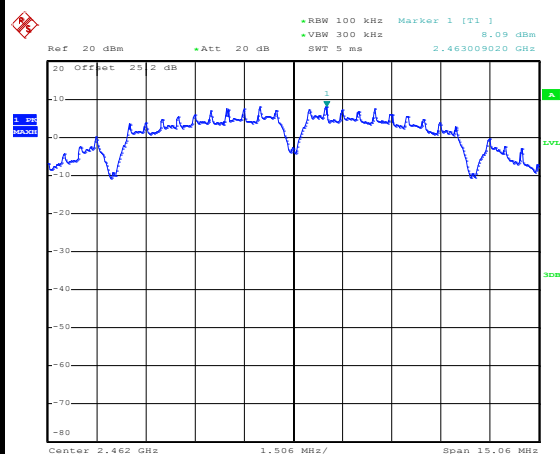


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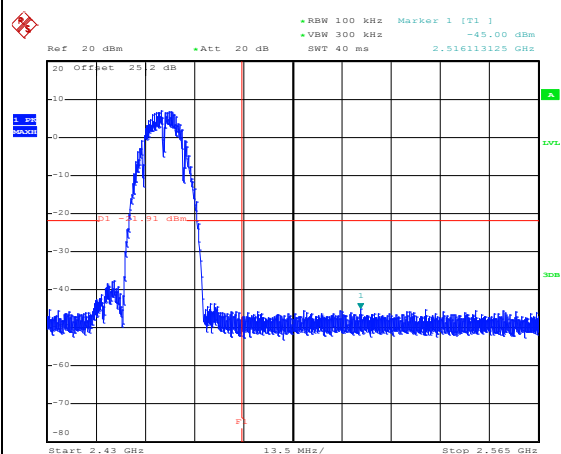
Test Mode :	802.11b	Test Channel :	11
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100kHz PSD reference Level



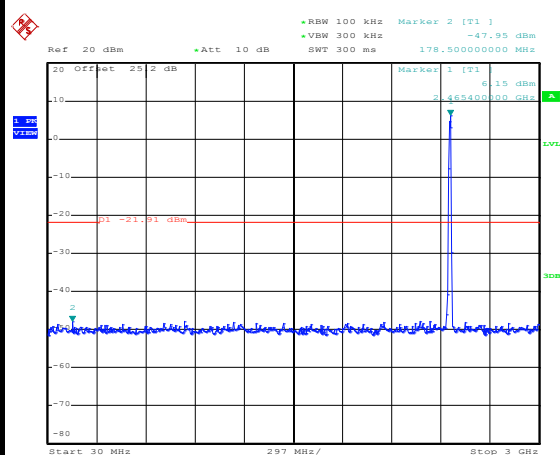
Date: 6.JAN.2020 15:01:36

High Channel Plot



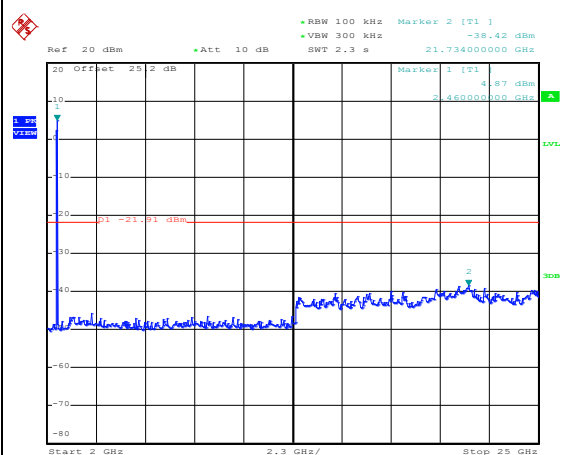
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Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:03:38

Spurious Emission 2GHz~25GHz

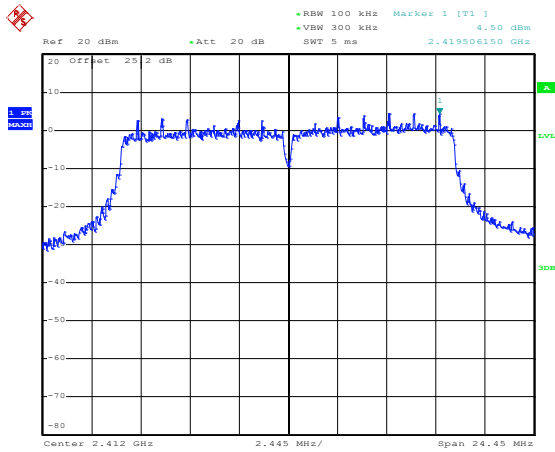


Date: 6.JAN.2020 15:03:54



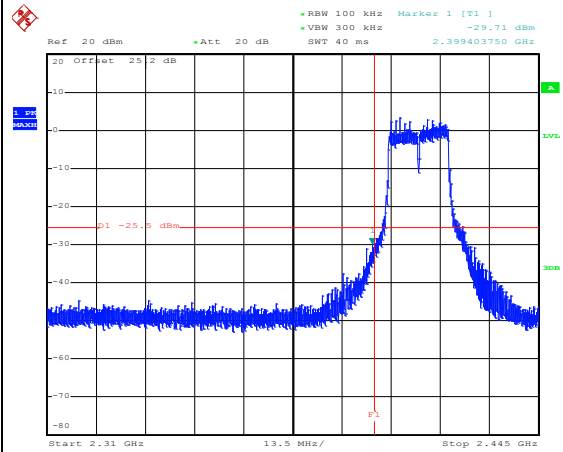
Test Mode :	802.11g	Test Channel :	01
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100kHz PSD reference Level



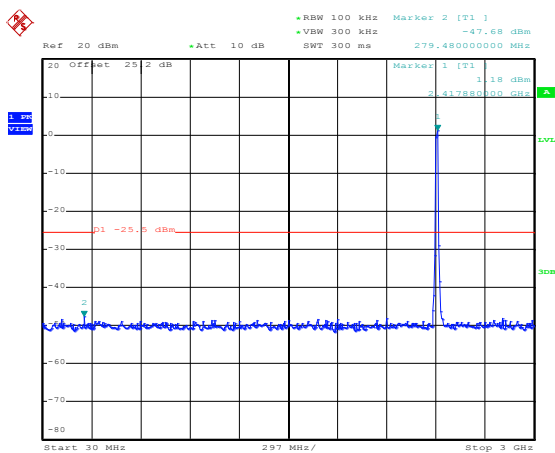
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Low Channel Plot



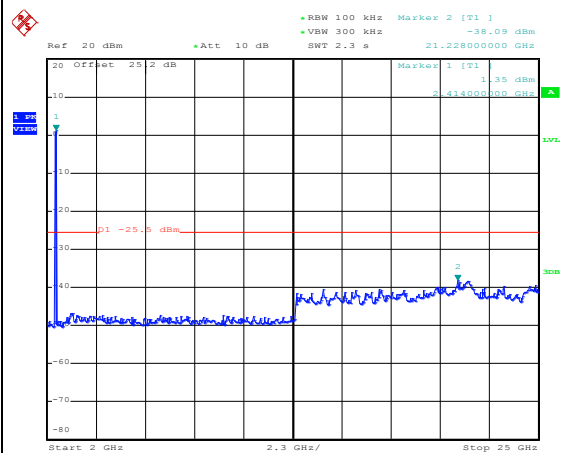
Date: 6.JAN.2020 15:11:41

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:12:11

Spurious Emission 2GHz~25GHz

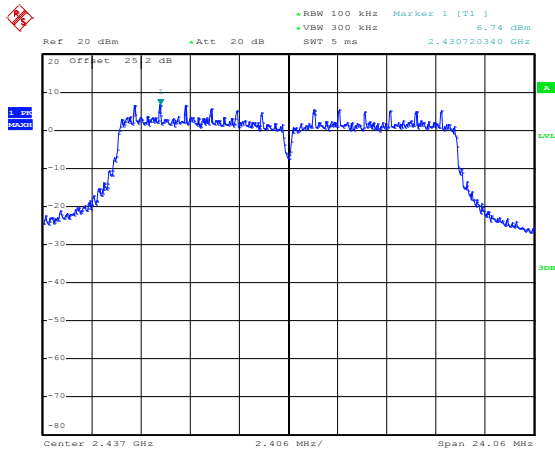


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Test Mode :	802.11g	Test Channel :	06
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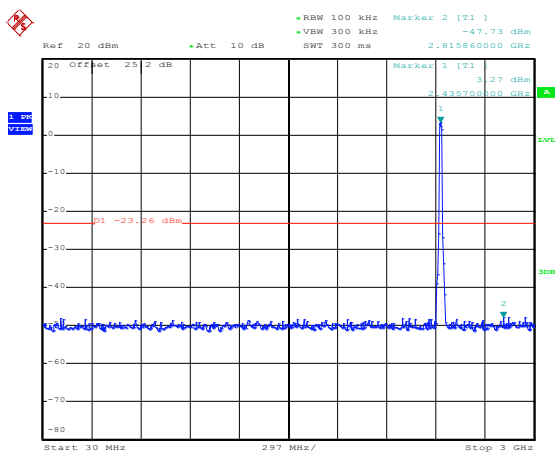
100kHz PSD reference Level



Date: 6.JAN.2020 15:20:12

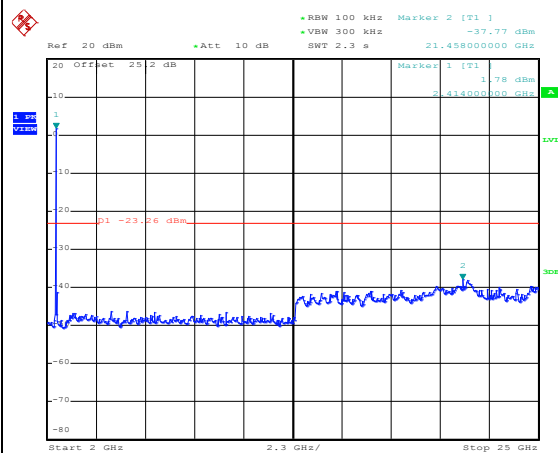
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:20:36

Spurious Emission 2GHz~25GHz

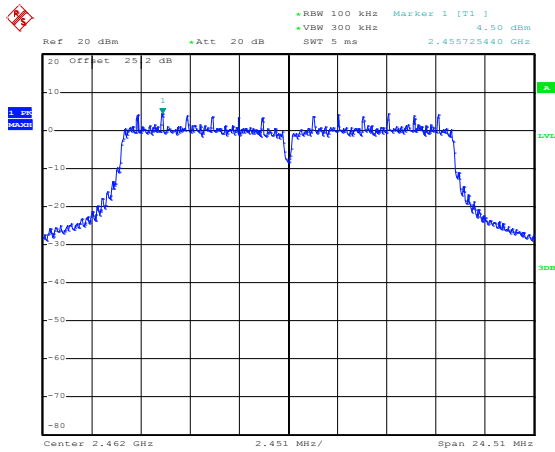


Date: 6.JAN.2020 15:20:51



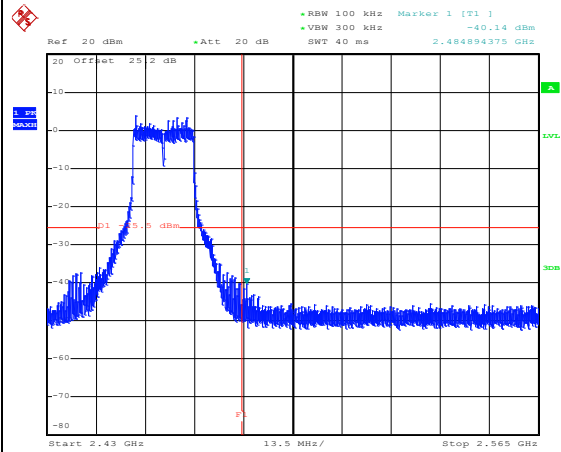
Test Mode :	802.11g	Test Channel :	11
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100kHz PSD reference Level



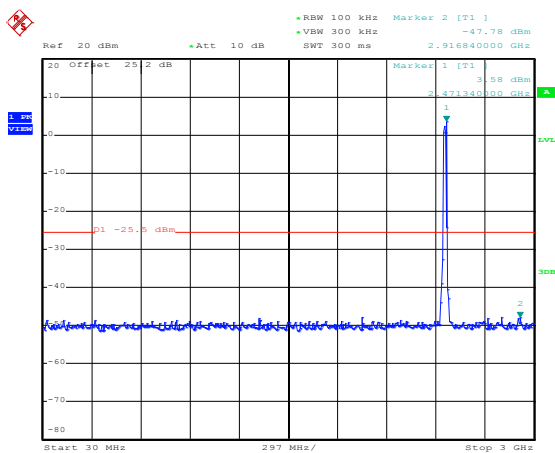
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High Channel Plot



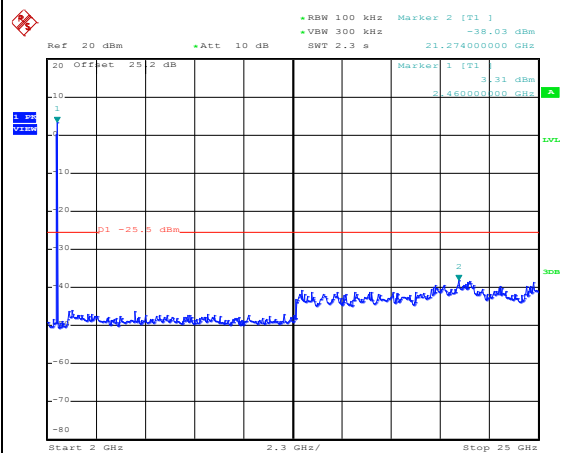
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Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:32:06

Spurious Emission 2GHz~25GHz

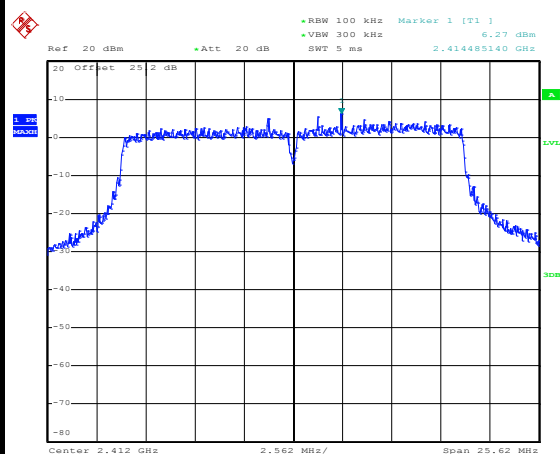


Date: 6.JAN.2020 15:32:21



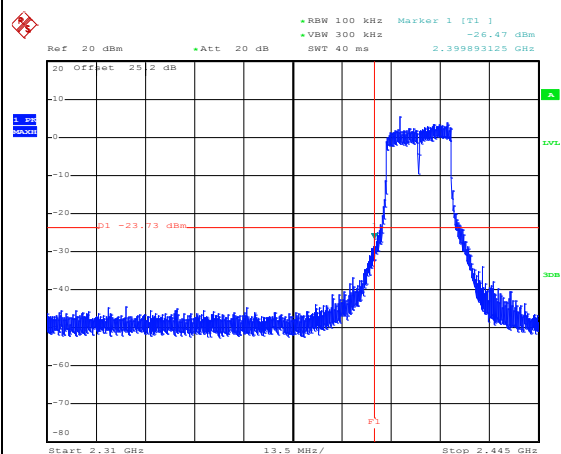
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100kHz PSD reference Level



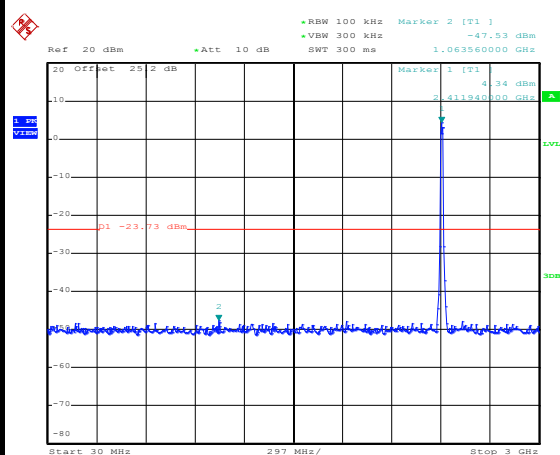
Date: 6.JAN.2020 15:41:31

Low Channel Plot



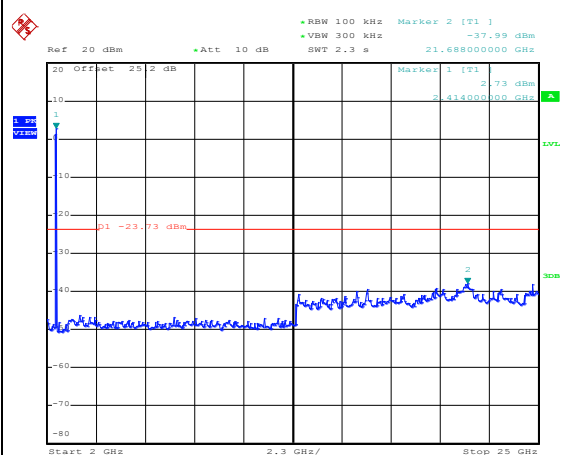
Date: 6.JAN.2020 15:41:49

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:42:22

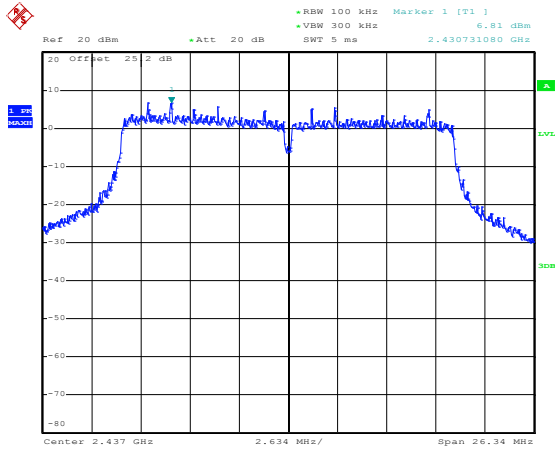
Spurious Emission 2GHz~25GHz



Date: 6.JAN.2020 15:42:37

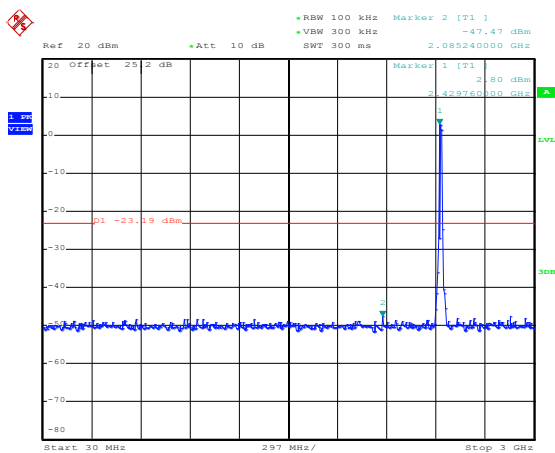
Test Mode :	802.11n HT20	Test Channel :	06
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100kHz PSD reference Level



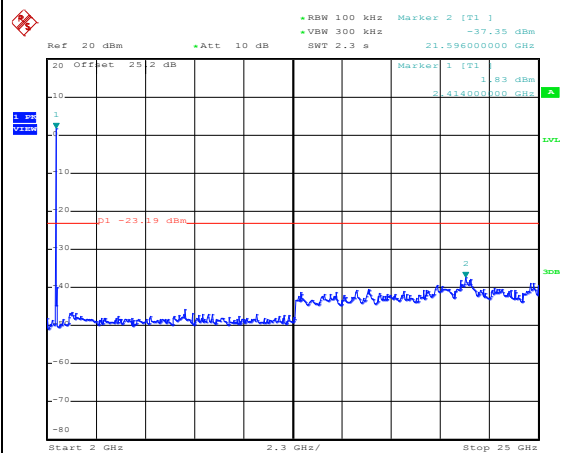
Date: 6.JAN.2020 15:49:43

Mid Channel Plot



Date: 6.JAN.2020 15:50:20

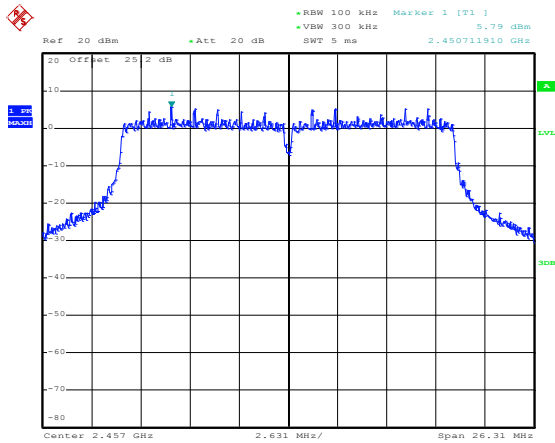
Spurious Emission 2GHz~25GHz



Date: 6.JAN.2020 15:50:35

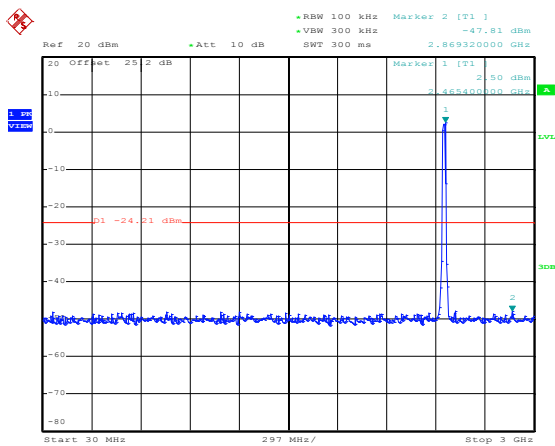
Test Mode :	802.11n HT20	Test Channel :	10
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100kHz PSD reference Level



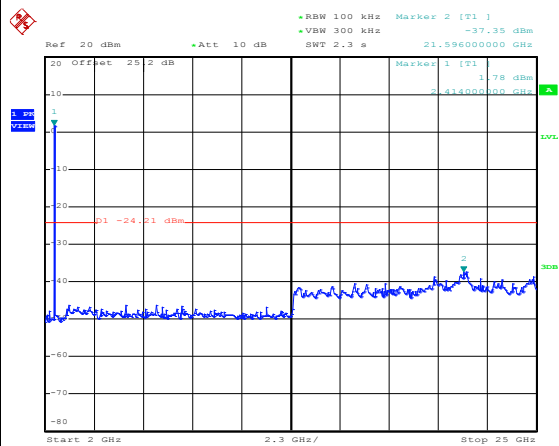
Date: 10.JAN.2020 02:05:28

High Channel Plot



Date: 10.JAN.2020 02:06:01

Spurious Emission 2GHz~25GHz

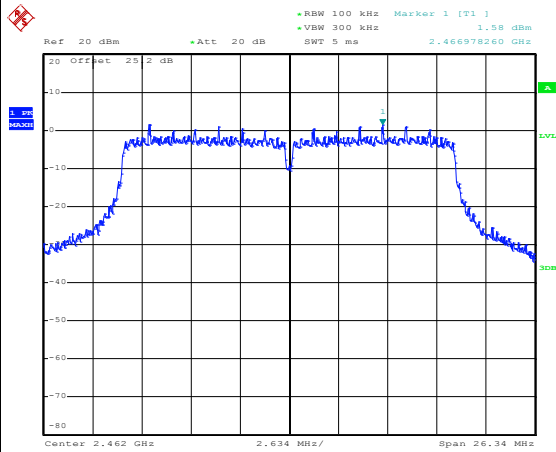


Date: 10.JAN.2020 02:07:06



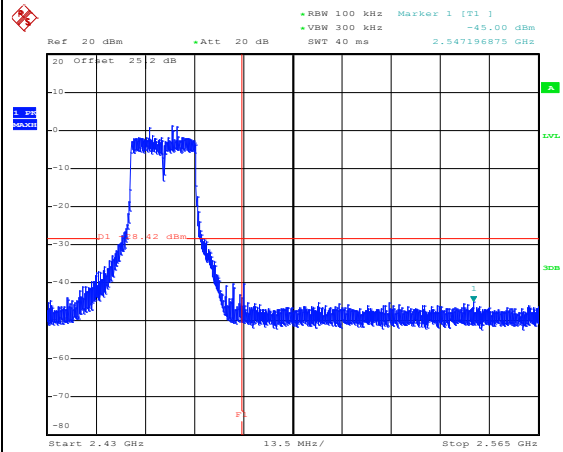
Test Mode :	802.11n HT20	Test Channel :	11
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100kHz PSD reference Level



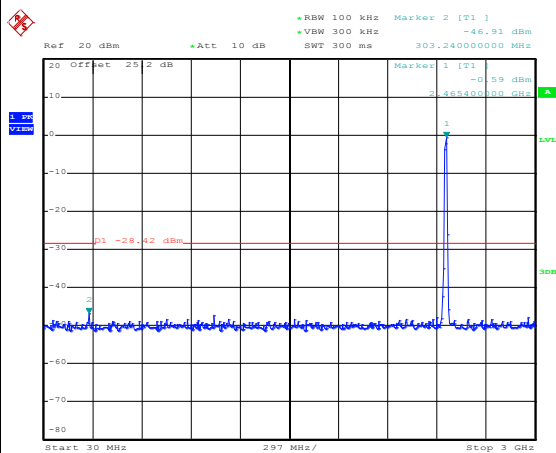
Date: 6.JAN.2020 15:56:46

High Channel Plot



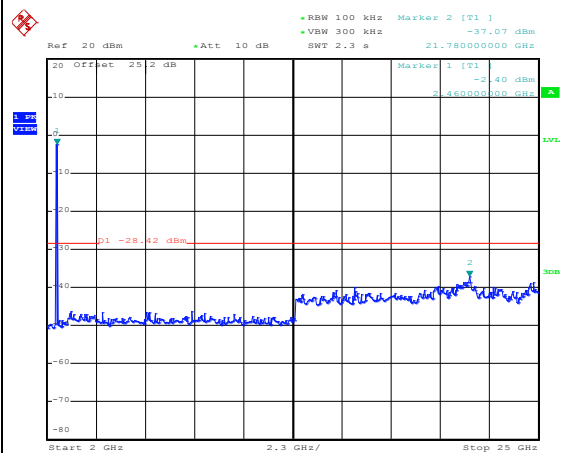
Date: 6.JAN.2020 15:57:07

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:57:31

Spurious Emission 2GHz~25GHz



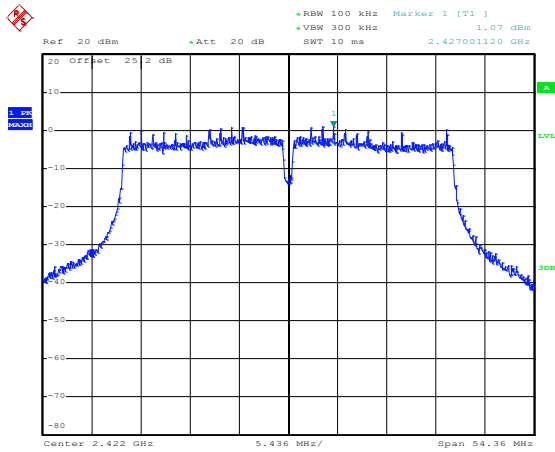
Date: 6.JAN.2020 15:57:45



Test Mode : 802.11n HT40

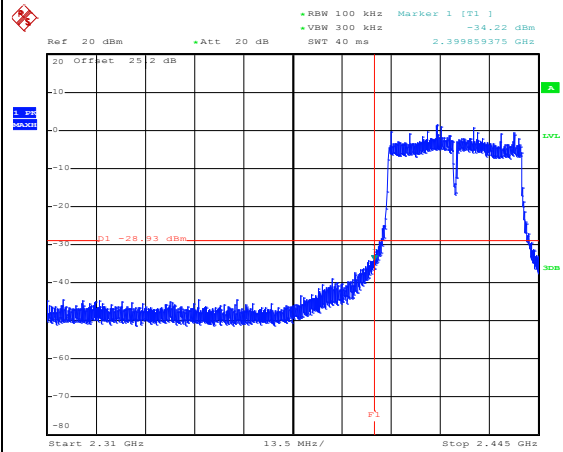
Test Channel : 03

100kHz PSD reference Level



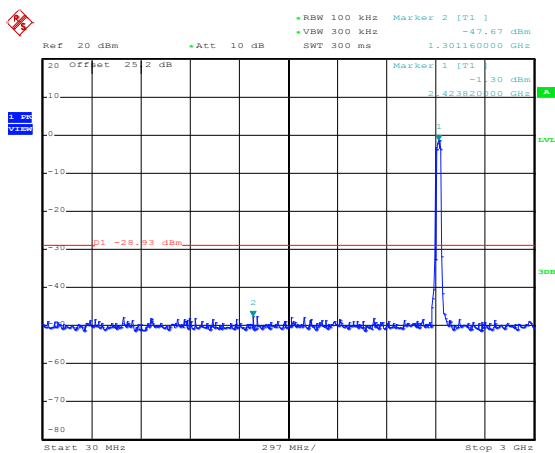
Date: 7.JAN.2020 10:05:16

Low Channel Plot



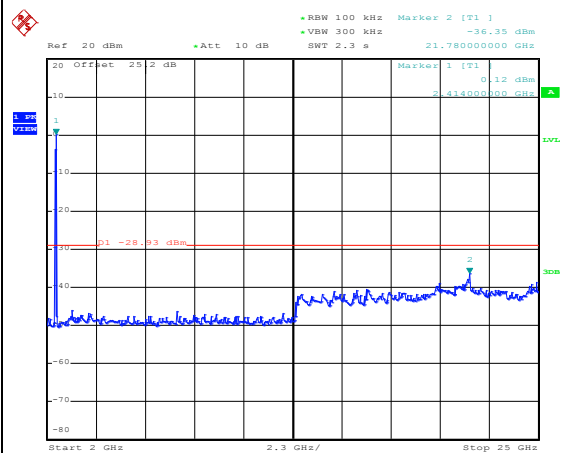
Date: 7.JAN.2020 10:05:47

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 10:06:17

Spurious Emission 2GHz~25GHz

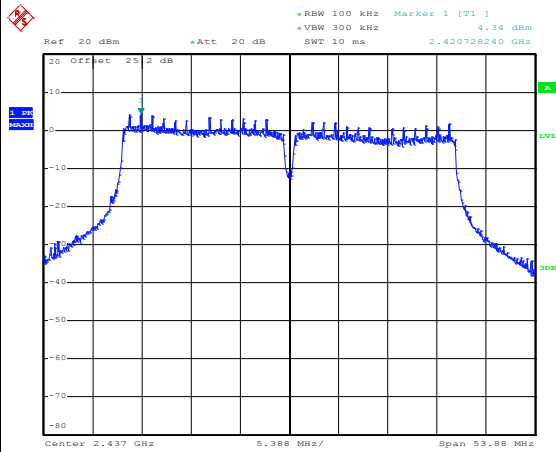


Date: 7.JAN.2020 10:06:35



Test Mode :	802.11n HT40	Test Channel :	06
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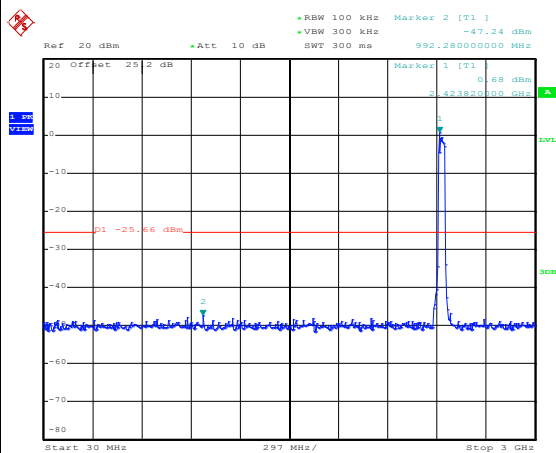
100kHz PSD reference Level



Date: 7.JAN.2020 10:25:12

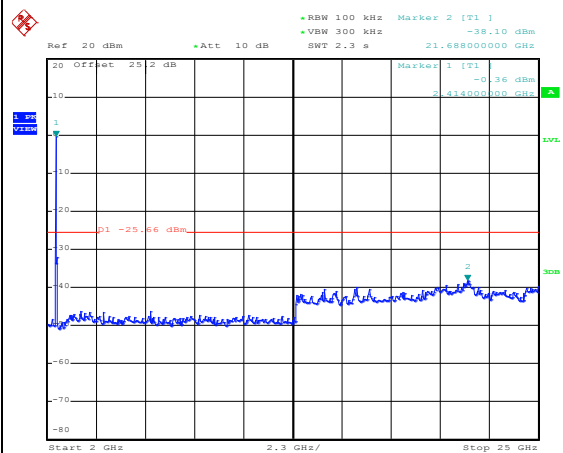
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 10:25:35

Spurious Emission 2GHz~25GHz

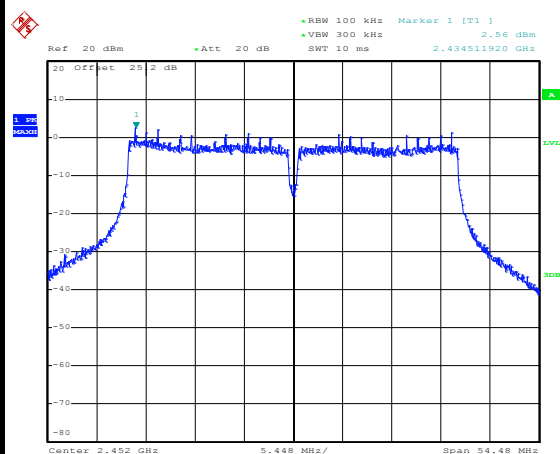


Date: 7.JAN.2020 10:26:08



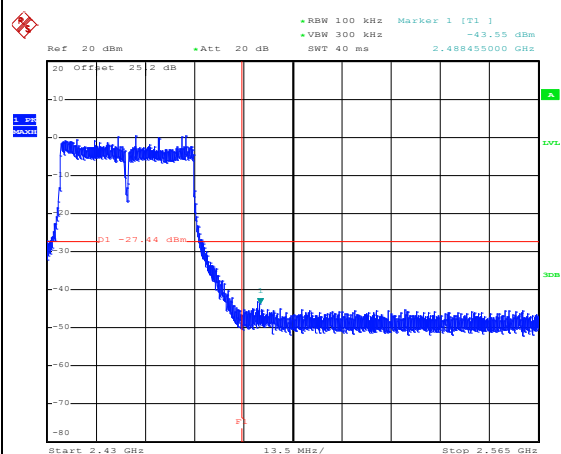
Test Mode :	802.11n HT40	Test Channel :	09
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100kHz PSD reference Level



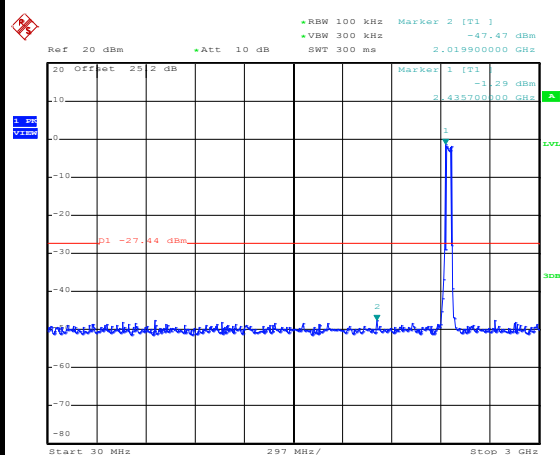
Date: 7.JAN.2020 10:46:40

High Channel Plot



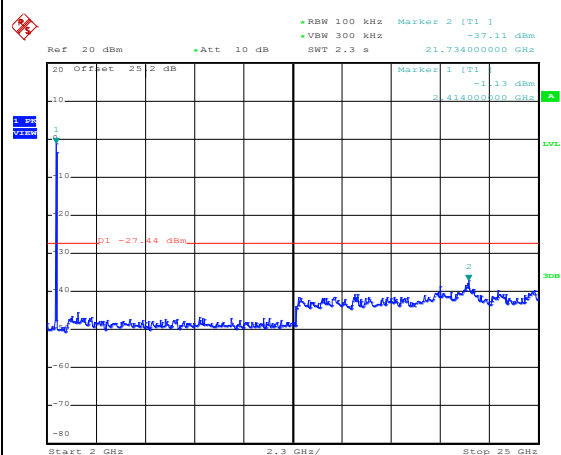
Date: 7.JAN.2020 10:47:27

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 10:48:01

Spurious Emission 2GHz~25GHz

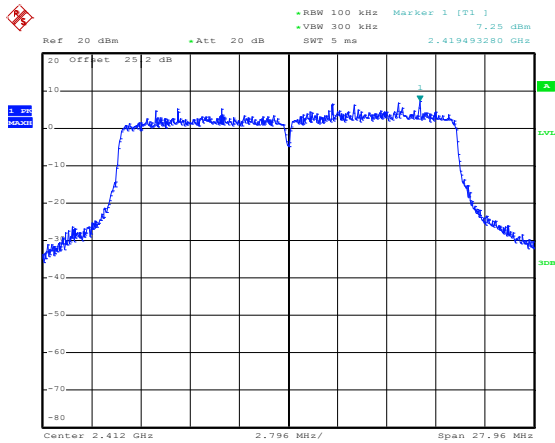


Date: 7.JAN.2020 10:48:17



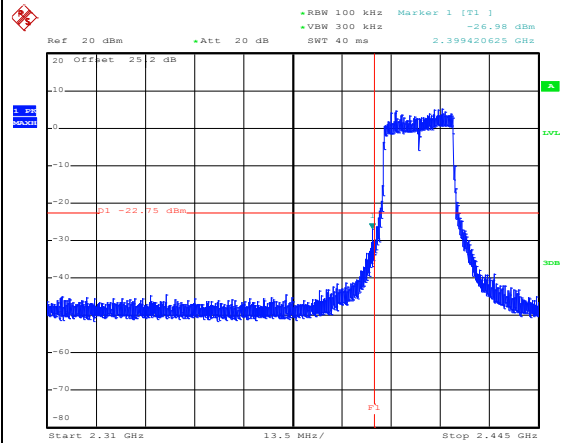
Test Mode :	802.11ax HE20 Full RU	Test Channel :	01
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100kHz PSD reference Level



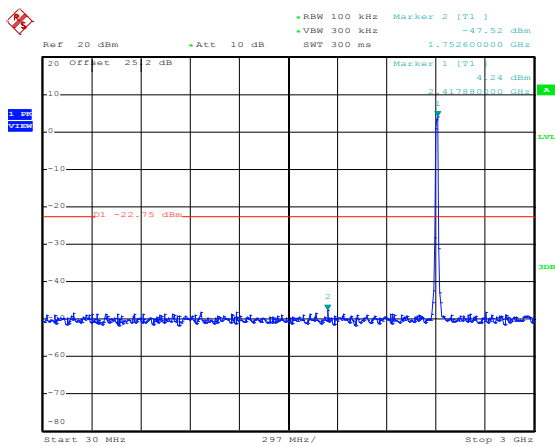
Date: 7.JAN.2020 13:07:23

Low Channel Plot



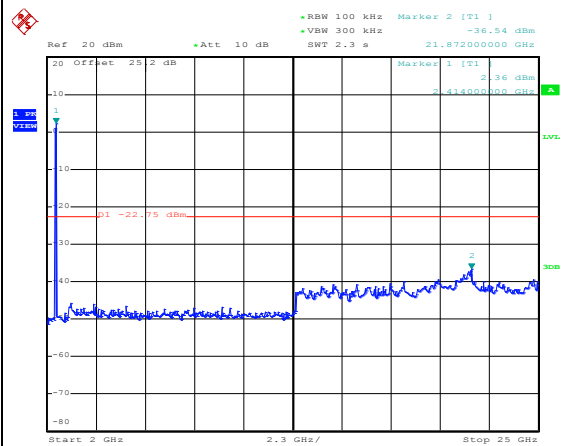
Date: 7.JAN.2020 13:07:40

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 13:08:01

Spurious Emission 2GHz~25GHz

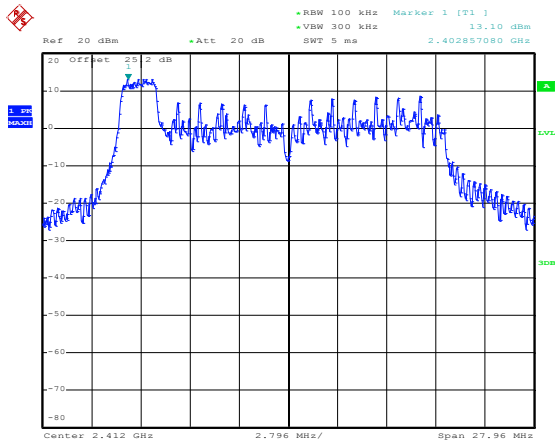


Date: 7.JAN.2020 13:08:17



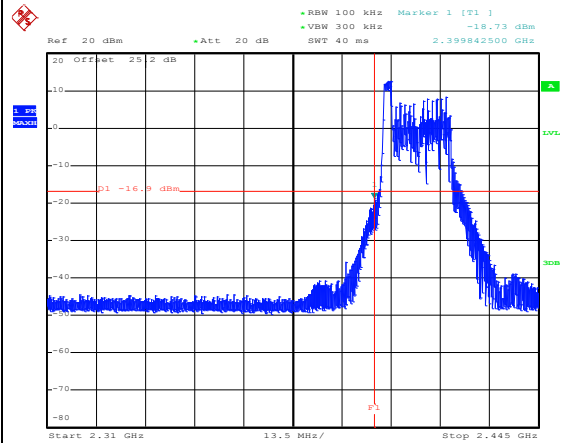
Test Mode :	802.11ax HE20 Partial RU 26/0	Test Channel :	01
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100kHz PSD reference Level



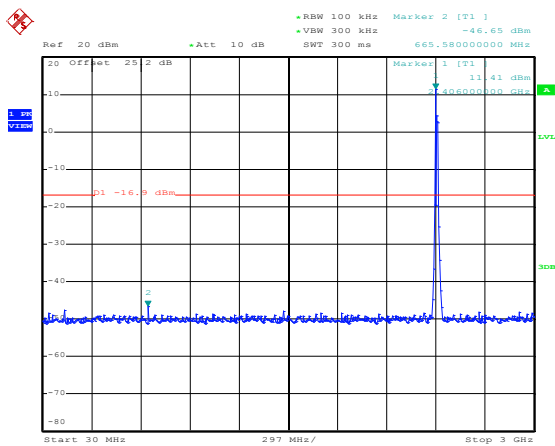
Date: 1.FEB.2020 05:34:19

Low Channel Plot



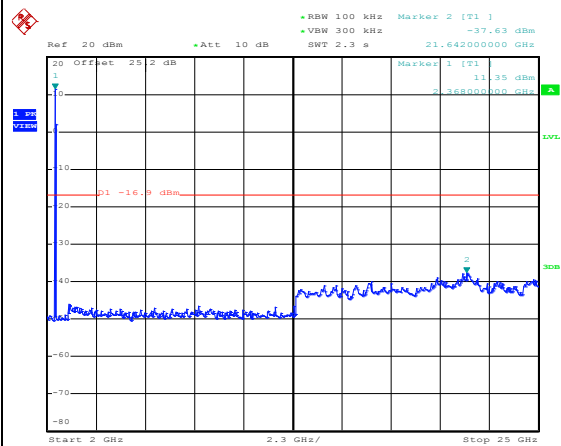
Date: 1.FEB.2020 05:35:31

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 05:36:59

Spurious Emission 2GHz~25GHz

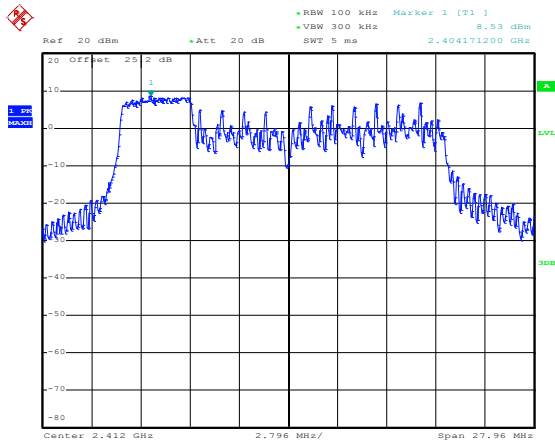


Date: 1.FEB.2020 05:37:17



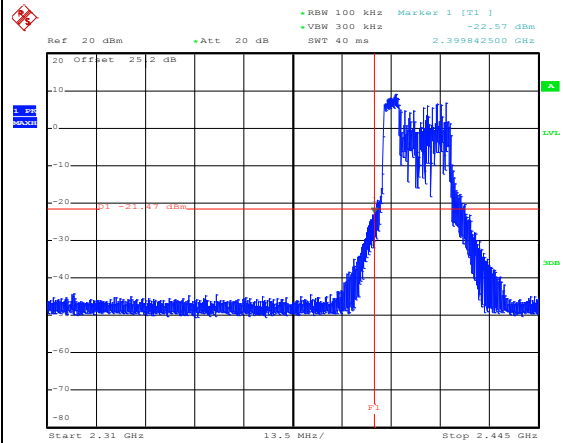
Test Mode :	802.11ax HE20 Partial RU 52/37	Test Channel :	01
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100kHz PSD reference Level



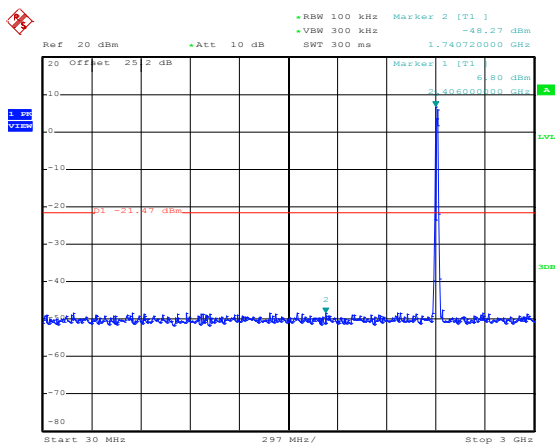
Date: 1.FEB.2020 05:23:15

Low Channel Plot



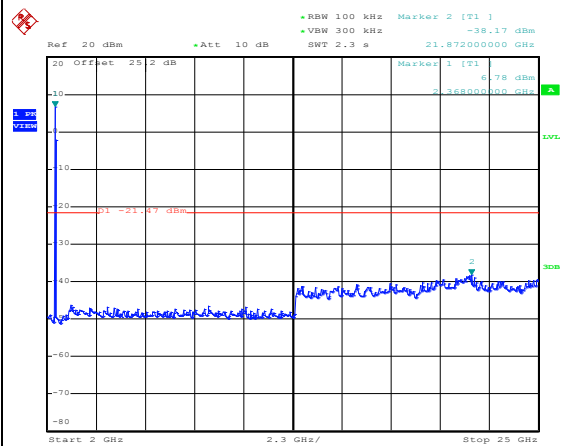
Date: 1.FEB.2020 05:23:55

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 05:24:15

Spurious Emission 2GHz~25GHz



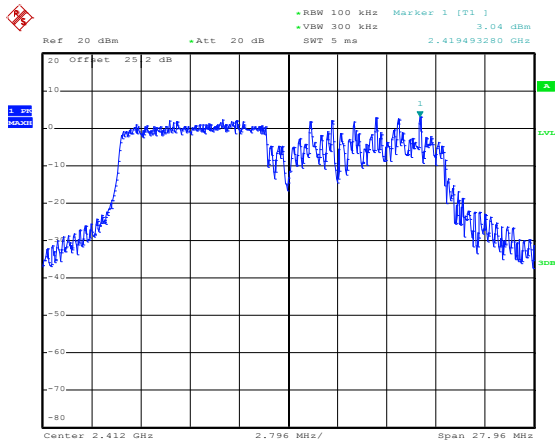
Date: 1.FEB.2020 05:24:37



Test Mode : 802.11ax HE20 Partial RU 106/53

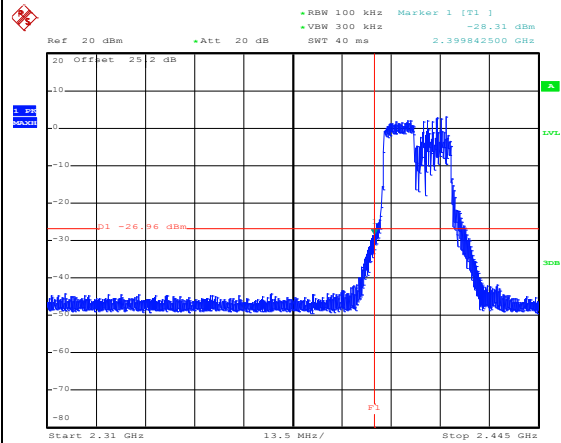
Test Channel : 01

100kHz PSD reference Level



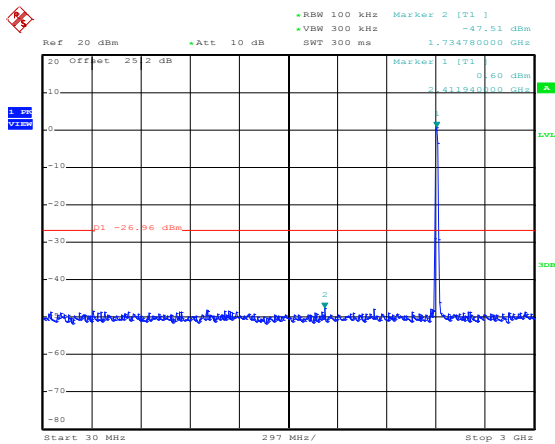
Date: 1.FEB.2020 04:58:02

Low Channel Plot



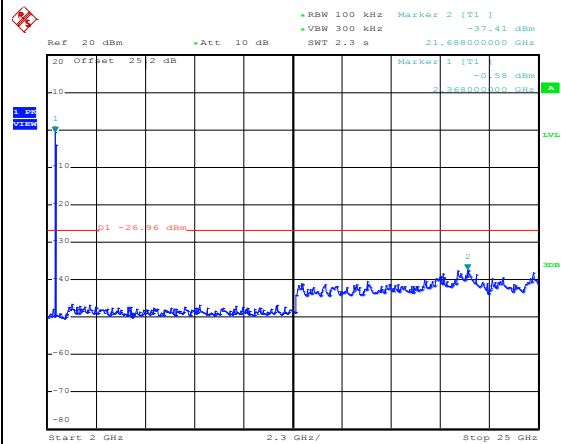
Date: 1.FEB.2020 04:59:11

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 04:59:31

Spurious Emission 2GHz~25GHz

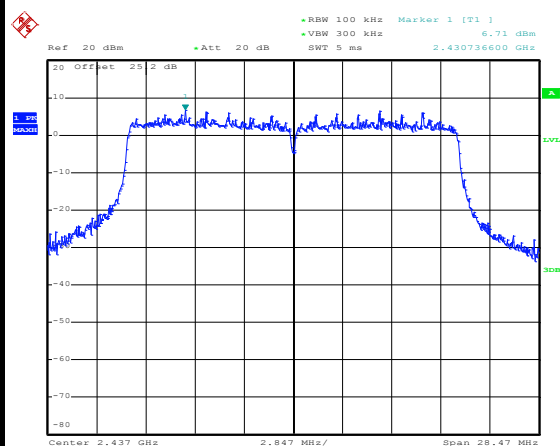


Date: 1.FEB.2020 04:59:47



Test Mode :	802.11ax HE20 Full RU	Test Channel :	06
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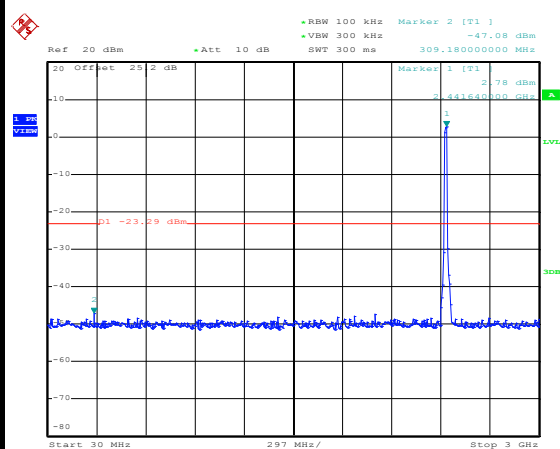
100kHz PSD reference Level



Date: 7.JAN.2020 13:32:48

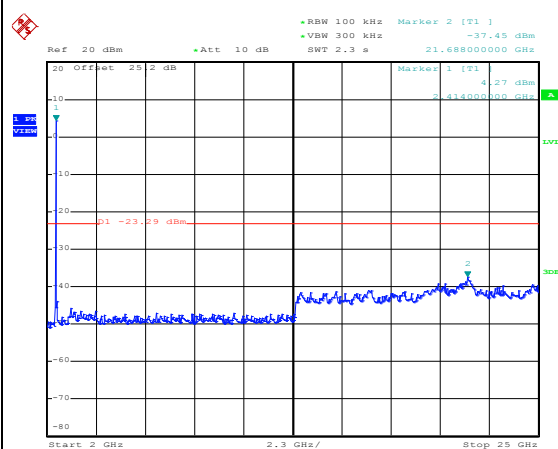
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 13:33:13

Spurious Emission 2GHz~25GHz

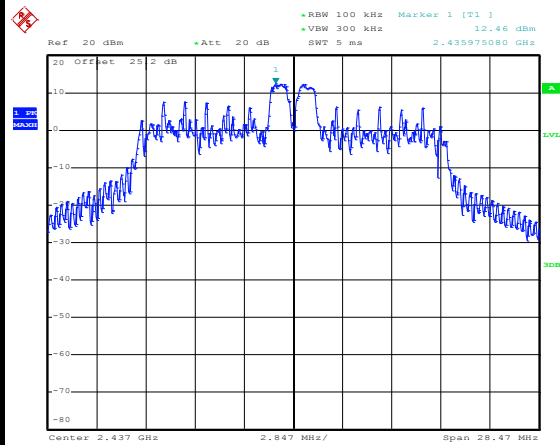


Date: 7.JAN.2020 13:33:31



Test Mode :	802.11ax HE20 Partial RU 26/4	Test Channel :	06
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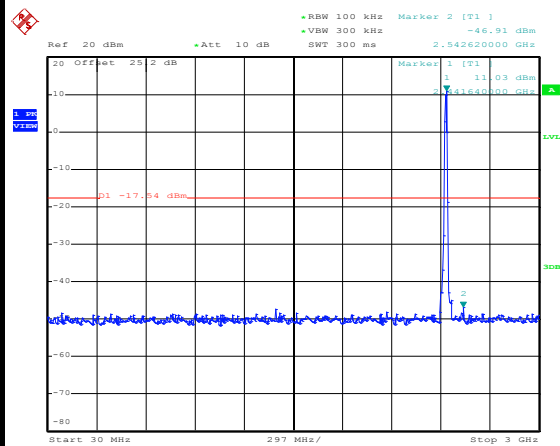
100kHz PSD reference Level



Date: 1.FEB.2020 03:27:32

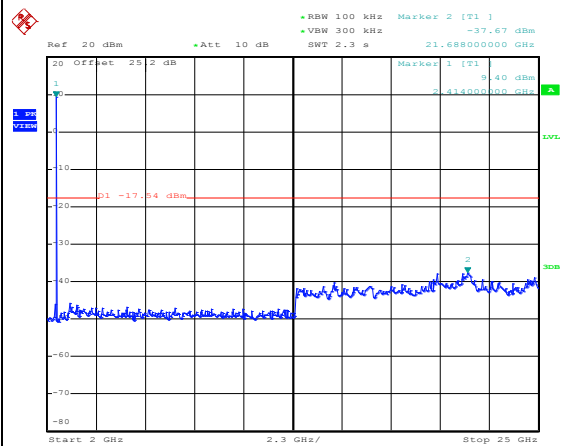
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 03:29:40

Spurious Emission 2GHz~25GHz

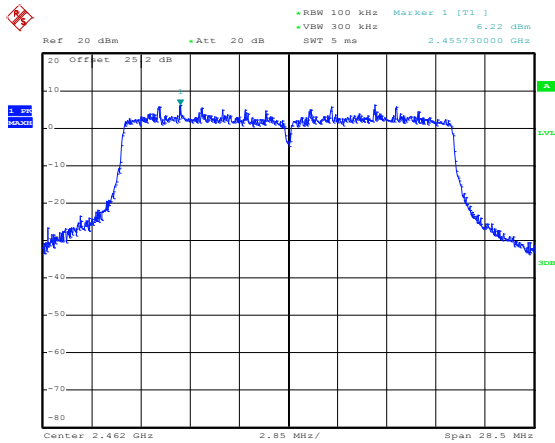


Date: 1.FEB.2020 03:29:55



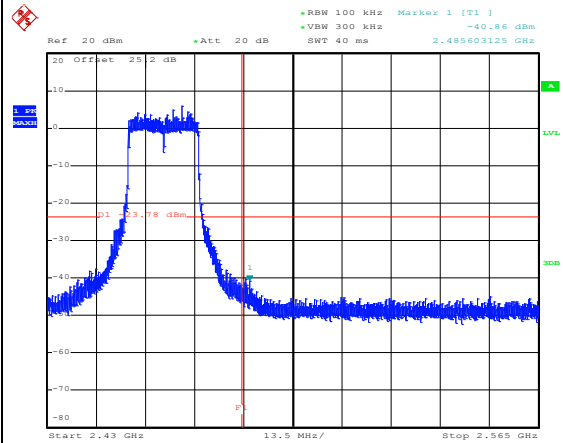
Test Mode :	802.11ax HE20 Full RU	Test Channel :	11
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100kHz PSD reference Level



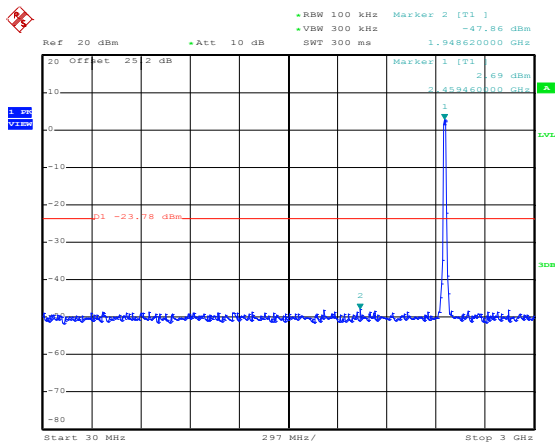
Date: 7.JAN.2020 13:39:40

High Channel Plot



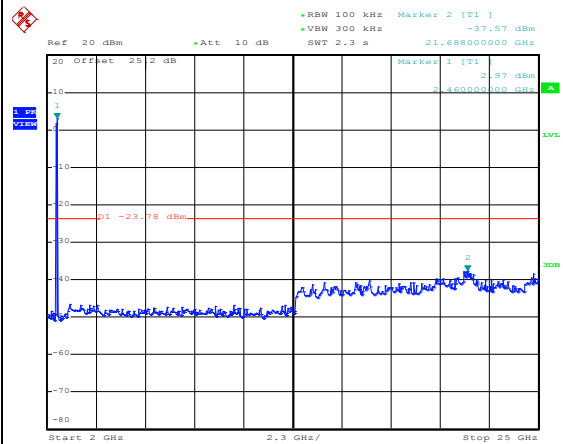
Date: 7.JAN.2020 13:41:32

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 13:41:57

Spurious Emission 2GHz~25GHz

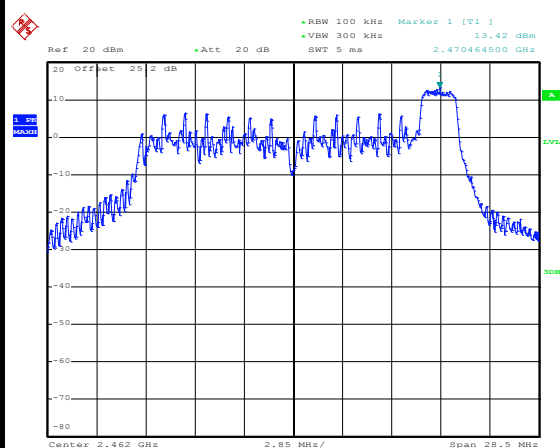


Date: 7.JAN.2020 13:42:13



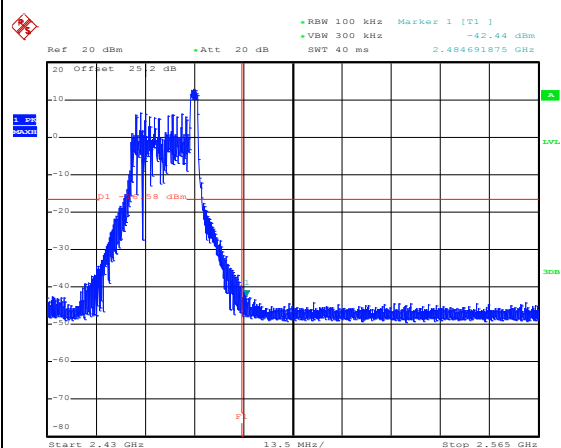
Test Mode :	802.11ax HE20 Partial RU 26/8	Test Channel :	11
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100kHz PSD reference Level



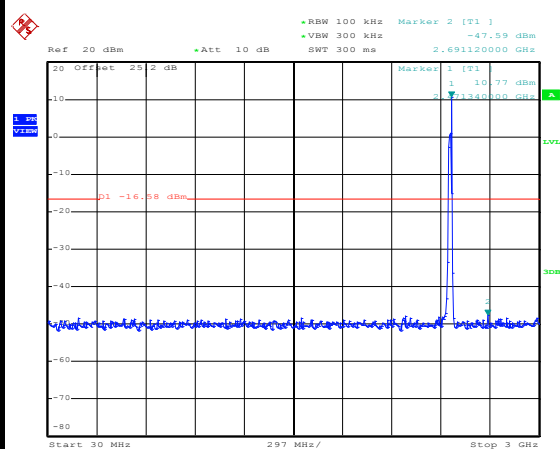
Date: 1.FEB.2020 03:55:39

High Channel Plot



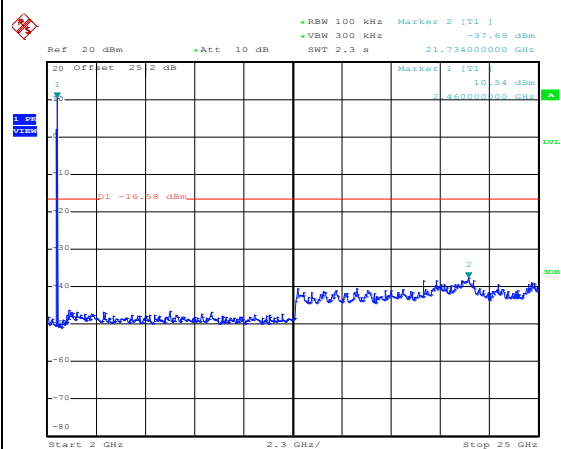
Date: 1.FEB.2020 03:56:54

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 03:57:25

Spurious Emission 2GHz~25GHz

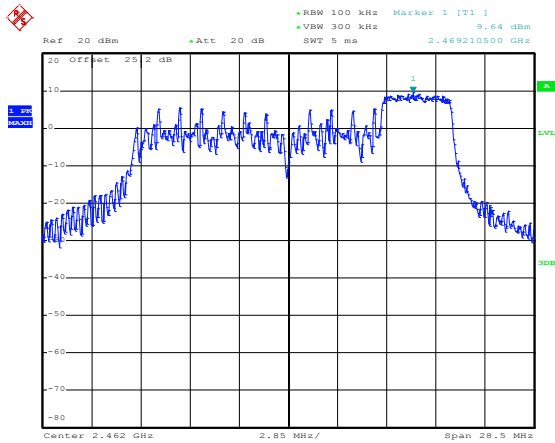


Date: 1.FEB.2020 03:57:51



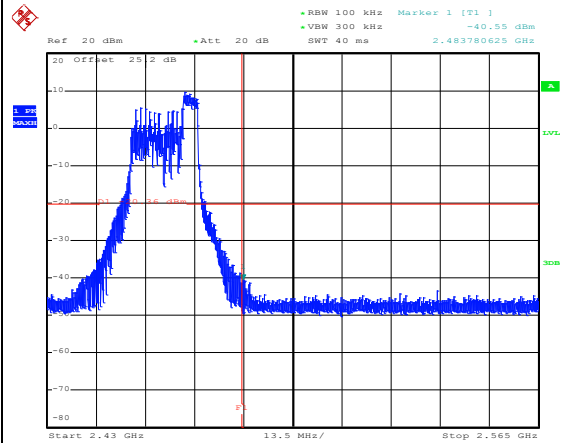
Test Mode :	802.11ax HE20 Partial RU 52/40	Test Channel :	11
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100kHz PSD reference Level



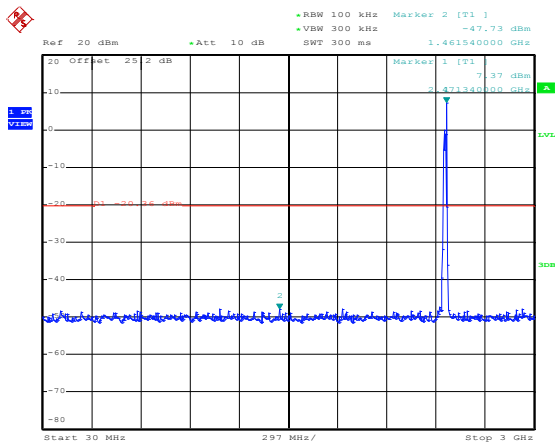
Date: 1.FEB.2020 03:59:59

High Channel Plot



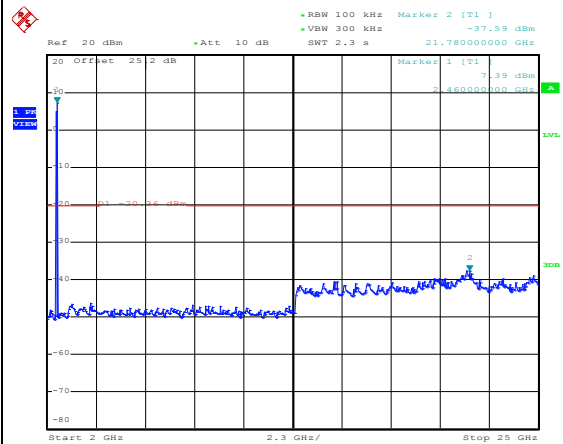
Date: 1.FEB.2020 04:00:58

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 04:01:27

Spurious Emission 2GHz~25GHz

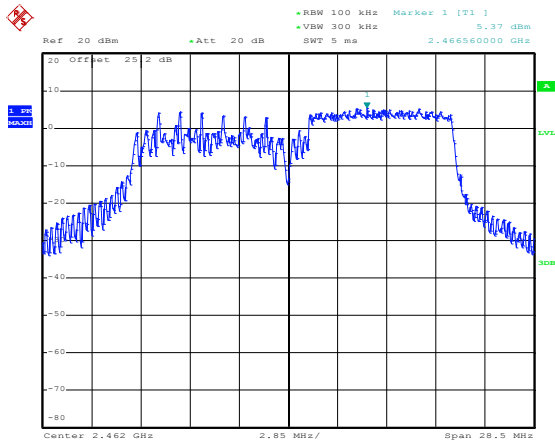


Date: 1.FEB.2020 04:01:42



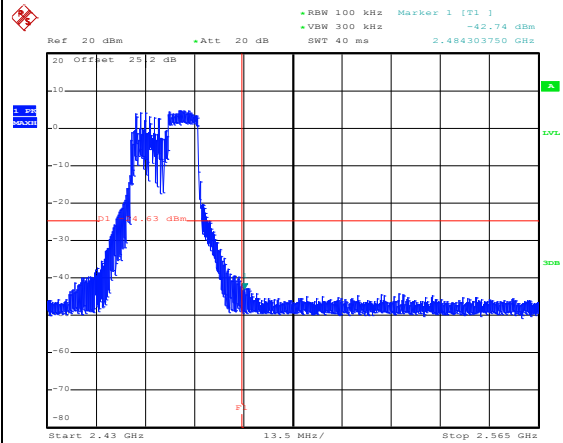
Test Mode :	802.11ax HE20 Partial RU 106/54	Test Channel :	11
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100kHz PSD reference Level



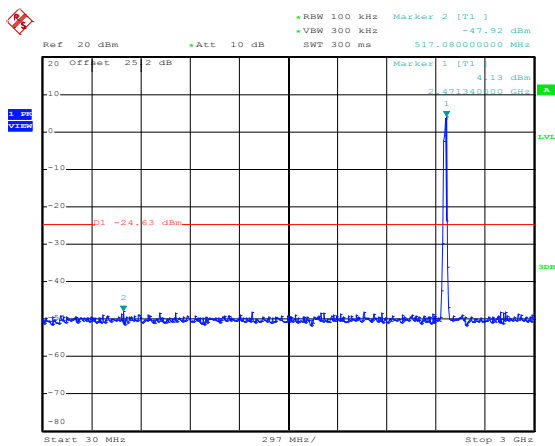
Date: 1.FEB.2020 04:28:12

High Channel Plot



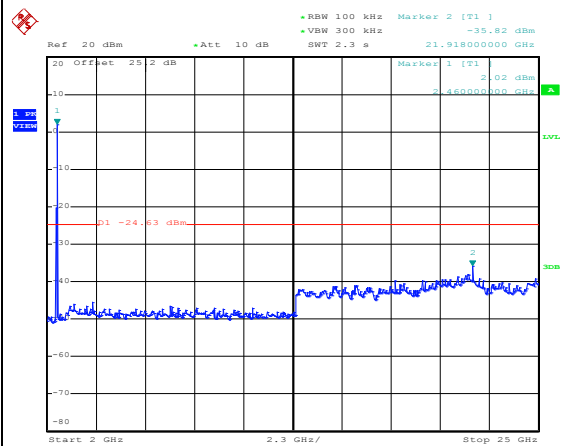
Date: 1.FEB.2020 04:29:12

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 04:29:42

Spurious Emission 2GHz~25GHz

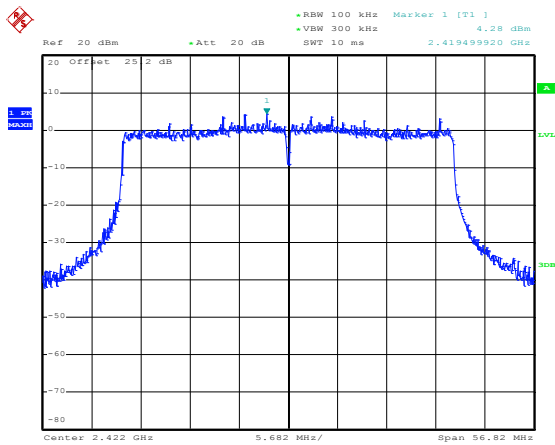


Date: 1.FEB.2020 04:30:01



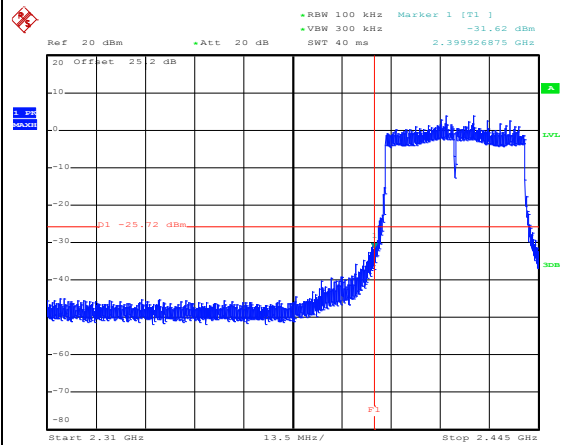
Test Mode :	802.11ax HE40 Full RU	Test Channel :	03
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100kHz PSD reference Level



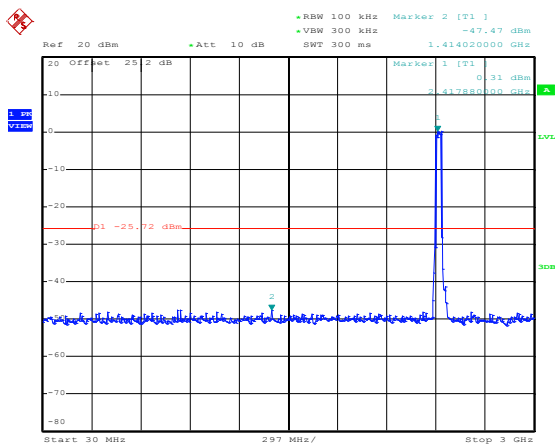
Date: 7.JAN.2020 14:10:20

Low Channel Plot



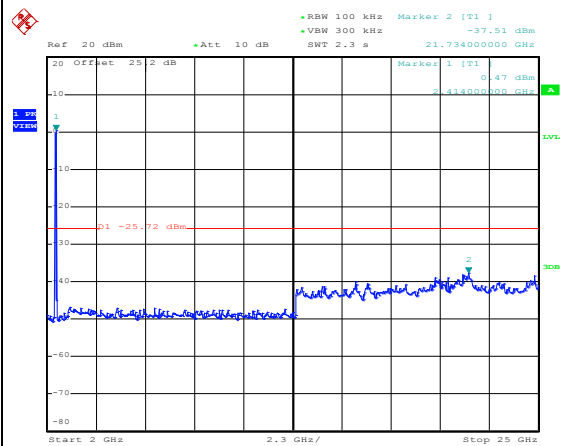
Date: 7.JAN.2020 14:10:41

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 14:14:02

Spurious Emission 2GHz~25GHz



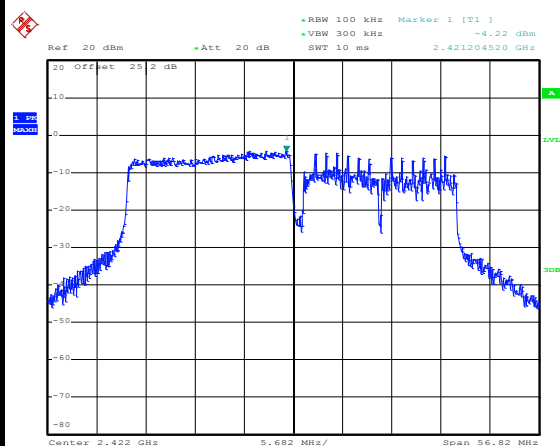
Date: 7.JAN.2020 14:14:22



Test Mode : 802.11ax HE40 Partial RU 242/61

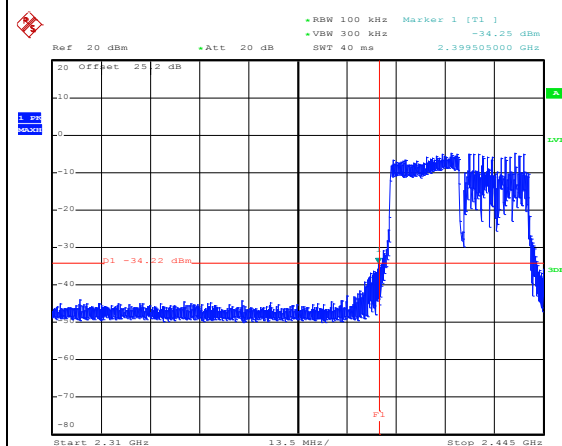
Test Channel : 03

100kHz PSD reference Level



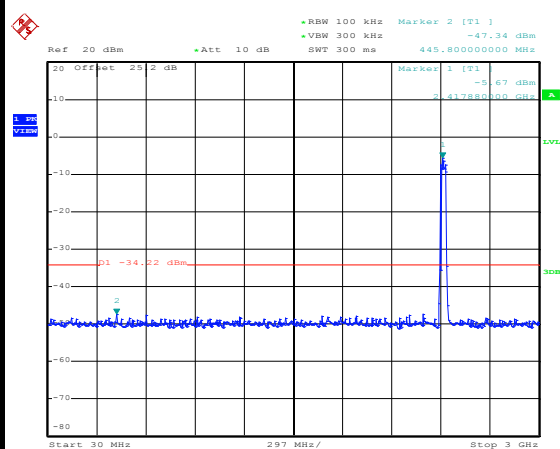
Date: 1.FEB.2020 03:01:45

Low Channel Plot



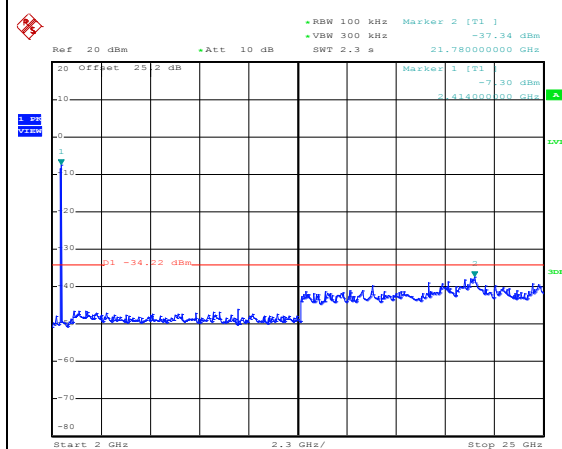
Date: 1.FEB.2020 03:21:00

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 03:21:53

Spurious Emission 2GHz~25GHz

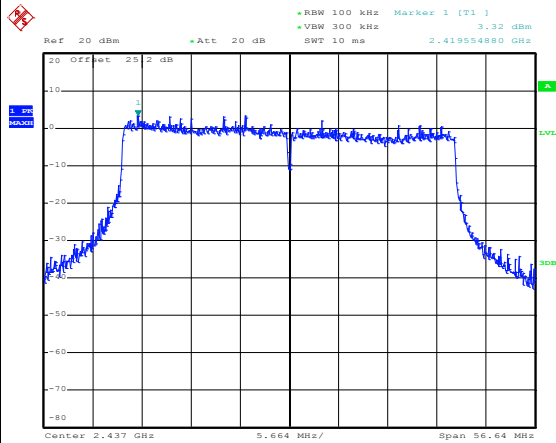


Date: 1.FEB.2020 03:22:10



Test Mode :	802.11ax HE40 Full RU	Test Channel :	06
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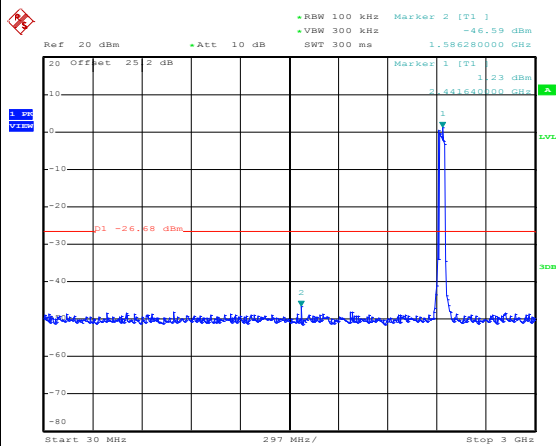
100kHz PSD reference Level



Date: 7.JAN.2020 14:33:45

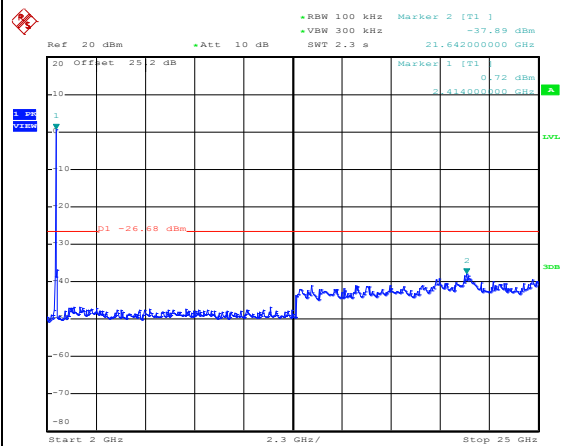
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 14:34:45

Spurious Emission 2GHz~25GHz

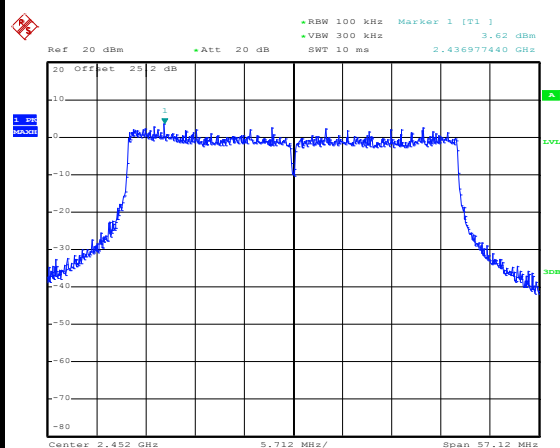


Date: 7.JAN.2020 14:35:03



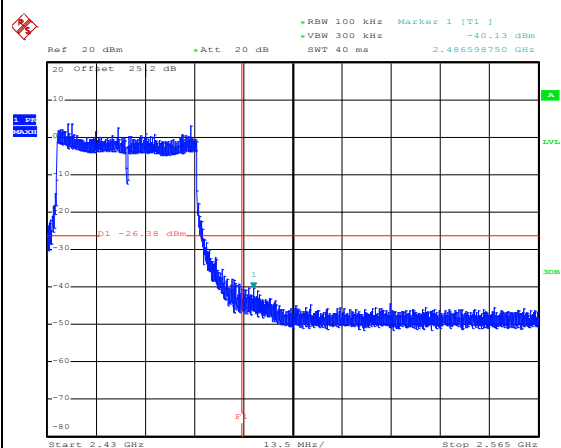
Test Mode :	802.11ax HE40 Full RU	Test Channel :	09
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100kHz PSD reference Level



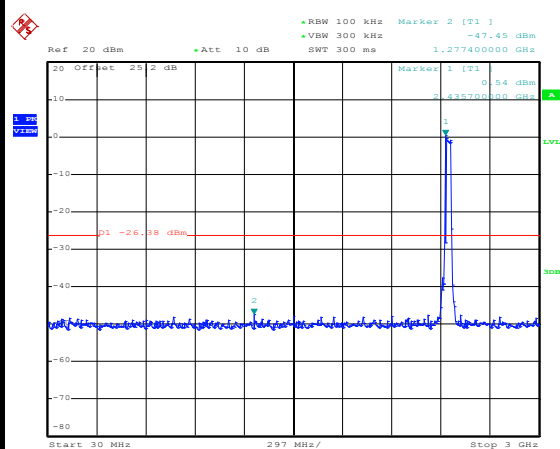
Date: 7.JAN.2020 14:54:26

High Channel Plot



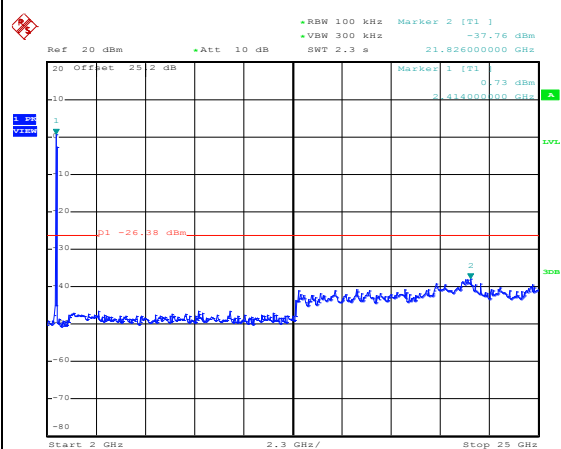
Date: 7.JAN.2020 14:54:44

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 14:55:08

Spurious Emission 2GHz~25GHz

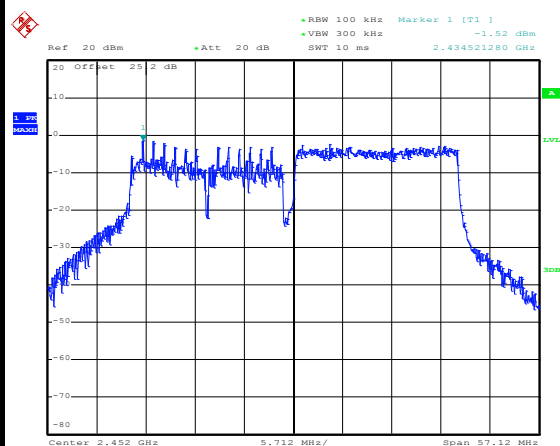


Date: 7.JAN.2020 14:55:23



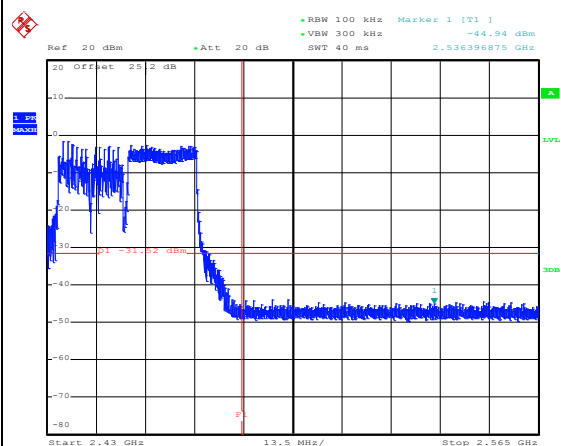
Test Mode :	802.11ax HE40 Partial RU 242/62	Test Channel :	09
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100kHz PSD reference Level



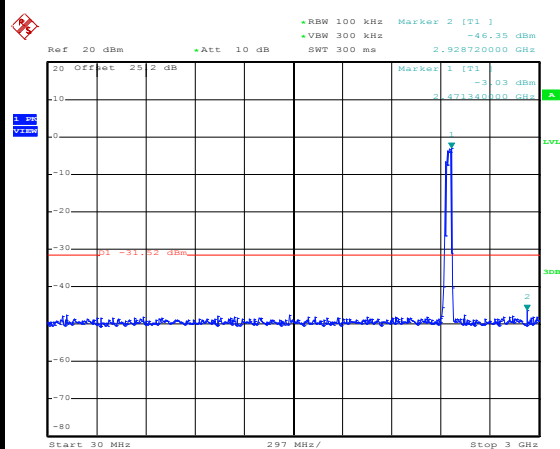
Date: 1.FEB.2020 01:22:16

High Channel Plot



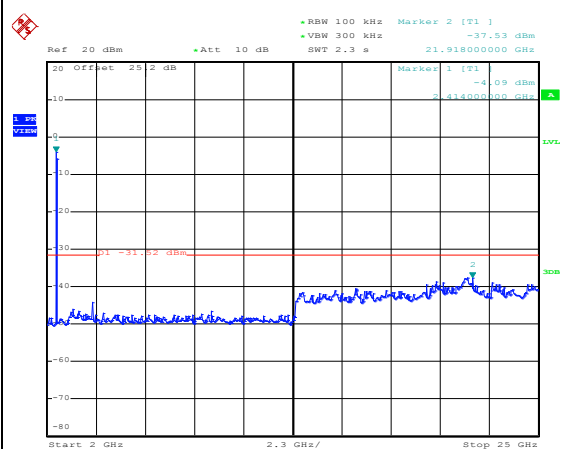
Date: 1.FEB.2020 01:23:16

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 01:25:43

Spurious Emission 2GHz~25GHz



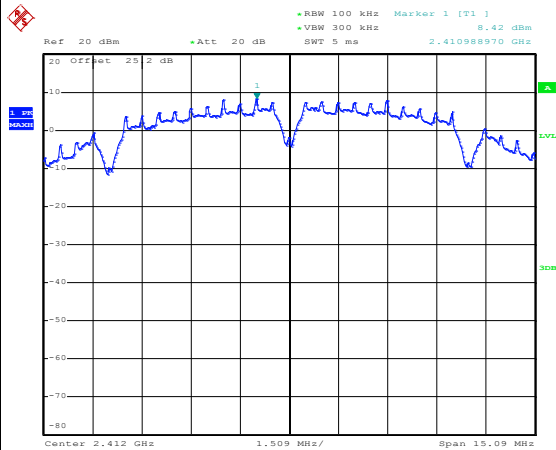
Date: 1.FEB.2020 01:26:06



Number of TX = 2, Ant. 2 (Measured)

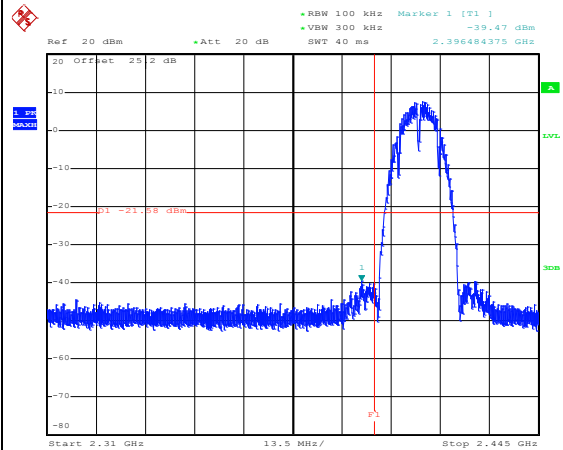
Test Mode :	802.11b	Test Channel :	01
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100kHz PSD reference Level



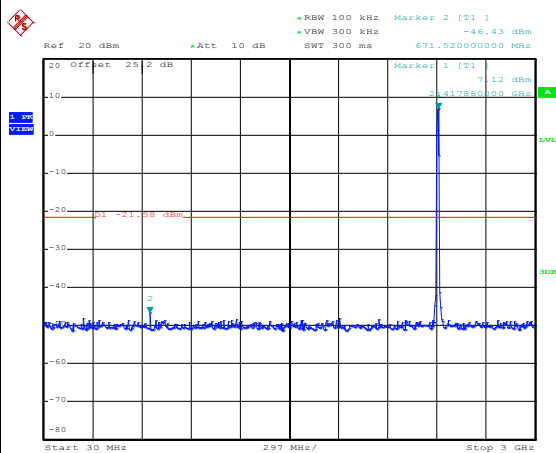
Date: 6.JAN.2020 14:44:59

Low Channel Plot



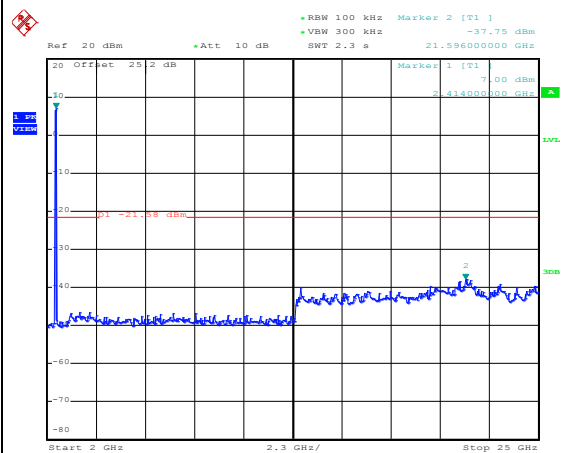
Date: 6.JAN.2020 14:45:56

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 14:46:17

Spurious Emission 2GHz~25GHz

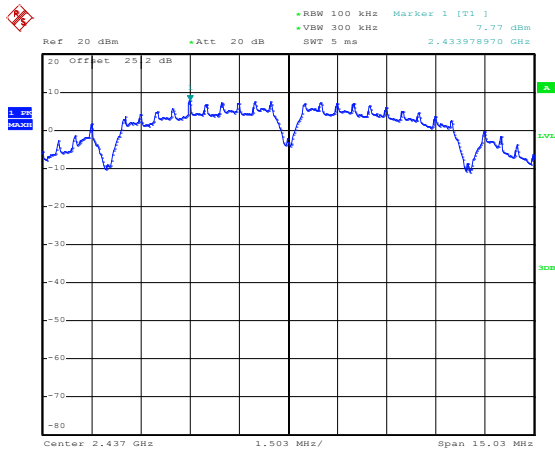


Date: 6.JAN.2020 14:46:34



Test Mode :	802.11b	Test Channel :	06
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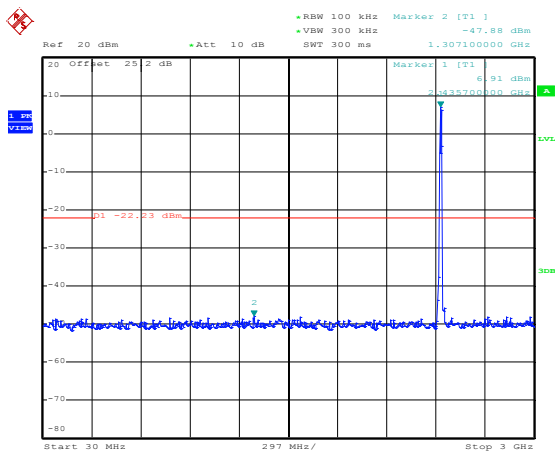
100kHz PSD reference Level



Date: 6.JAN.2020 14:57:52

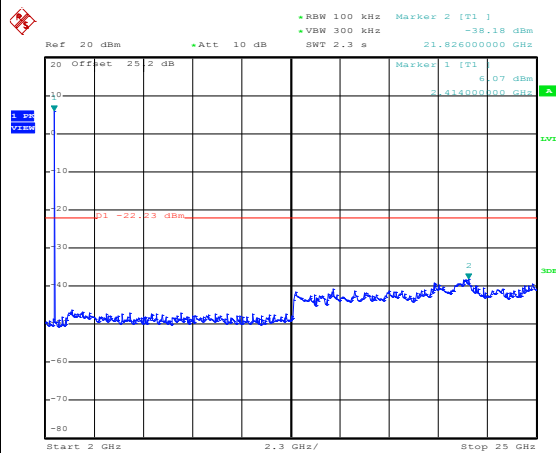
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 14:58:25

Spurious Emission 2GHz~25GHz

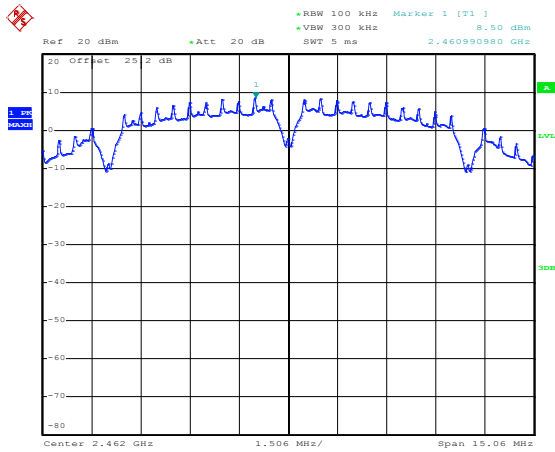


Date: 6.JAN.2020 14:58:40



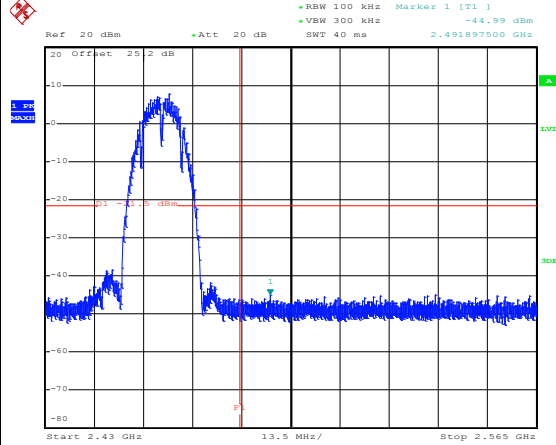
Test Mode :	802.11b	Test Channel :	11
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100kHz PSD reference Level



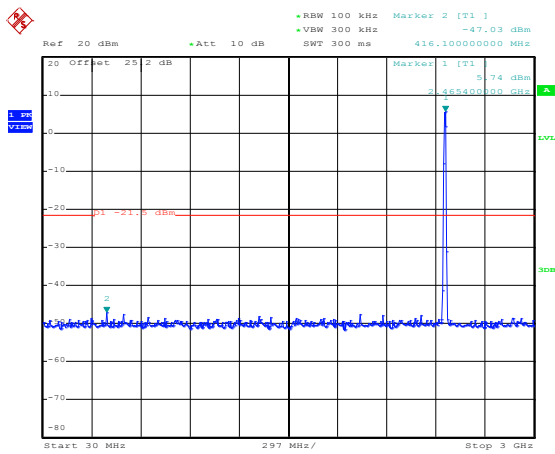
Date: 6.JAN.2020 15:07:03

High Channel Plot



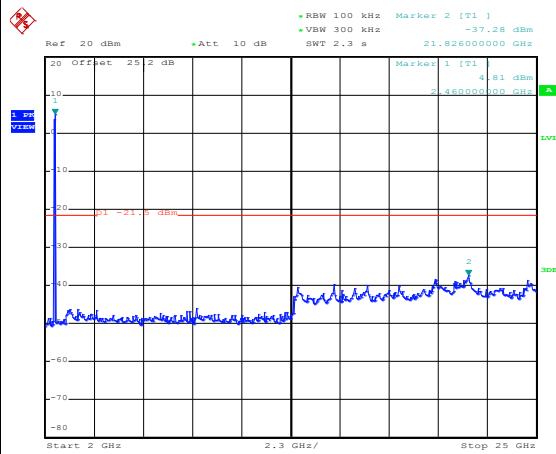
Date: 6.JAN.2020 15:07:18

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:07:43

Spurious Emission 2GHz~25GHz

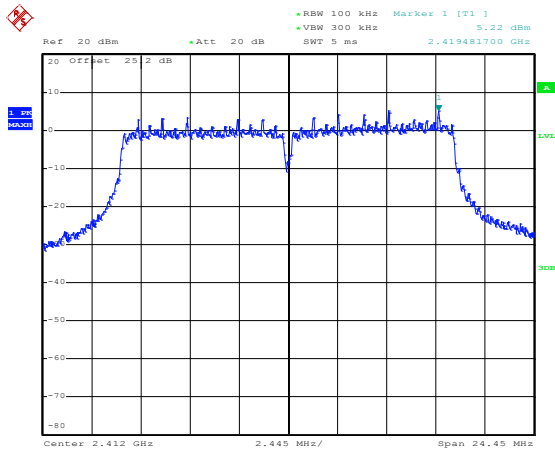


Date: 6.JAN.2020 15:07:57



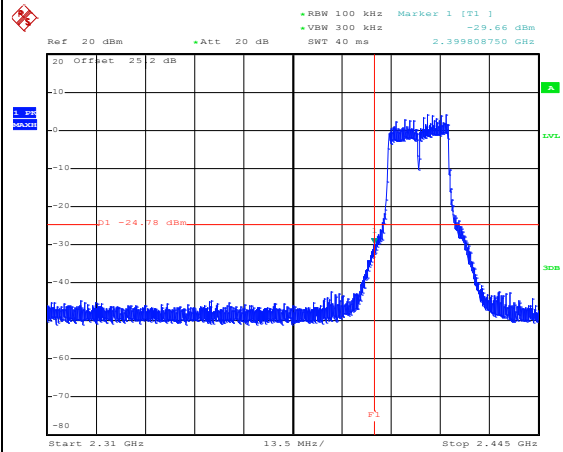
Test Mode :	802.11g	Test Channel :	01
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100kHz PSD reference Level



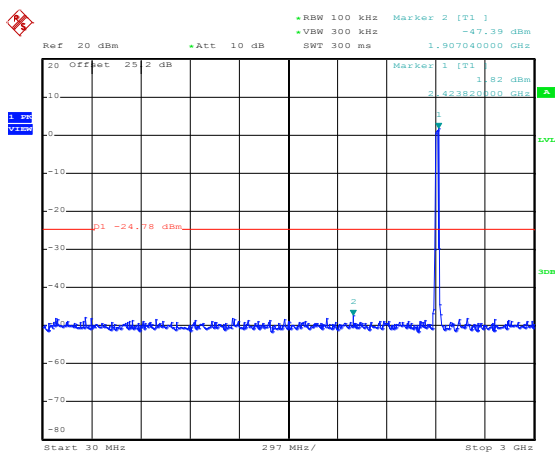
Date: 6.JAN.2020 15:14:32

Low Channel Plot



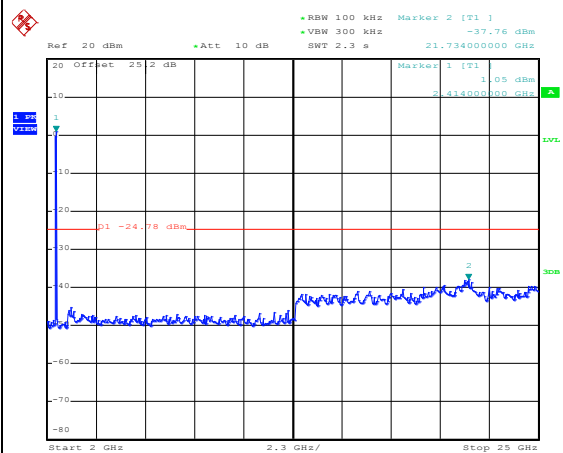
Date: 6.JAN.2020 15:15:04

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:15:45

Spurious Emission 2GHz~25GHz

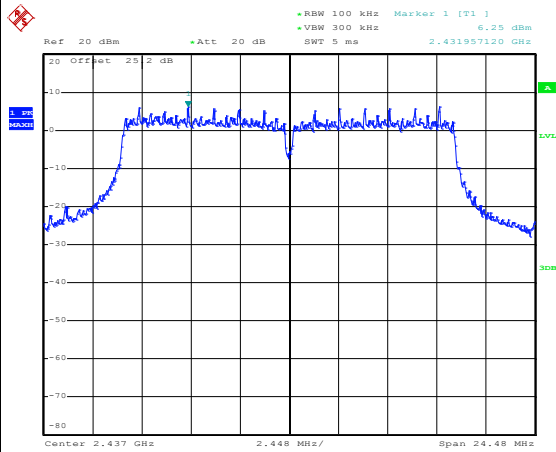


Date: 6.JAN.2020 15:15:59



Test Mode :	802.11g	Test Channel :	06
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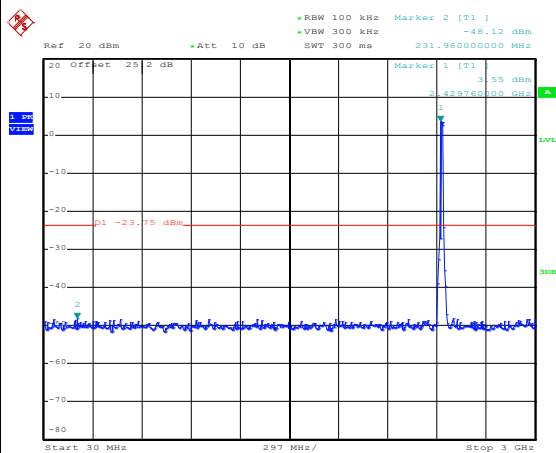
100kHz PSD reference Level



Date: 6.JAN.2020 15:23:33

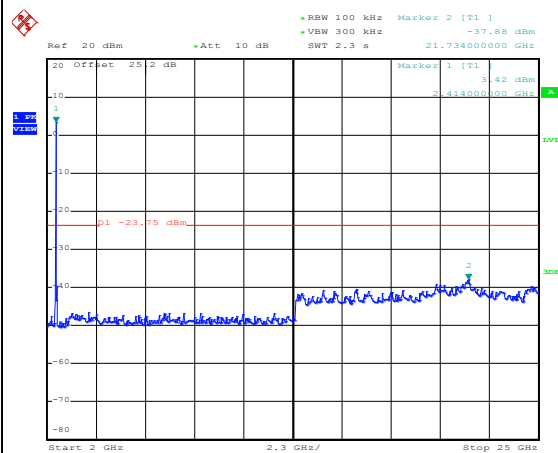
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:24:27

Spurious Emission 2GHz~25GHz

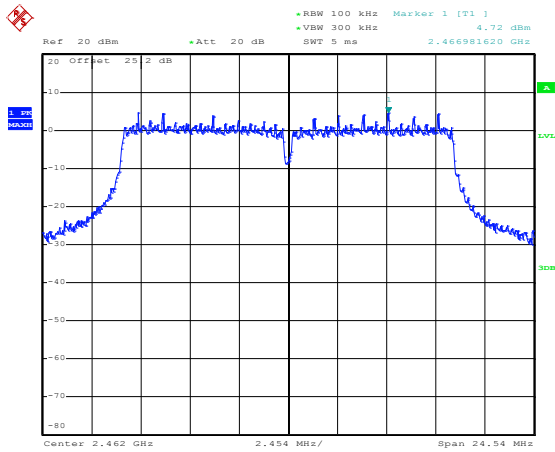


Date: 6.JAN.2020 15:24:47



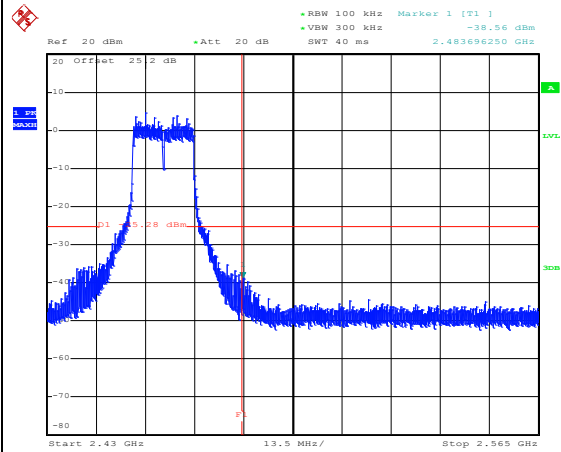
Test Mode :	802.11g	Test Channel :	11
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100kHz PSD reference Level



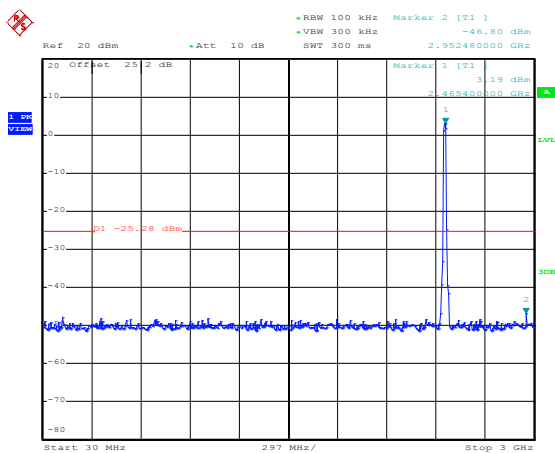
Date: 6.JAN.2020 15:34:02

High Channel Plot



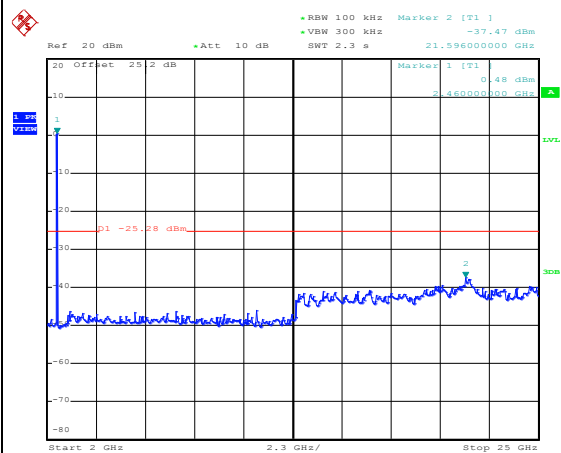
Date: 6.JAN.2020 15:34:46

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:35:14

Spurious Emission 2GHz~25GHz

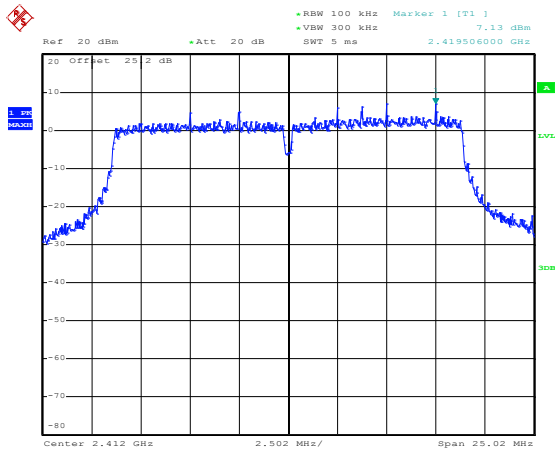


Date: 6.JAN.2020 15:35:31



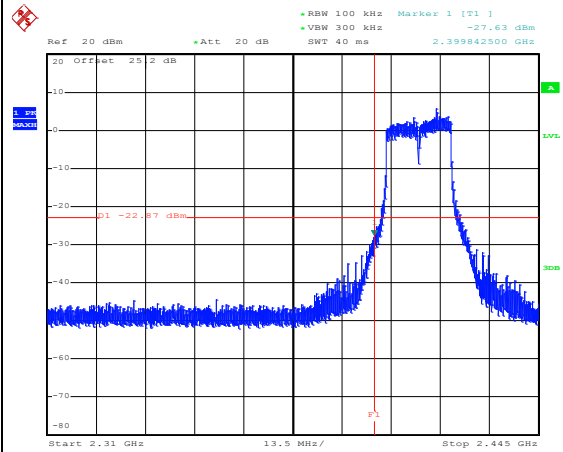
Test Mode :	802.11n HT20	Test Channel :	01
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100kHz PSD reference Level



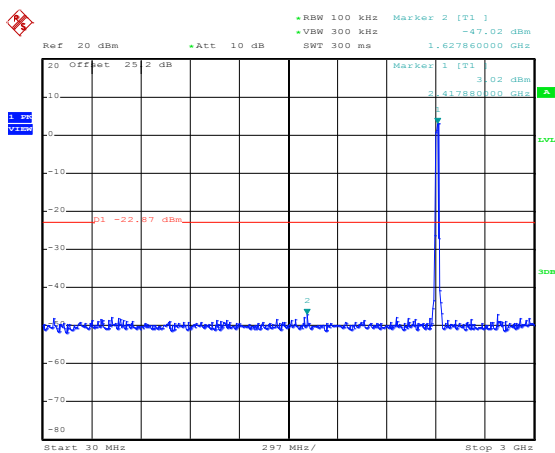
Date: 6.JAN.2020 15:45:09

Low Channel Plot



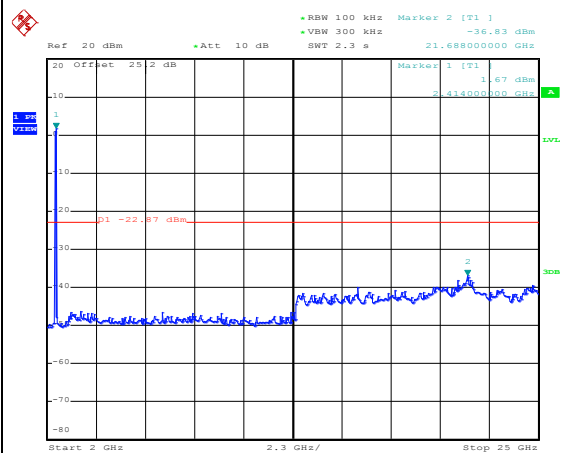
Date: 6.JAN.2020 15:45:48

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:46:16

Spurious Emission 2GHz~25GHz

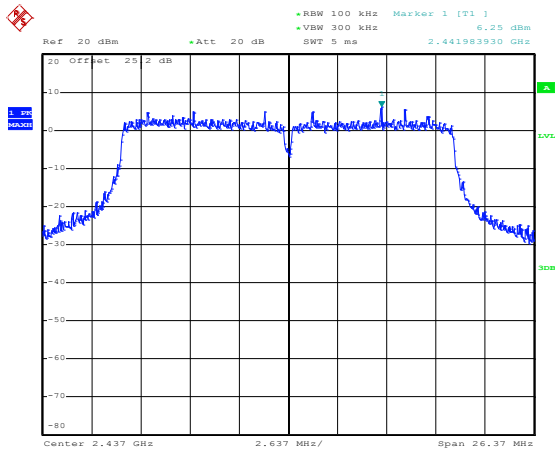


Date: 6.JAN.2020 15:46:38



Test Mode :	802.11n HT20	Test Channel :	06
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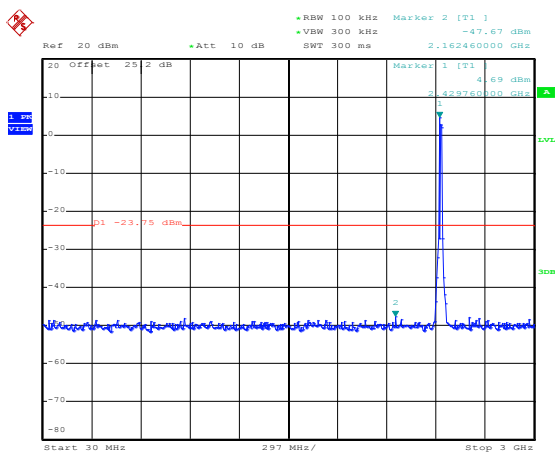
100kHz PSD reference Level



Date: 6.JAN.2020 15:52:42

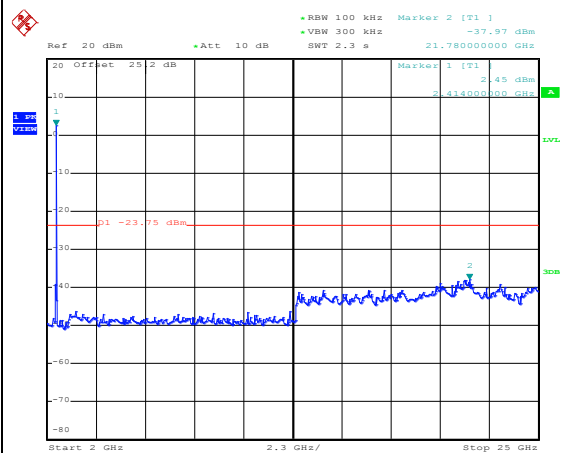
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 15:53:11

Spurious Emission 2GHz~25GHz

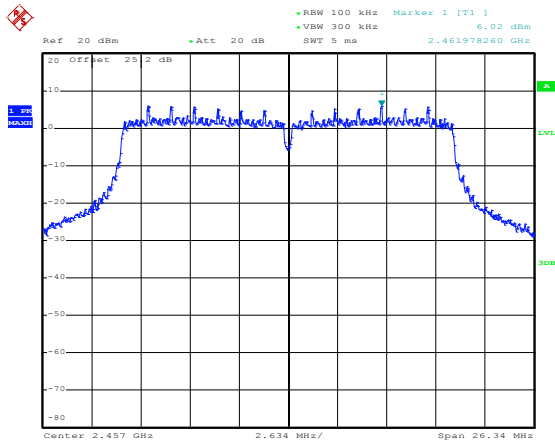


Date: 6.JAN.2020 15:53:28



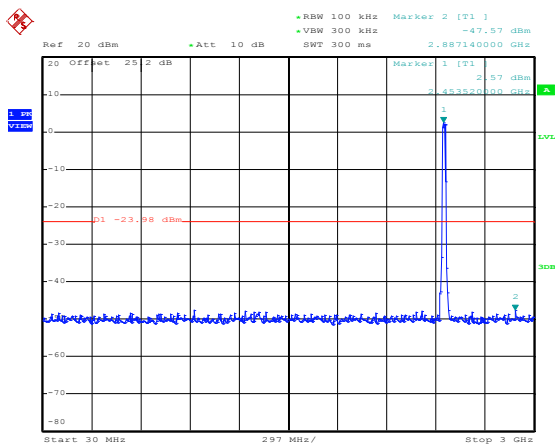
Test Mode :	802.11n HT20	Test Channel :	10
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100kHz PSD reference Level

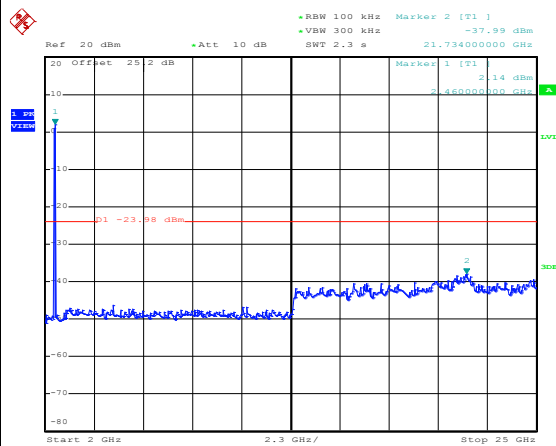


Date: 10.JAN.2020 02:13:40

High Channel Plot



Date: 10.JAN.2020 02:14:10

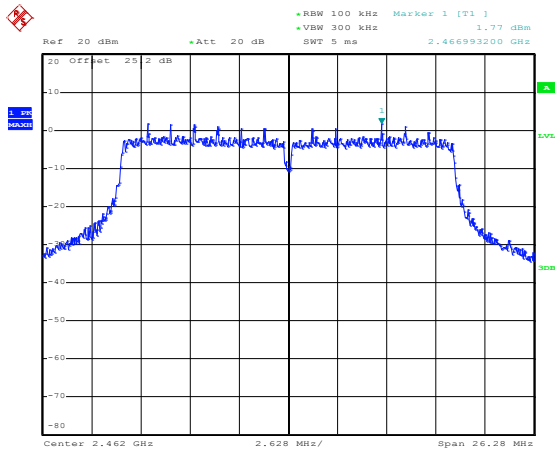


Date: 10.JAN.2020 02:14:30



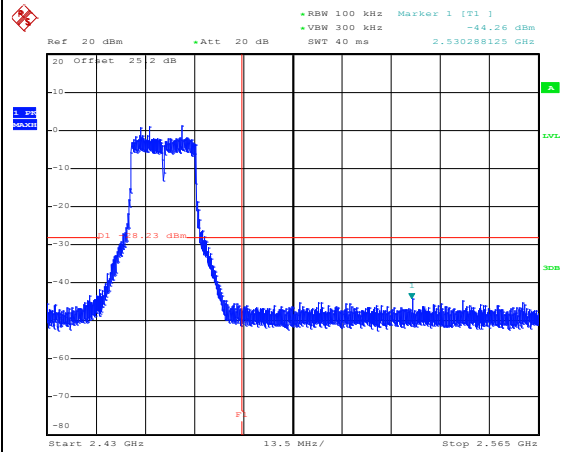
Test Mode :	802.11n HT20	Test Channel :	11
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100kHz PSD reference Level



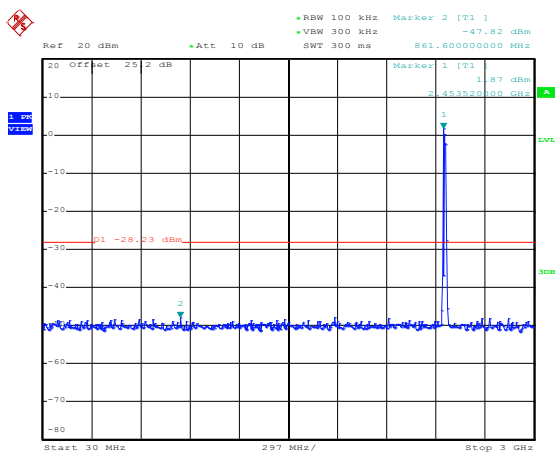
Date: 6.JAN.2020 15:59:25

High Channel Plot



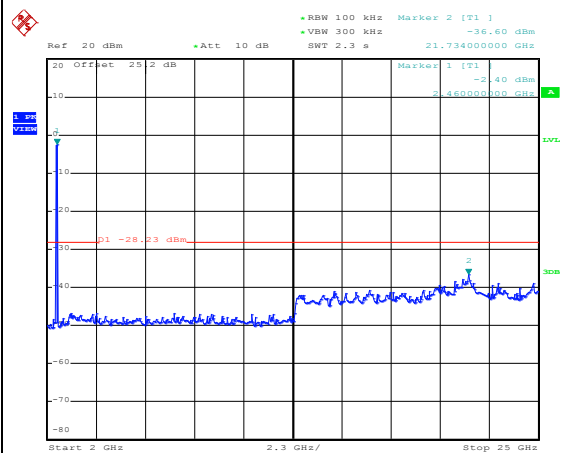
Date: 6.JAN.2020 15:59:41

Spurious Emission 30MHz~3GHz



Date: 6.JAN.2020 16:00:02

Spurious Emission 2GHz~25GHz

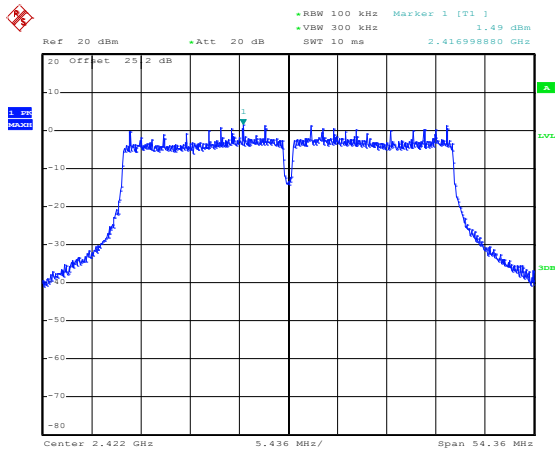


Date: 6.JAN.2020 16:00:30



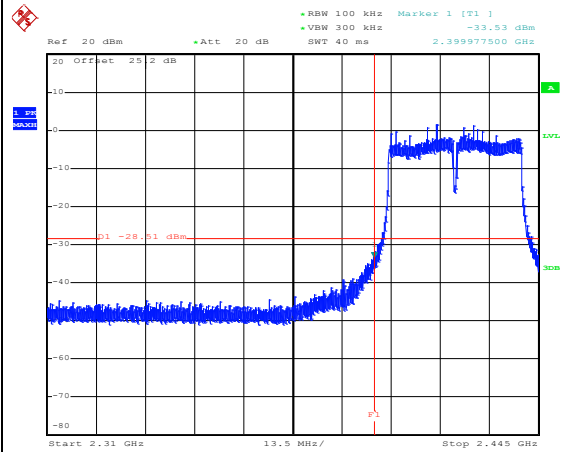
Test Mode :	802.11n HT40	Test Channel :	03
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100kHz PSD reference Level



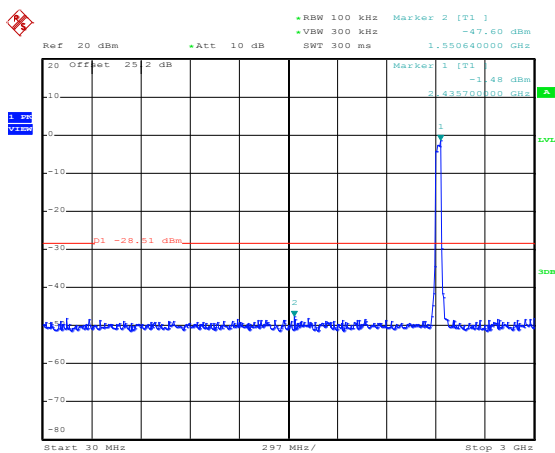
Date: 7.JAN.2020 10:12:46

Low Channel Plot



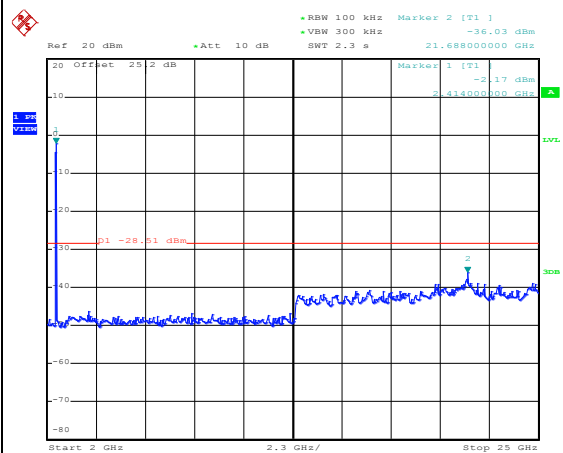
Date: 7.JAN.2020 10:13:10

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 10:13:40

Spurious Emission 2GHz~25GHz

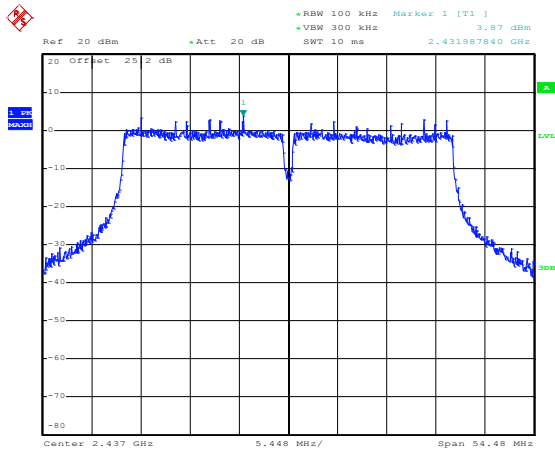


Date: 7.JAN.2020 10:14:00



Test Mode :	802.11n HT40	Test Channel :	06
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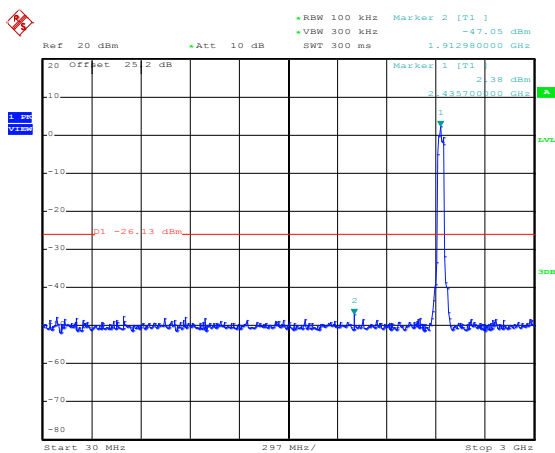
100kHz PSD reference Level



Date: 7.JAN.2020 10:32:48

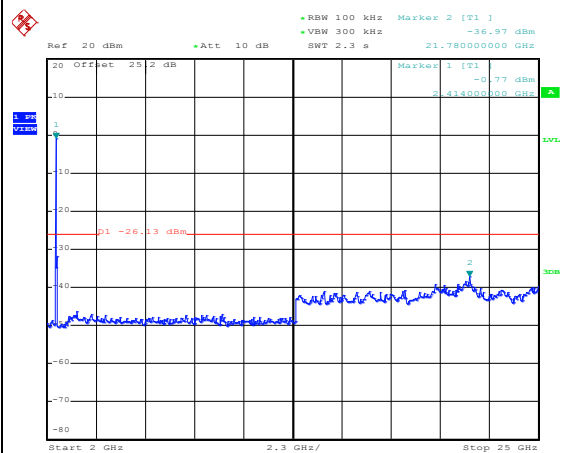
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 10:33:17

Spurious Emission 2GHz~25GHz

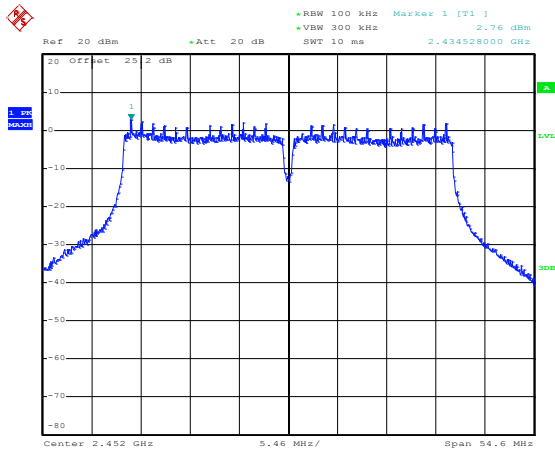


Date: 7.JAN.2020 10:33:34



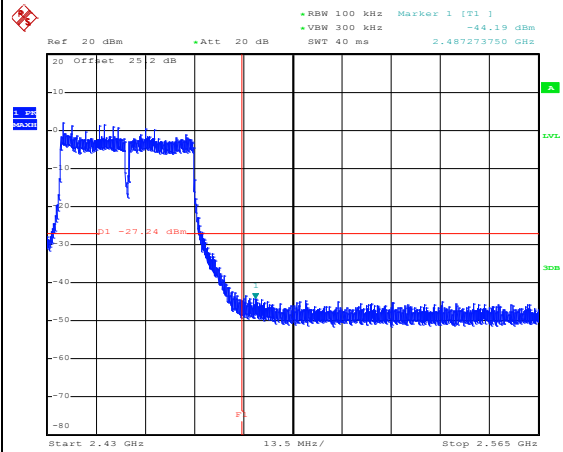
Test Mode :	802.11n HT40	Test Channel :	09
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100kHz PSD reference Level



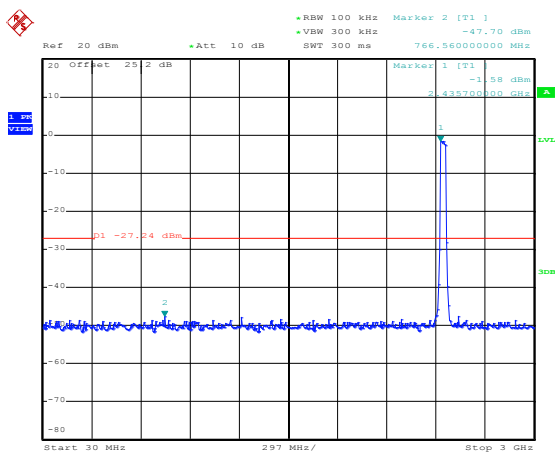
Date: 7.JAN.2020 10:52:03

High Channel Plot



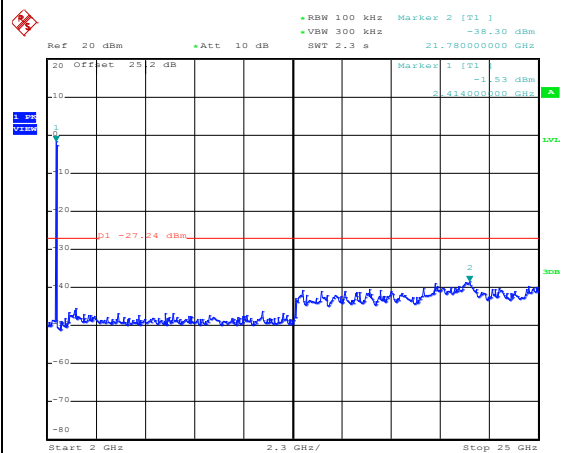
Date: 7.JAN.2020 10:52:55

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 10:53:14

Spurious Emission 2GHz~25GHz

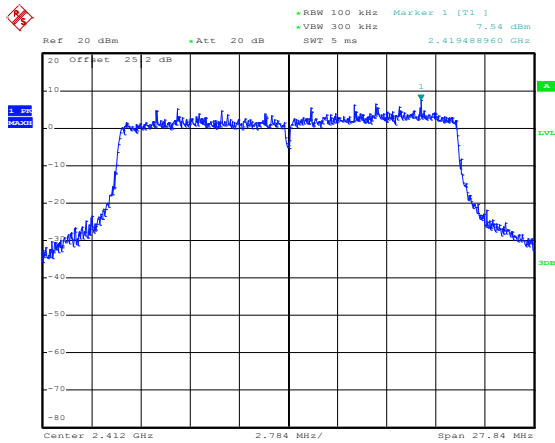


Date: 7.JAN.2020 10:53:30



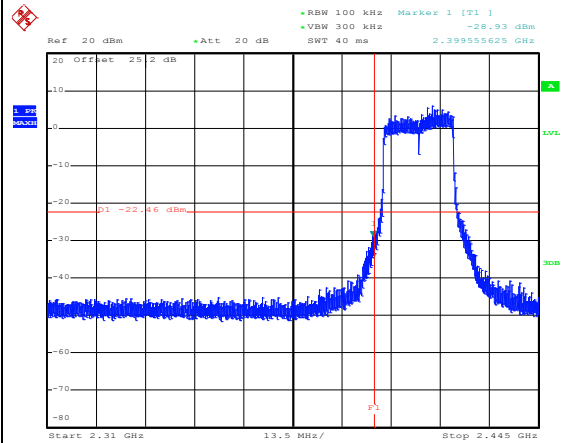
Test Mode :	802.11ax HE20 Full RU	Test Channel :	01
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100kHz PSD reference Level



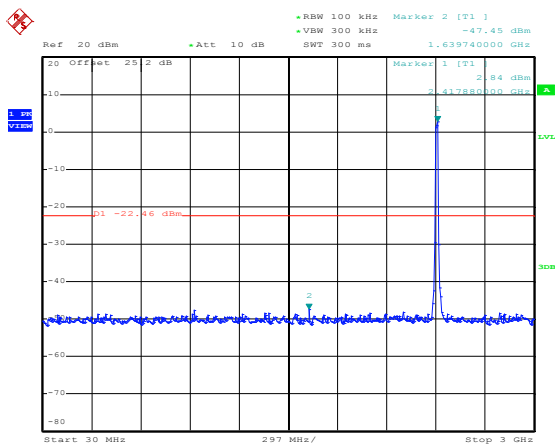
Date: 7.JAN.2020 13:14:33

Low Channel Plot



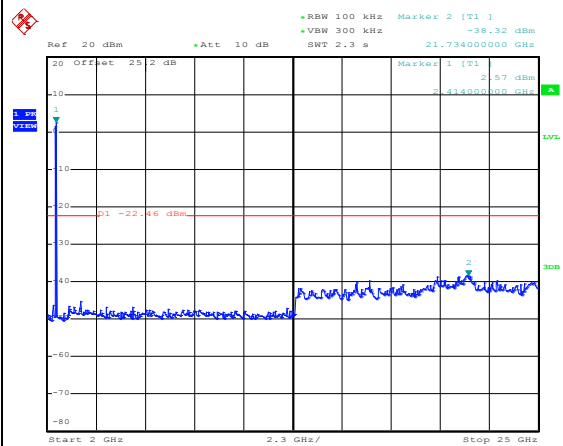
Date: 7.JAN.2020 13:14:53

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 13:15:13

Spurious Emission 2GHz~25GHz

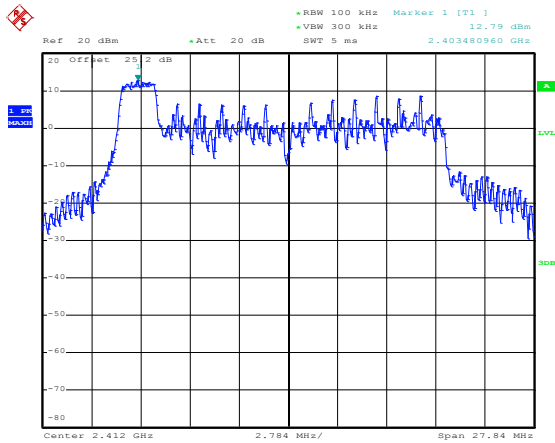


Date: 7.JAN.2020 13:15:31



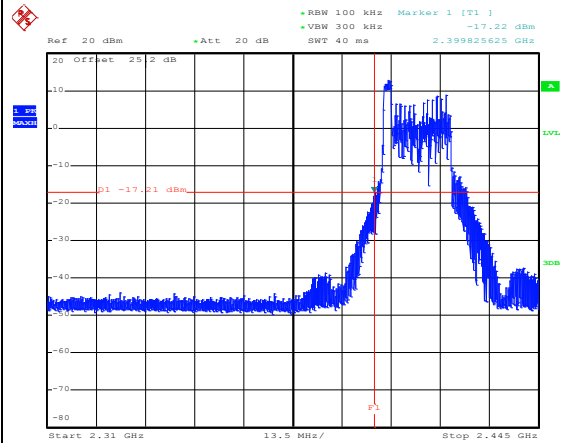
Test Mode :	802.11ax HE20 Partial RU 26/0	Test Channel :	01
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100kHz PSD reference Level



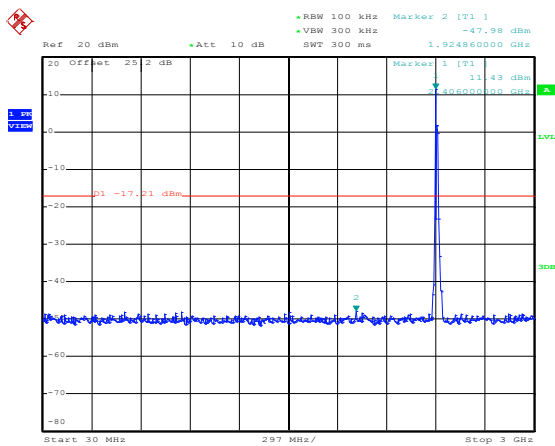
Date: 1.FEB.2020 05:27:46

Low Channel Plot



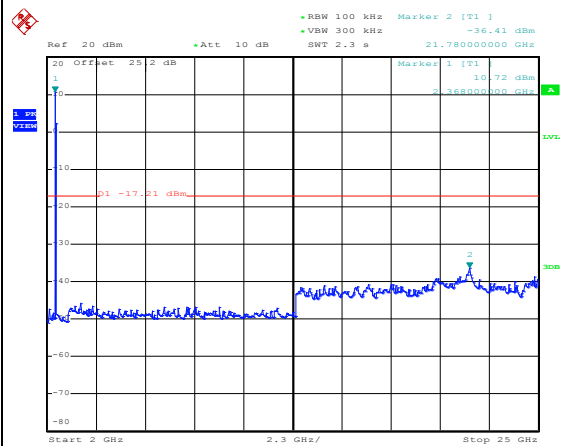
Date: 1.FEB.2020 05:29:34

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 05:30:22

Spurious Emission 2GHz~25GHz

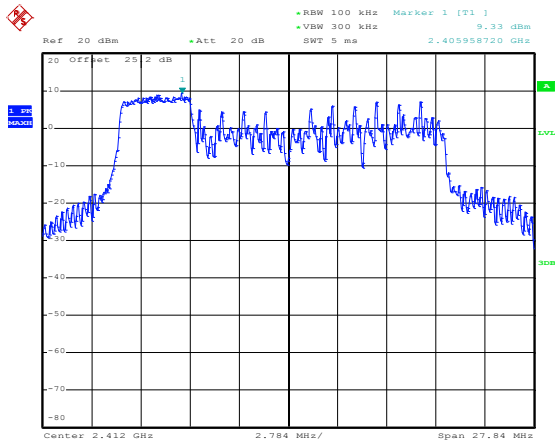


Date: 1.FEB.2020 05:31:01



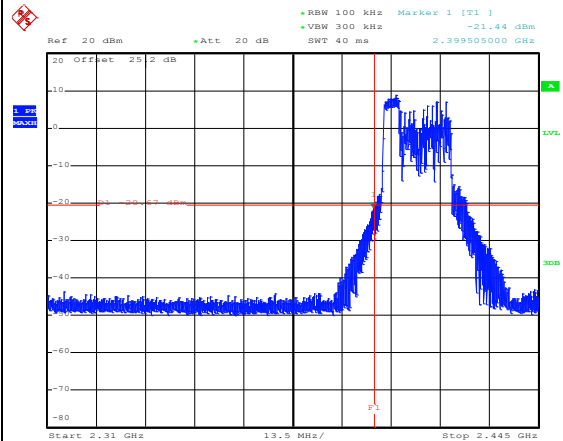
Test Mode :	802.11ax HE20 Partial RU 52/37	Test Channel :	01
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100kHz PSD reference Level



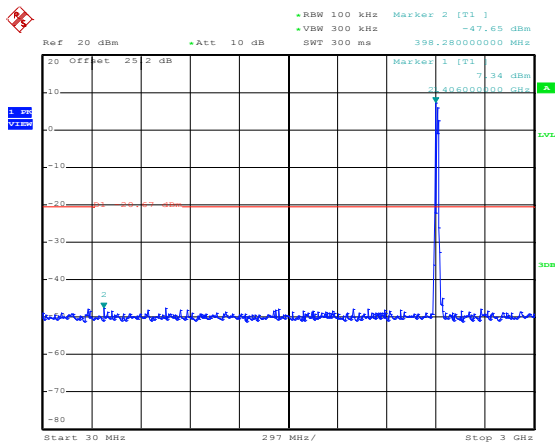
Date: 1.FEB.2020 05:14:38

Low Channel Plot



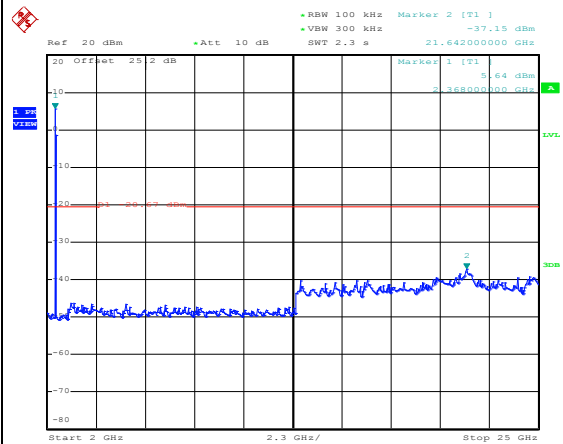
Date: 1.FEB.2020 06:24:58

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 05:20:35

Spurious Emission 2GHz~25GHz

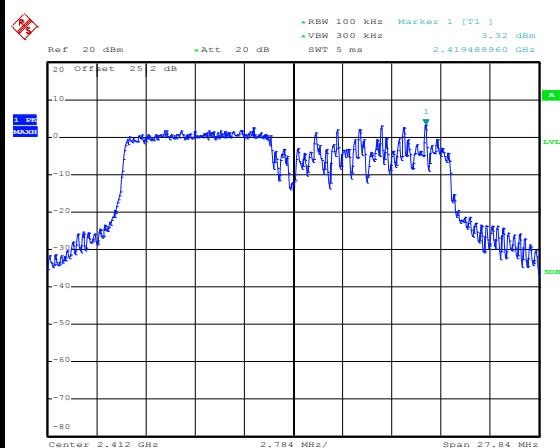


Date: 1.FEB.2020 05:21:08



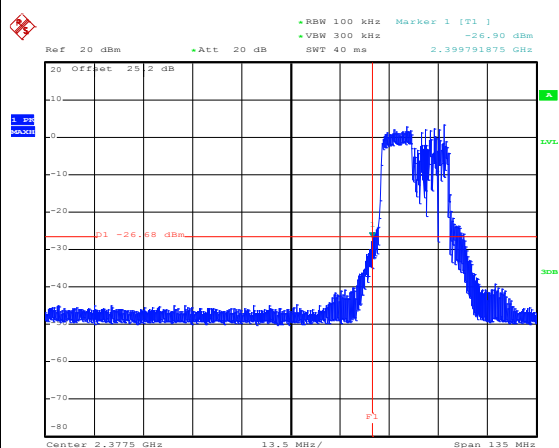
Test Mode :	802.11ax HE20 Partial RU 106/53	Test Channel :	01
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100kHz PSD reference Level



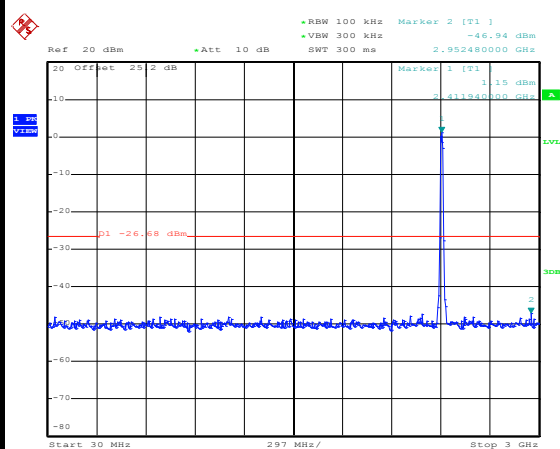
Date: 1.FEB.2020 05:05:26

Low Channel Plot



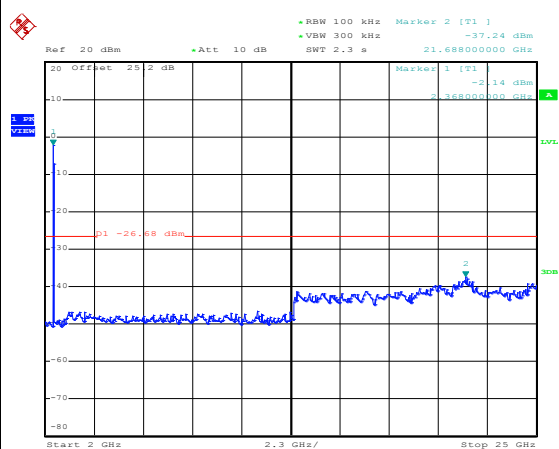
Date: 1.FEB.2020 05:07:53

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 05:08:10

Spurious Emission 2GHz~25GHz

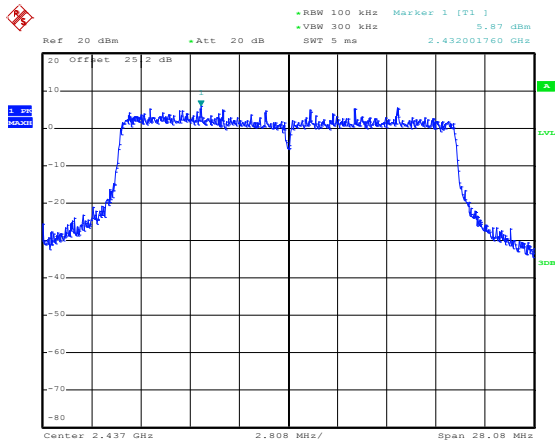


Date: 1.FEB.2020 05:08:40



Test Mode :	802.11ax HE20 Full RU	Test Channel :	06
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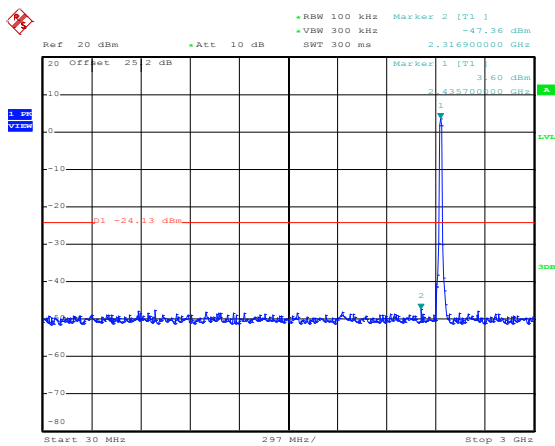
100kHz PSD reference Level



Date: 8.JAN.2020 07:10:04

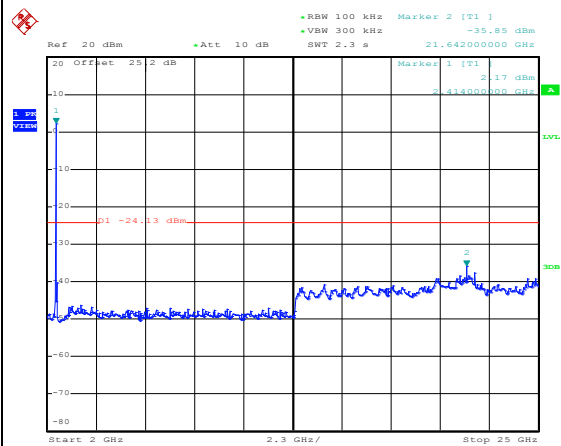
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Date: 8.JAN.2020 07:10:37

Spurious Emission 2GHz~25GHz

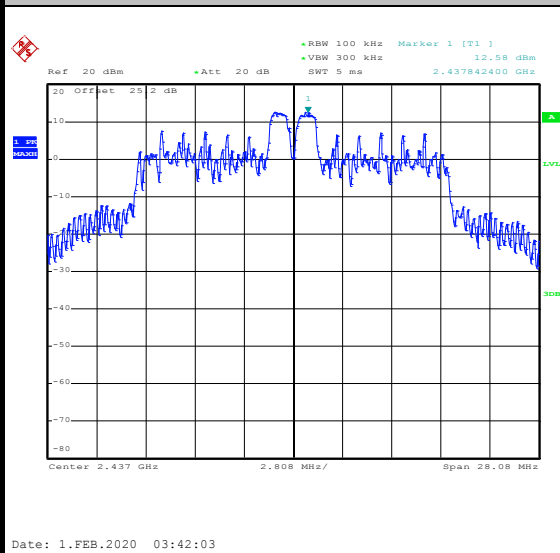


Date: 8.JAN.2020 07:10:54

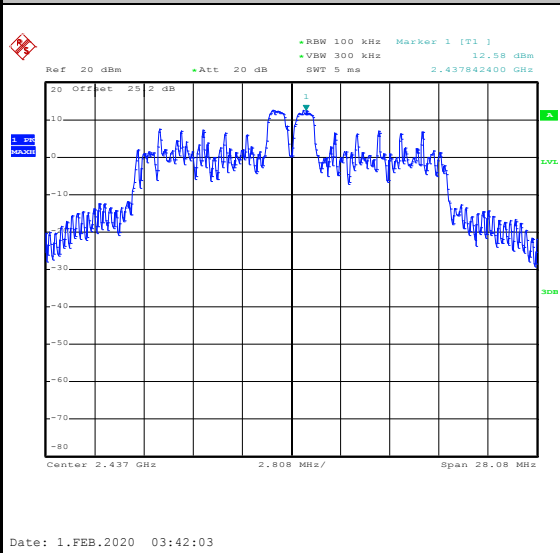


Test Mode :	802.11ax HE20 Partial RU 26/4	Test Channel :	06
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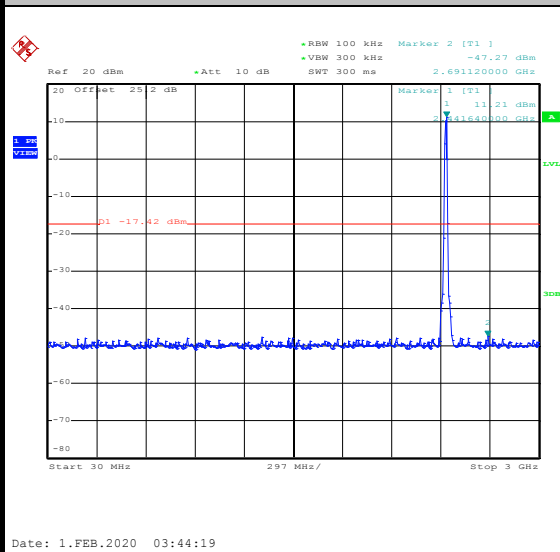
100kHz PSD reference Level



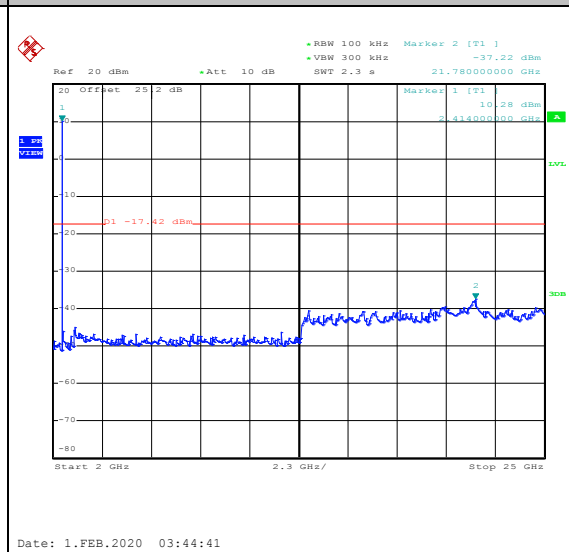
Mid Channel Plot



Spurious Emission 30MHz~3GHz



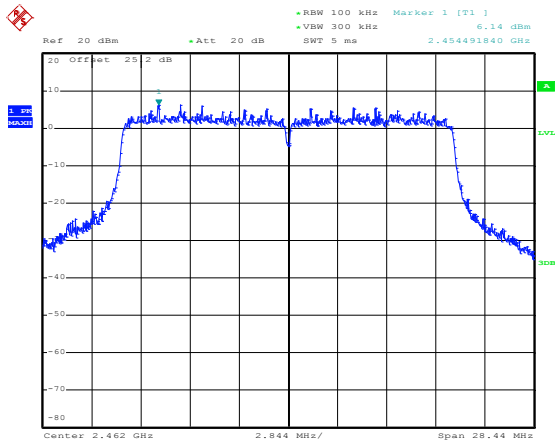
Spurious Emission 2GHz~25GHz





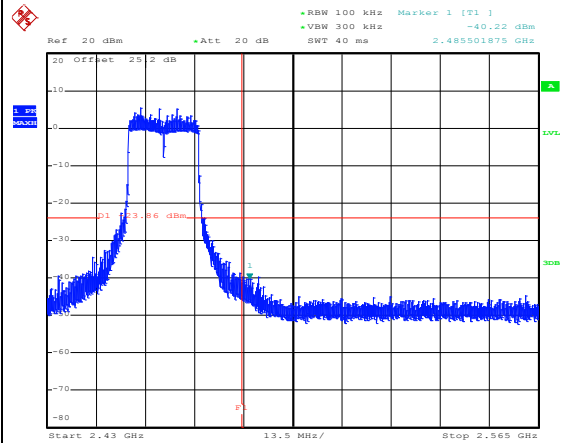
Test Mode :	802.11ax HE20 Full RU	Test Channel :	11
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100kHz PSD reference Level



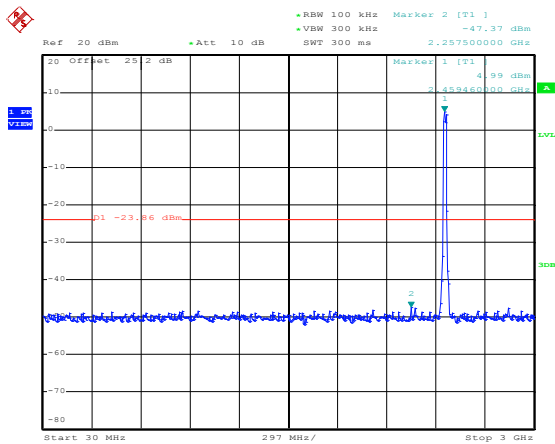
Date: 7.JAN.2020 13:46:33

High Channel Plot



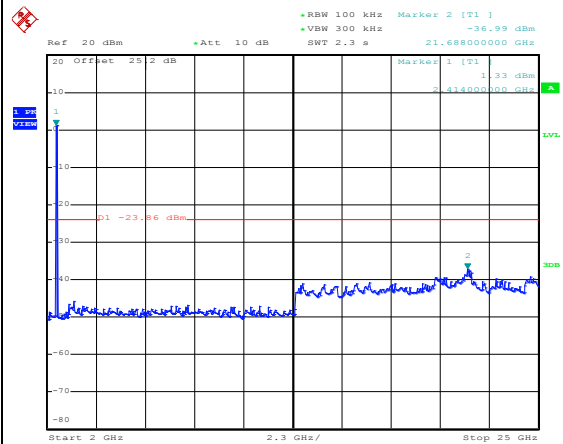
Date: 7.JAN.2020 13:47:17

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 13:47:41

Spurious Emission 2GHz~25GHz

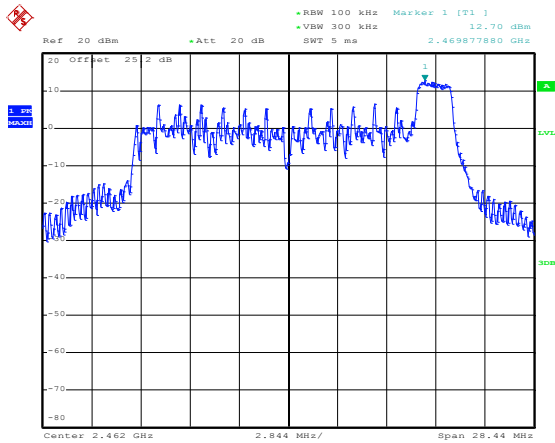


Date: 7.JAN.2020 13:47:58



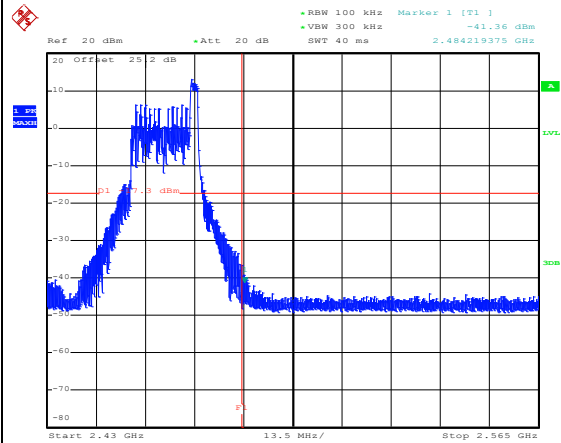
Test Mode :	802.11ax HE20 Partial RU 26/8	Test Channel :	11
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100kHz PSD reference Level



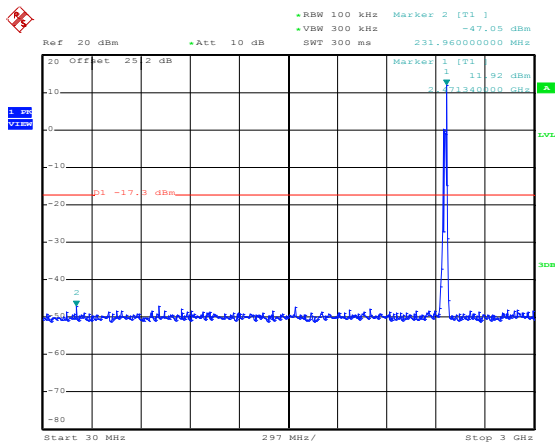
Date: 1.FEB.2020 03:47:59

High Channel Plot



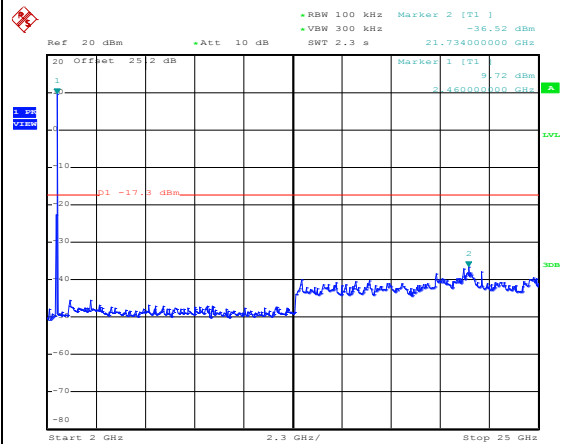
Date: 1.FEB.2020 03:50:24

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 03:52:11

Spurious Emission 2GHz~25GHz



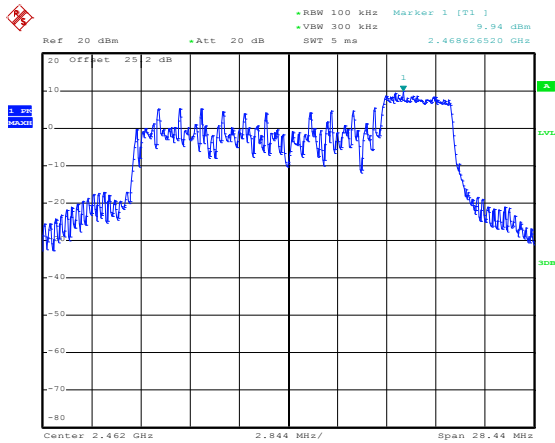
Date: 1.FEB.2020 03:52:50



Test Mode : 802.11ax HE20 Partial RU 52/40

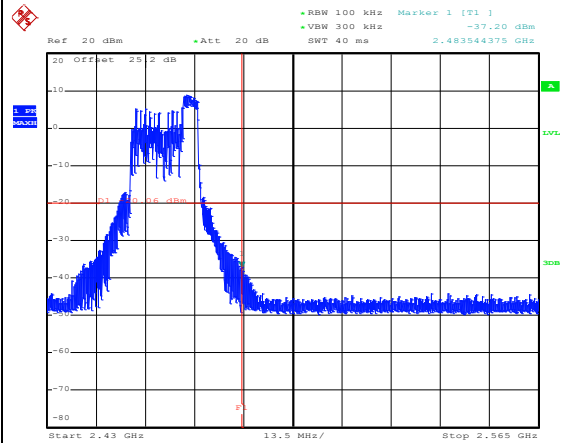
Test Channel : 11

100kHz PSD reference Level



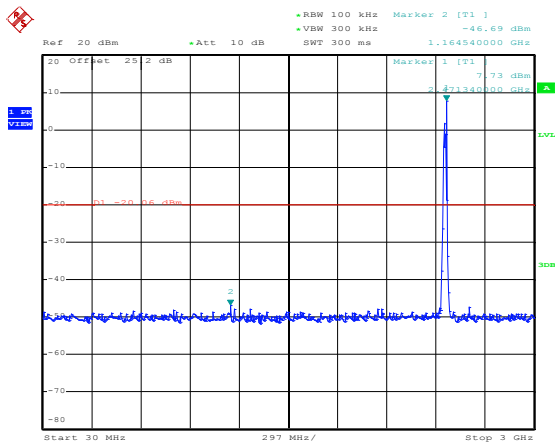
Date: 1.FEB.2020 04:18:52

High Channel Plot



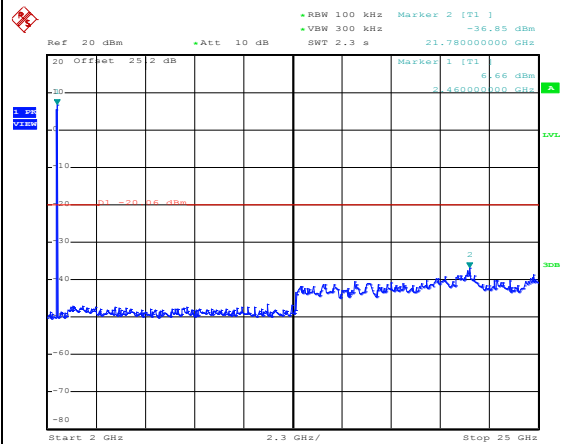
Date: 1.FEB.2020 04:19:42

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 04:20:22

Spurious Emission 2GHz~25GHz

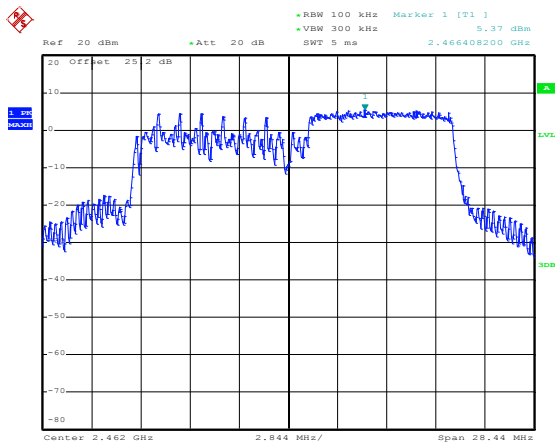


Date: 1.FEB.2020 04:20:56



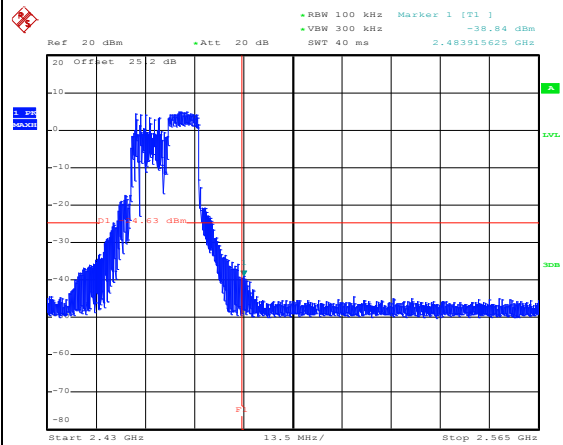
Test Mode :	802.11ax HE20 Partial RU 106/54	Test Channel :	11
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100kHz PSD reference Level



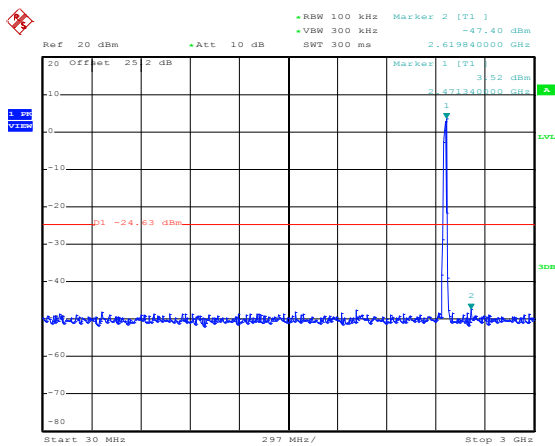
Date: 1.FEB.2020 04:23:42

High Channel Plot



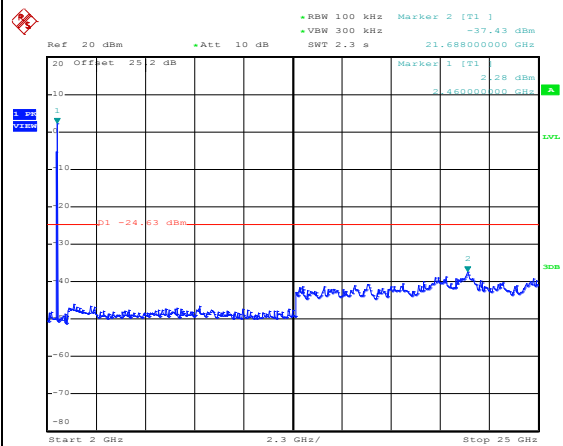
Date: 1.FEB.2020 04:24:23

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 04:25:45

Spurious Emission 2GHz~25GHz

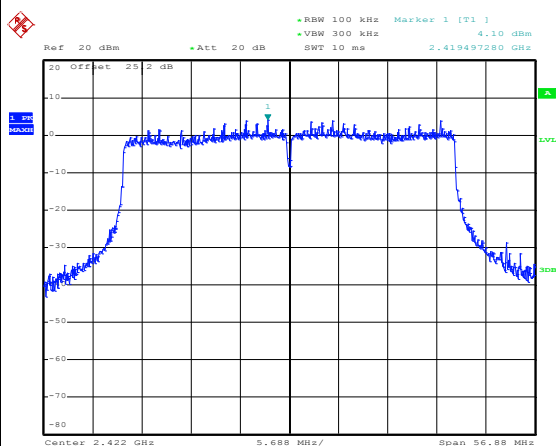


Date: 1.FEB.2020 04:26:05



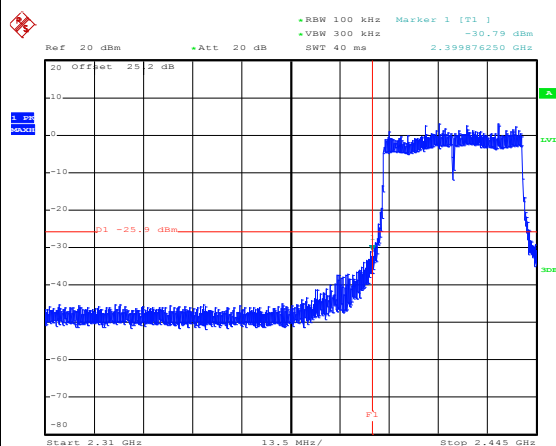
Test Mode :	802.11ax HE40 Full RU	Test Channel :	03
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100kHz PSD reference Level



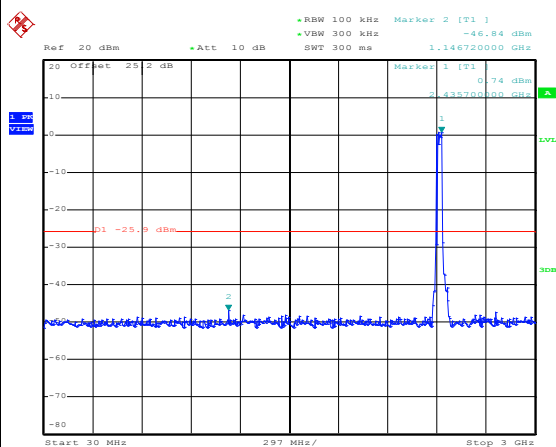
Date: 7.JAN.2020 14:20:05

Low Channel Plot



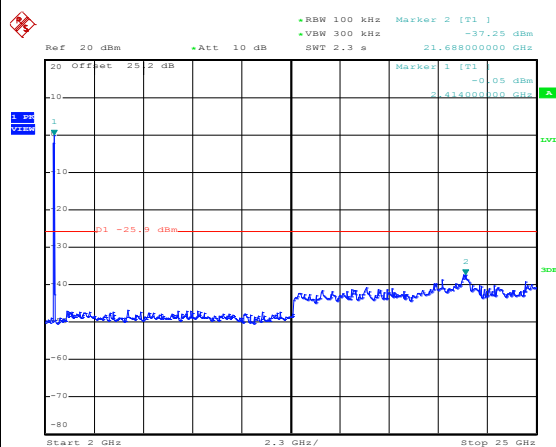
Date: 7.JAN.2020 14:20:35

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 14:21:04

Spurious Emission 2GHz~25GHz

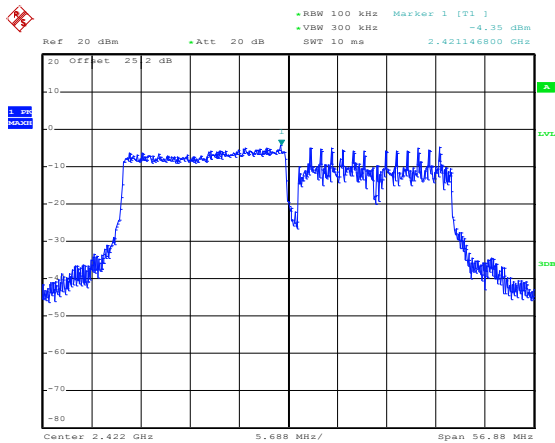


Date: 7.JAN.2020 14:21:19



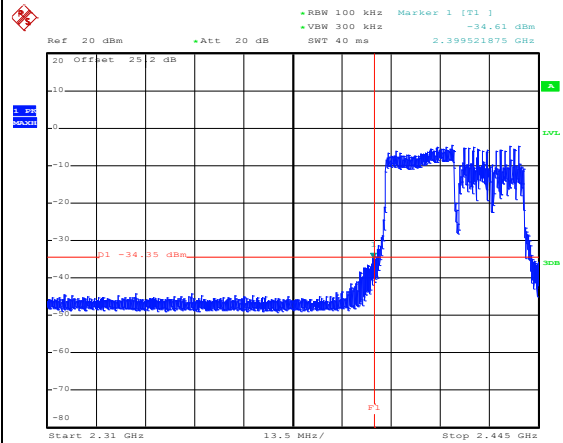
Test Mode :	802.11ax HE40 Partial RU 262/61	Test Channel :	03
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100kHz PSD reference Level



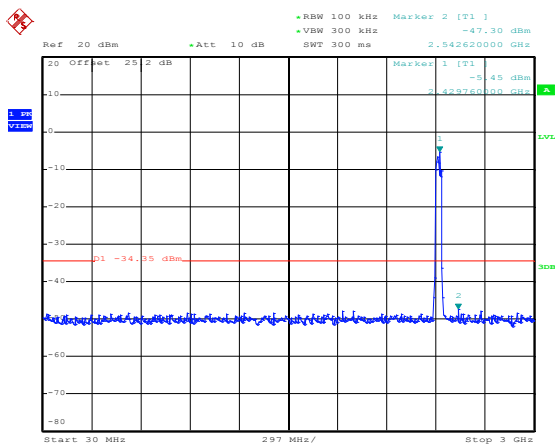
Date: 1.FEB.2020 02:28:40

Low Channel Plot



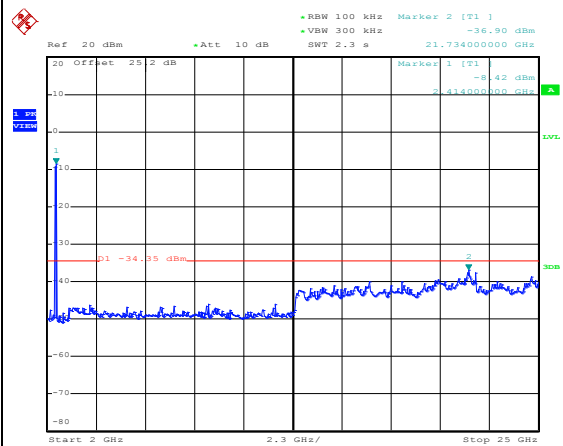
Date: 1.FEB.2020 02:30:10

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 02:31:10

Spurious Emission 2GHz~25GHz

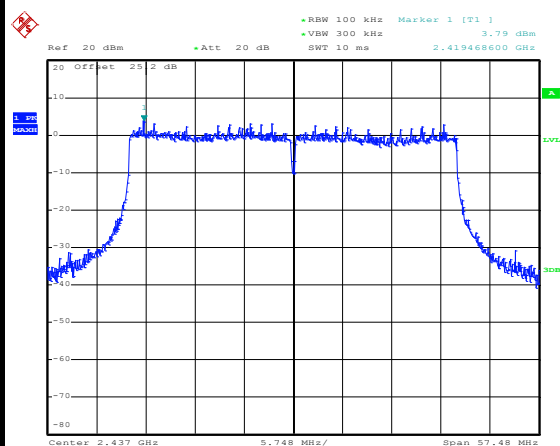


Date: 1.FEB.2020 02:33:46



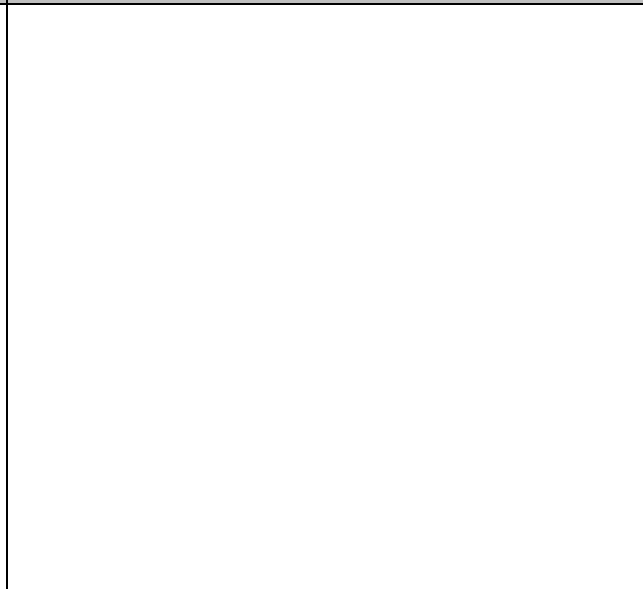
Test Mode :	802.11ax HE40 Full RU	Test Channel :	06
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100kHz PSD reference Level

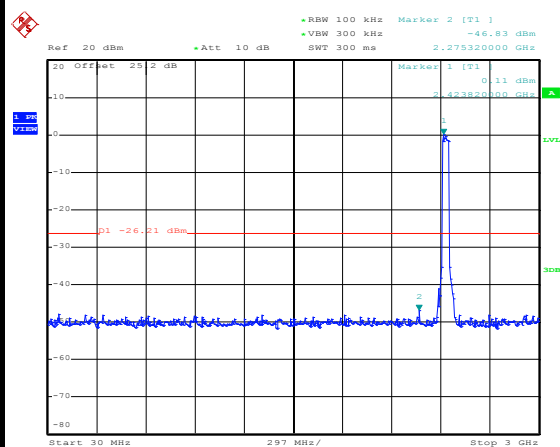


Date: 7.JAN.2020 14:37:33

Mid Channel Plot

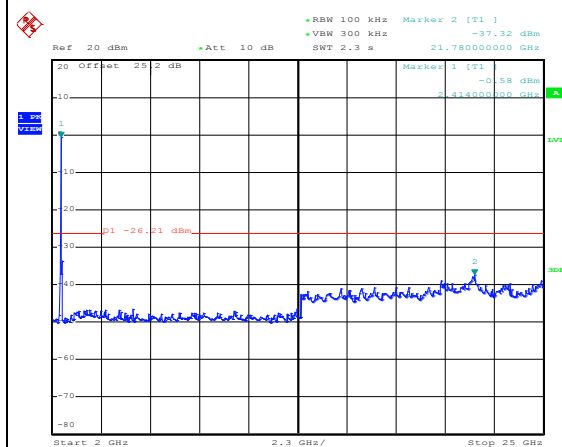


Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 14:38:04

Spurious Emission 2GHz~25GHz

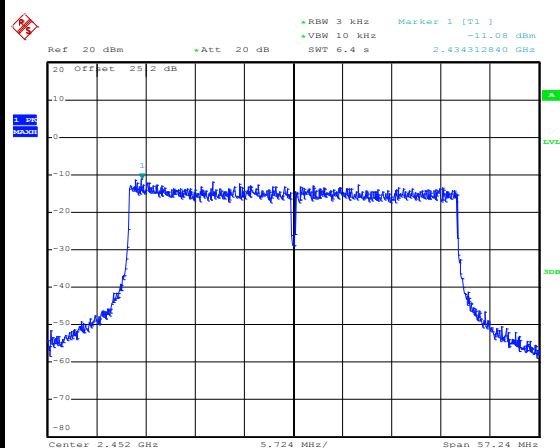


Date: 7.JAN.2020 14:38:21



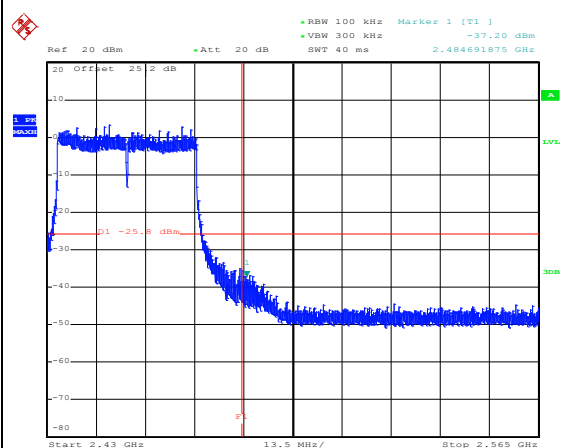
Test Mode :	802.11ax HE40 Full RU	Test Channel :	09
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100kHz PSD reference Level



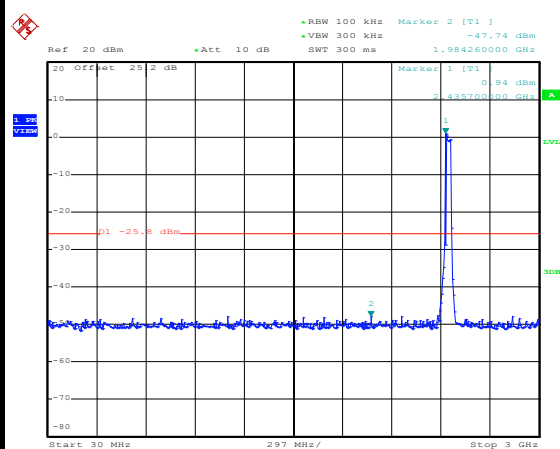
Date: 7.JAN.2020 14:58:16

High Channel Plot



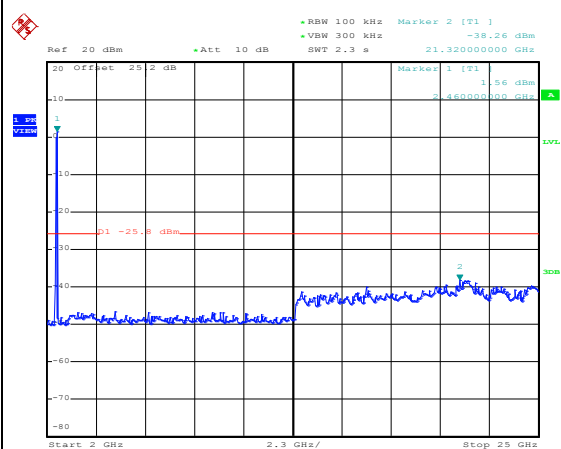
Date: 7.JAN.2020 14:59:20

Spurious Emission 30MHz~3GHz



Date: 7.JAN.2020 15:00:15

Spurious Emission 2GHz~25GHz

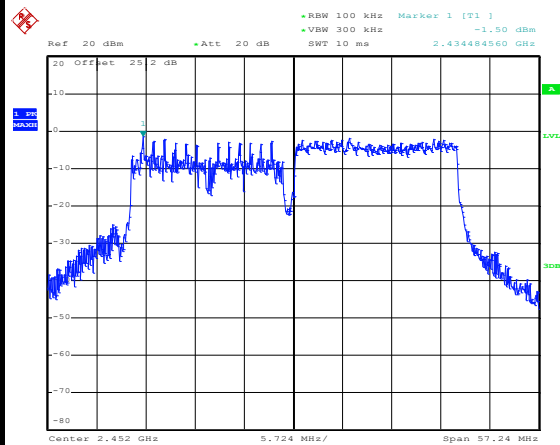


Date: 7.JAN.2020 15:00:30



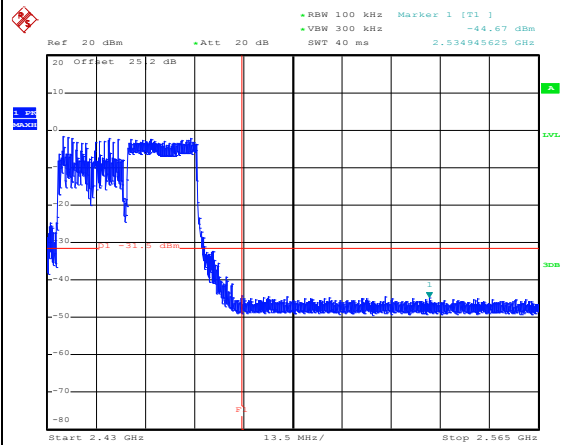
Test Mode :	802.11ax HE40 Partial RU 242/62	Test Channel :	09
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100kHz PSD reference Level



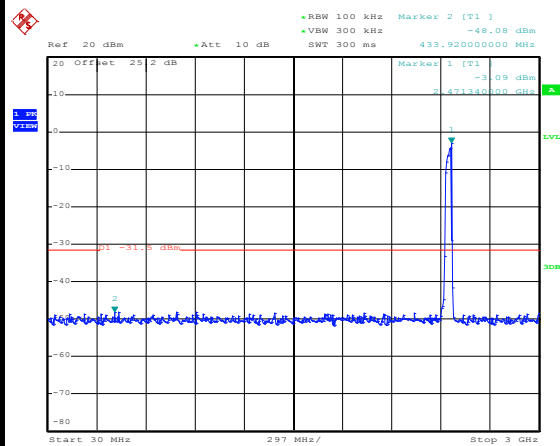
Date: 1.FEB.2020 01:28:40

High Channel Plot



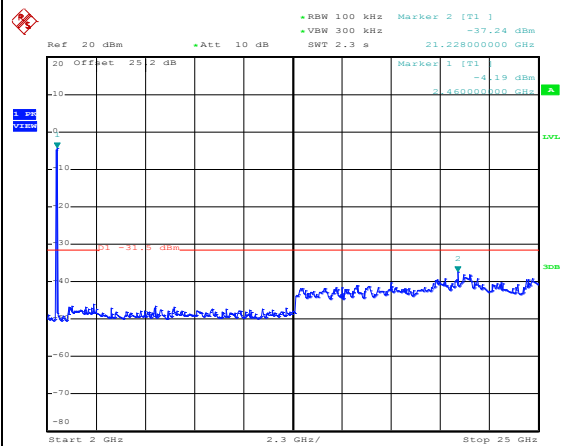
Date: 1.FEB.2020 01:29:51

Spurious Emission 30MHz~3GHz



Date: 1.FEB.2020 03:24:36

Spurious Emission 2GHz~25GHz



Date: 1.FEB.2020 03:25:10

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

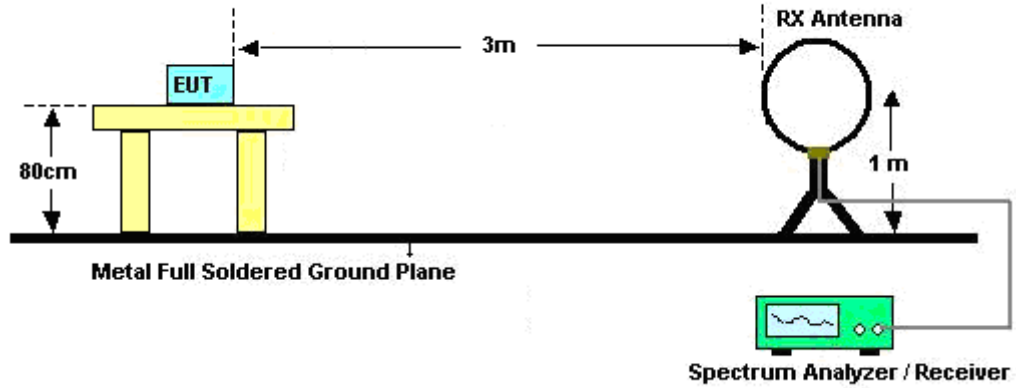
See list of measuring equipment of this test report.

3.5.3 Test Procedures

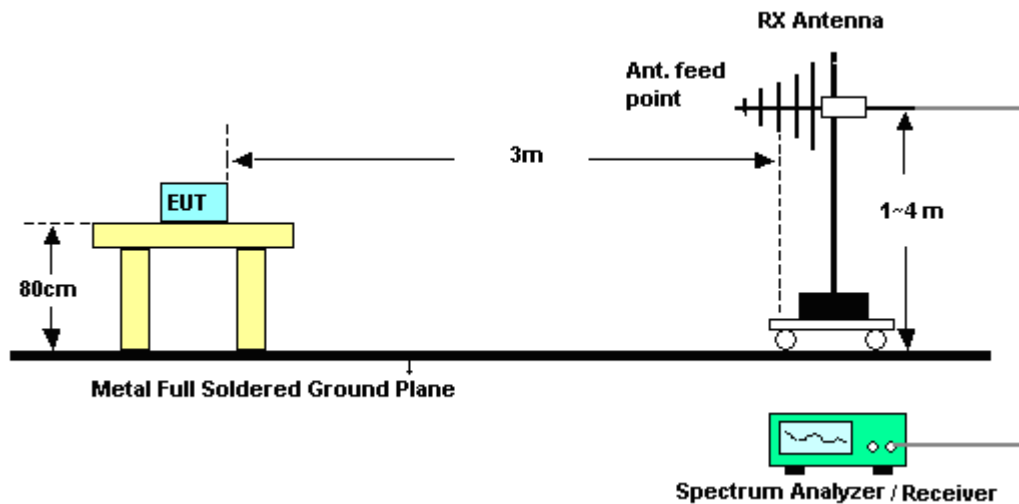
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1 \text{ GHz}$; $\text{VBW} \geq \text{RBW}$; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1 \text{ GHz}$ for peak measurement.
For average measurement:
 - $\text{VBW} = 10 \text{ Hz}$, when duty cycle is no less than 98 percent.
 - $\text{VBW} \geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

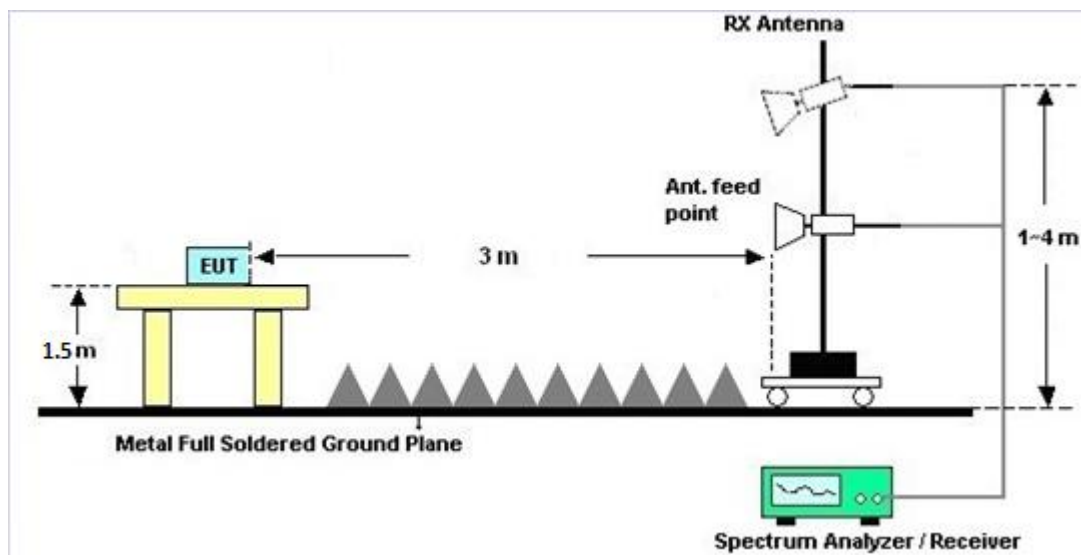
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	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.

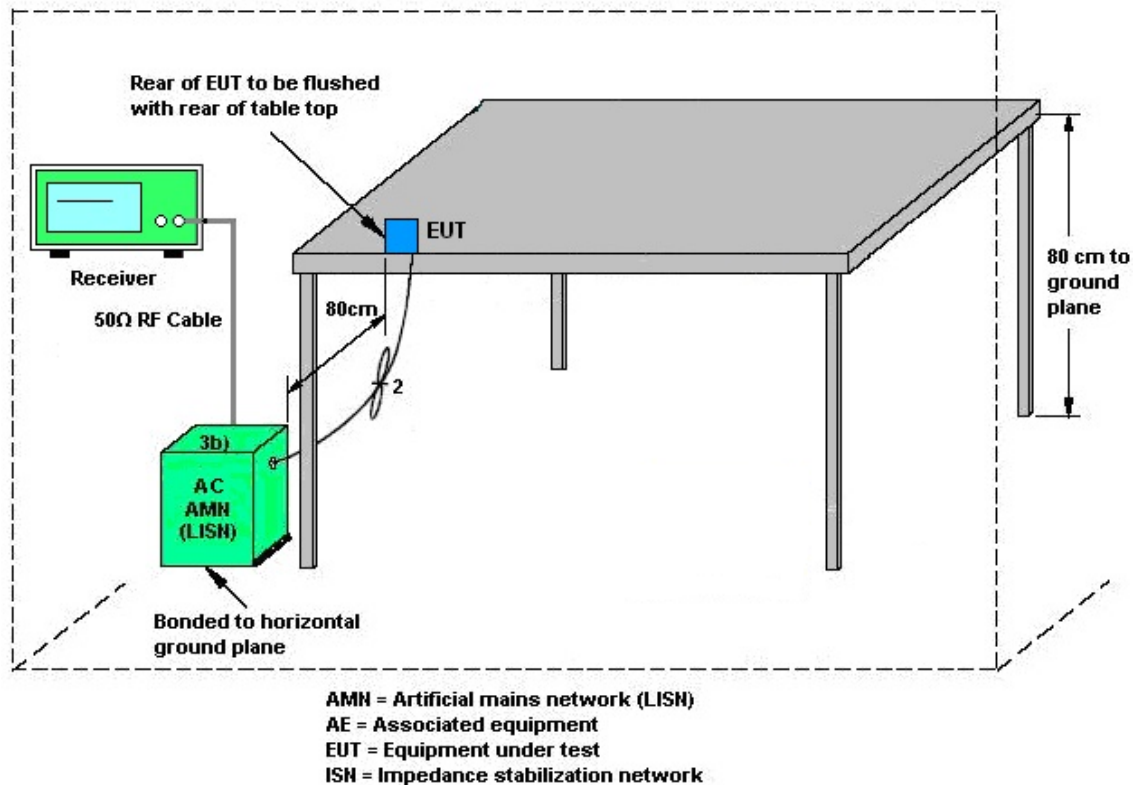
3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT}/N_{SS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

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

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

<CDD Modes>						
			DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	Ant. 1 (dBi)	Ant. 2 (dBi)				
2.4 GHz	2.49	5.92	5.92	7.38	0.00	1.38

Power Limit Reduction = $DG(\text{Power}) - 6\text{dBi}$, (min = 0)

PSD Limit Reduction = $DG(\text{PSD}) - 6\text{dBi}$, (min = 0)



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H2	41410069	N/A	Jun. 17, 2019	Dec. 24, 2019~ Feb. 01, 2020	Jun. 16, 2020	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	13I00030S NO32	10MHz~6GHz	Dec. 17, 2019	Dec. 24, 2019~ Feb. 01, 2020	Dec. 16, 2020	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Aug. 14, 2019	Dec. 24, 2019~ Feb. 01, 2020	Aug. 13, 2020	Conducted (TH05-HY)
Switch Control Manframe	E-IUSTRUMENT	ETF-1405-0	EC190006 7	N/A	Aug. 15, 2019	Dec. 24, 2019~ Feb. 01, 2020	Aug. 14, 2020	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Dec. 26, 2019	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 15, 2019	Dec. 26, 2019	Nov. 14, 2020	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 20, 2019	Dec. 26, 2019	Nov. 19, 2020	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Dec. 26, 2019	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Dec. 31, 2018	Dec. 26, 2019	Dec. 30, 2019	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Dec. 31, 2018	Dec. 26, 2019	Dec. 30, 2019	Conduction (CO05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Dec. 26, 2019	Dec. 27, 2019~ Jan. 12, 2020	Dec. 25, 2020	Radiation (03CH15-HY)
Bilog Antenna	TESEQ	CBL6111D&0 0800N1D01N- 06	41912&05	30MHz to 1GHz	Feb. 12, 2019	Dec. 27, 2019~ Jan. 12, 2020	Feb. 11, 2020	Radiation (03CH15-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-211 4	1-18GHz	Jul. 31, 2019	Dec. 27, 2019~ Jan. 12, 2020	Jul. 30, 2020	Radiation (03CH15-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170 584	18GHz- 40GHz	Dec. 10, 2019	Dec. 27, 2019~ Jan. 12, 2020	Dec. 09, 2020	Radiation (03CH15-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Dec. 03, 2019	Dec. 27, 2019~ Jan. 12, 2020	Dec. 02, 2020	Radiation (03CH15-HY)
Preamplifier	Jet-Power	JPA0118-55-3 03	171000180 0055007	1GHz~18GHz	Apr. 01, 2019	Dec. 27, 2019~ Jan. 12, 2020	Mar. 31, 2020	Radiation (03CH15-HY)
Preamplifier	Keysight	83017A	MY532701 95	1GHz~26.5GHz	Aug. 23, 2019	Dec. 27, 2019~ Jan. 12, 2020	Aug. 22, 2020	Radiation (03CH15-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz ~ 40GHz	Dec. 13, 2019	Dec. 27, 2019~ Jan. 12, 2020	Dec. 12, 2020	Radiation (03CH15-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY554201 70	20MHz~8.4GHz	Mar. 08, 2019	Dec. 27, 2019~ Jan. 12, 2020	Mar. 07, 2020	Radiation (03CH15-HY)
Spectrum Analyzer	Agilent	E4446A	MY501801 36	3Hz~44GHz	Apr. 29, 2019	Dec. 27, 2019~ Jan. 12, 2020	Apr. 28, 2020	Radiation (03CH15-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Dec. 27, 2019~ Jan. 12, 2020	N/A	Radiation (03CH15-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Dec. 27, 2019~ Jan. 12, 2020	N/A	Radiation (03CH15-HY)
Software	Audix	E3 6.2009-8-24(k 5)	RK-00045 1	N/A	N/A	Dec. 27, 2019~ Jan. 12, 2020	N/A	Radiation (03CH15-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY36980/4	30M-18G	Apr. 15, 2019	Dec. 27, 2019~Jan. 12, 2020	Apr. 14, 2020	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9838/4 PE	30M-18G	Apr. 15, 2019	Dec. 27, 2019~Jan. 12, 2020	Apr. 14, 2020	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY802430 /4	30M~18GHz	May 13, 2019	Dec. 27, 2019~Jan. 12, 2020	May 12, 2020	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz-40GHz	Feb. 26, 2019	Dec. 27, 2019~Jan. 12, 2020	Feb. 25, 2020	Radiation (03CH15-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30MHz-40GHz	Feb. 26, 2019	Dec. 27, 2019~Jan. 12, 2020	Feb. 25, 2020	Radiation (03CH15-HY)
Filter	Wainwright	WLK4-1000-1530-8000-40S S	SN4	1.53G Low Pass	Jul. 04, 2019	Dec. 27, 2019~Jan. 12, 2020	Jul. 03, 2020	Radiation (03CH15-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60ST	SN4	3GHz High Pass Filter	Sep. 17, 2019	Dec. 27, 2019~Jan. 12, 2020	Sep. 16, 2020	Radiation (03CH15-HY)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.0
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.4
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Howard Lin / Kai Liao	Temperature:	21~25	°C
Test Date:	2019/12/24 ~ 2020/02/01	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band MIMO										
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant1	Ant2	Ant1	Ant2		
11b	1Mbps	2	1	2412	14.40	14.50	9.56	10.06	0.50	Pass
11b	1Mbps	2	6	2437	14.65	14.60	10.08	10.02	0.50	Pass
11b	1Mbps	2	11	2462	14.50	14.45	10.04	10.04	0.50	Pass
11g	6Mbps	2	1	2412	16.80	16.70	16.30	16.30	0.50	Pass
11g	6Mbps	2	6	2437	16.95	16.80	16.04	16.32	0.50	Pass
11g	6Mbps	2	11	2462	16.85	16.80	16.34	16.36	0.50	Pass
HT20	MCS0	2	1	2412	17.80	17.90	17.08	16.68	0.50	Pass
HT20	MCS0	2	6	2437	17.90	17.95	17.56	17.58	0.50	Pass
HT20	MCS0	2	10	2457	17.95	17.95	17.54	17.56	0.50	Pass
HT20	MCS0	2	11	2462	17.90	17.90	17.56	17.52	0.50	Pass
HT40	MCS0	2	3	2422	36.70	36.90	36.24	36.24	0.50	Pass
HT40	MCS0	2	6	2437	37.20	37.10	35.92	36.32	0.50	Pass
HT40	MCS0	2	9	2452	37.20	37.20	36.32	36.40	0.50	Pass

TEST RESULTS DATA
Average Output Power

2.4GHz Band MIMO																
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Average Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	2	1	2412	18.00	17.90	20.96	30.00		5.92		26.88		36.00		Pass
11b	1Mbps	2	6	2437	17.90	17.80	20.86	30.00		5.92		26.78		36.00		Pass
11b	1Mbps	2	11	2462	17.90	17.70	20.81	30.00		5.92		26.73		36.00		Pass
11g	6Mbps	2	1	2412	16.00	16.10	19.06	30.00		5.92		24.98		36.00		Pass
11g	6Mbps	2	6	2437	17.80	17.70	20.76	30.00		5.92		26.68		36.00		Pass
11g	6Mbps	2	11	2462	16.30	16.30	19.31	30.00		5.92		25.23		36.00		Pass
HT20	MCS0	2	1	2412	17.80	17.70	20.76	30.00		5.92		26.68		36.00		Pass
HT20	MCS0	2	6	2437	17.70	17.60	20.66	30.00		5.92		26.58		36.00		Pass
HT20	MCS0	2	10	2457	17.30	17.40	20.36	30.00		5.92		26.28		36.00		Pass
HT20	MCS0	2	11	2462	13.40	13.50	16.46	30.00		5.92		22.38		36.00		Pass
HT40	MCS0	2	3	2422	15.50	15.50	18.51	30.00		5.92		24.43		36.00		Pass
HT40	MCS0	2	6	2437	17.60	17.50	20.56	30.00		5.92		26.48		36.00		Pass
HT40	MCS0	2	9	2452	16.00	16.20	19.11	30.00		5.92		25.03		36.00		Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band MIMO												
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant1	Ant2	Worse + 3.01	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	2	1	2412	-5.82	-5.99	-2.81	7.38		6.62		Pass
11b	1Mbps	2	6	2437	-6.45	-6.69	-3.44	7.38		6.62		Pass
11b	1Mbps	2	11	2462	-5.72	-7.39	-2.71	7.38		6.62		Pass
11g	6Mbps	2	1	2412	-11.72	-10.89	-7.88	7.38		6.62		Pass
11g	6Mbps	2	6	2437	-9.46	-9.15	-6.14	7.38		6.62		Pass
11g	6Mbps	2	11	2462	-10.08	-9.92	-6.91	7.38		6.62		Pass
HT20	MCS0	2	1	2412	-6.74	-7.94	-3.73	7.38		6.62		Pass
HT20	MCS0	2	6	2437	-7.67	-8.10	-4.66	7.38		6.62		Pass
HT20	MCS0	2	10	2457	-7.22	-7.37	-4.21	7.38		6.62		Pass
HT20	MCS0	2	11	2462	-11.07	-12.75	-8.06	7.38		6.62		Pass
HT40	MCS0	2	3	2422	-13.04	-12.96	-9.95	7.38		6.62		Pass
HT40	MCS0	2	6	2437	-10.60	-11.25	-7.59	7.38		6.62		Pass
HT40	MCS0	2	9	2452	-12.35	-12.58	-9.34	7.38		6.62		Pass

Note: Measured power density (dBm) has offset with cable loss.

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band MIMO											
Mod.	Data Rate	Ntx	CH.	Freq. (MHz)	RU Config	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
						Ant1	Ant2	Ant1	Ant2		
HE20	MCS0	2	1	2412	Full	18.98	19.02	18.64	18.56	0.50	Pass
HE20	MCS0	2	1	2412	26/0	18.70	18.75	17.04	17.04	0.50	Pass
HE20	MCS0	2	1	2412	52/37	18.60	18.40	17.08	17.06	0.50	Pass
HE20	MCS0	2	1	2412	106/53	18.50	18.35	17.68	17.68	0.50	Pass
HE20	MCS0	2	6	2437	Full	19.04	19.10	18.98	18.72	0.50	Pass
HE20	MCS0	2	6	2437	26/4	17.55	17.60	14.96	14.99	0.50	Pass
HE20	MCS0	2	11	2462	Full	19.04	19.04	19.00	18.96	0.50	Pass
HE20	MCS0	2	11	2462	26/8	18.45	18.60	15.80	17.04	0.50	Pass
HE20	MCS0	2	11	2462	52/40	18.50	18.35	17.04	17.04	0.50	Pass
HE20	MCS0	2	11	2462	106/54	18.55	18.35	17.12	17.34	0.50	Pass
HE40	MCS0	2	3	2422	Full	38.30	38.30	37.88	37.92	0.50	Pass
HE40	MCS0	2	3	2422	242/61	37.80	38.00	36.60	37.84	0.50	Pass
HE40	MCS0	2	6	2437	Full	38.50	38.50	37.76	38.32	0.50	Pass
HE40	MCS0	2	9	2452	Full	38.60	38.50	38.08	38.16	0.50	Pass
HE40	MCS0	2	9	2452	242/62	38.70	38.10	37.88	37.92	0.50	Pass

TEST RESULTS DATA
Average Output Power

2.4GHz Band MIMO																	
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	RU Config	Average Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
						Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
HE20	MCS0	2	1	2412	Full	17.90	17.70	20.81	30.00		5.92		26.73		36.00		Pass
HE20	MCS0	2	1	2412	26/0	17.90	17.60	20.76	30.00		5.92		26.68		36.00		Pass
HE20	MCS0	2	1	2412	52/37	16.30	16.40	19.36	30.00		5.92		25.28		36.00		Pass
HE20	MCS0	2	1	2412	106/53	12.80	12.80	15.81	30.00		5.92		21.73		36.00		Pass
HE20	MCS0	2	6	2437	Full	17.80	17.80	20.81	30.00		5.92		26.73		36.00		Pass
HE20	MCS0	2	6	2437	26/4	17.70	17.80	20.76	30.00		5.92		26.68		36.00		Pass
HE20	MCS0	2	11	2462	Full	16.40	16.30	19.36	30.00		5.92		25.28		36.00		Pass
HE20	MCS0	2	11	2462	26/8	17.50	17.20	20.36	30.00		5.92		26.28		36.00		Pass
HE20	MCS0	2	11	2462	52/40	16.80	16.40	19.61	30.00		5.92		25.53		36.00		Pass
HE20	MCS0	2	11	2462	106/54	16.00	16.00	19.01	30.00		5.92		24.93		36.00		Pass
HE40	MCS0	2	3	2422	Full	17.80	17.70	20.76	30.00		5.92		26.68		36.00		Pass
HE40	MCS0	2	3	2422	242/61	9.00	8.80	11.91	30.00		5.92		17.83		36.00		Pass
HE40	MCS0	2	6	2437	Full	17.50	17.60	20.56	30.00		5.92		26.48		36.00		Pass
HE40	MCS0	2	9	2452	Full	17.60	17.70	20.66	30.00		5.92		26.58		36.00		Pass
HE40	MCS0	2	9	2452	242/62	11.70	12.00	14.86	30.00		5.92		20.78		36.00		Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band MIMO													
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	RU Config	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
						Ant1	Ant2	Worse + 3.01	Ant1	Ant2	Ant1	Ant2	
HE20	MCS0	2	1	2412	Full	-8.54	-8.10	-5.09	7.38		6.62		Pass
HE20	MCS0	2	1	2412	26/0	0.12	1.77	4.78	7.38		6.62		Pass
HE20	MCS0	2	1	2412	52/37	-2.59	-2.97	0.42	7.38		6.62		Pass
HE20	MCS0	2	1	2412	106/53	-11.15	-10.80	-7.79	7.38		6.62		Pass
HE20	MCS0	2	6	2437	Full	-8.35	-8.58	-5.34	7.38		6.62		Pass
HE20	MCS0	2	6	2437	26/4	0.85	0.38	3.86	7.38		6.62		Pass
HE20	MCS0	2	11	2462	Full	-8.64	-7.79	-4.78	7.38		6.62		Pass
HE20	MCS0	2	11	2462	26/8	0.39	0.34	3.40	7.38		6.62		Pass
HE20	MCS0	2	11	2462	52/40	-2.87	-3.30	0.14	7.38		6.62		Pass
HE20	MCS0	2	11	2462	106/54	-7.46	-8.42	-4.45	7.38		6.62		Pass
HE40	MCS0	2	3	2422	Full	-10.43	-11.61	-7.42	7.38		6.62		Pass
HE40	MCS0	2	3	2422	242/61	-18.84	-18.94	-15.83	7.38		6.62		Pass
HE40	MCS0	2	6	2437	Full	-11.36	-10.98	-7.97	7.38		6.62		Pass
HE40	MCS0	2	9	2452	Full	-11.00	-11.08	-7.99	7.38		6.62		Pass
HE40	MCS0	2	9	2452	242/62	-15.40	-16.21	-12.39	7.38		6.62		Pass

Note: Measured power density (dBm) has offset with cable loss.



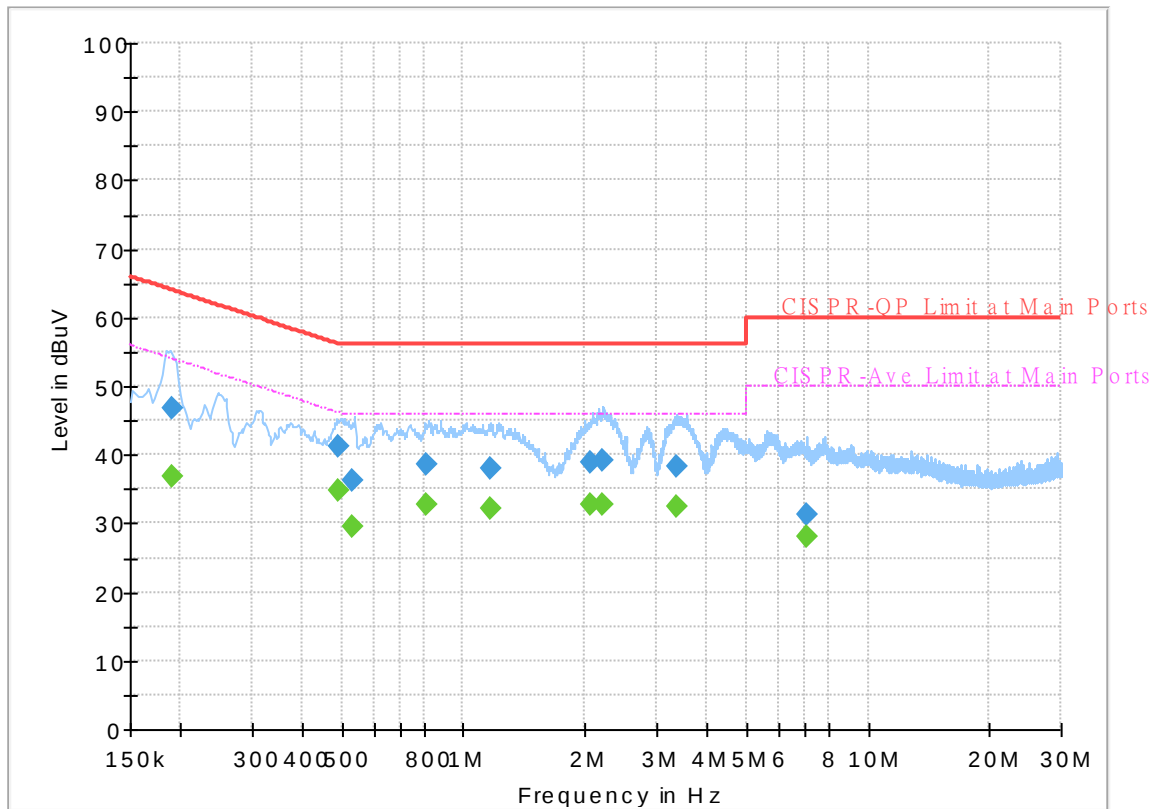
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Howard Huang	Temperature :	22~25℃
		Relative Humidity :	41~45%

EUT Information

Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



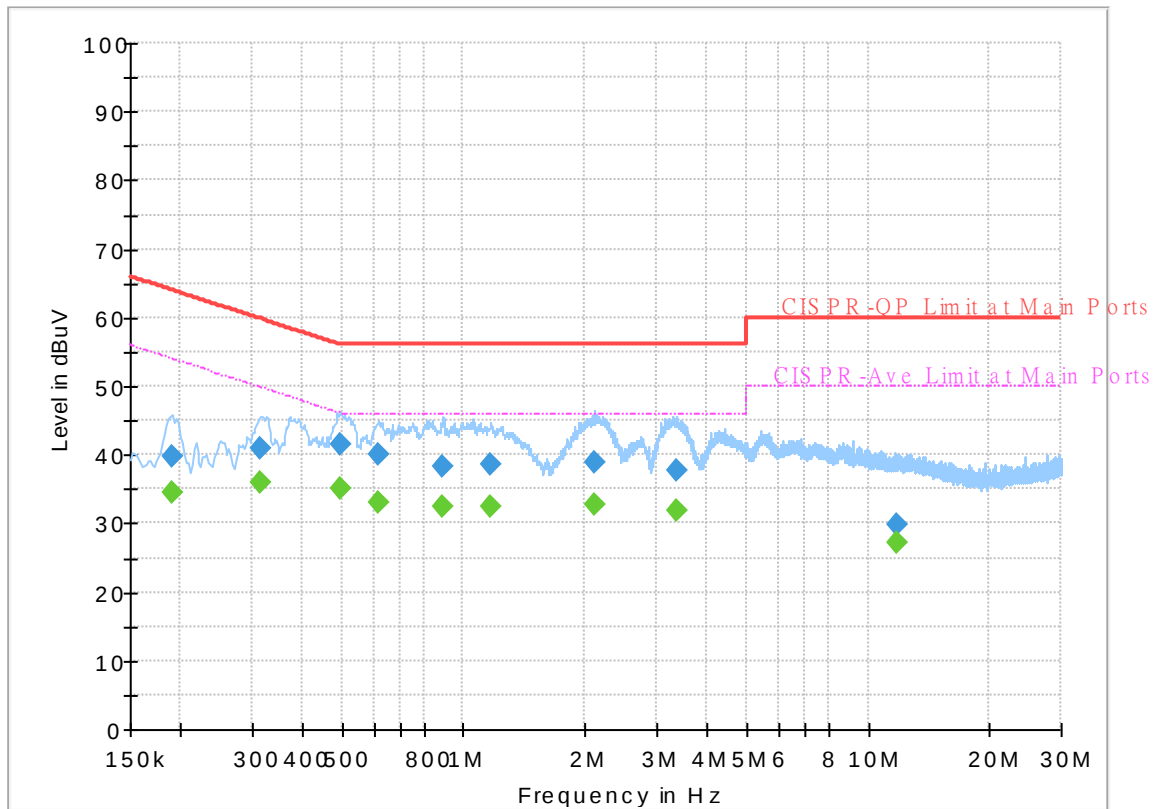
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.191220	---	36.83	53.98	17.15	L1	OFF	19.5
0.191220	46.82	---	63.98	17.16	L1	OFF	19.5
0.489750	---	34.82	46.17	11.35	L1	OFF	19.5
0.489750	41.24	---	56.17	14.93	L1	OFF	19.5
0.532500	---	29.67	46.00	16.33	L1	OFF	19.5
0.532500	36.14	---	56.00	19.86	L1	OFF	19.5
0.813750	---	32.62	46.00	13.38	L1	OFF	19.5
0.813750	38.64	---	56.00	17.36	L1	OFF	19.5
1.171500	---	32.24	46.00	13.76	L1	OFF	19.6
1.171500	38.09	---	56.00	17.91	L1	OFF	19.6
2.069250	---	32.87	46.00	13.13	L1	OFF	19.6
2.069250	38.77	---	56.00	17.23	L1	OFF	19.6
2.217750	---	32.74	46.00	13.26	L1	OFF	19.6
2.217750	39.11	---	56.00	16.89	L1	OFF	19.6
3.376500	---	32.33	46.00	13.67	L1	OFF	19.6
3.376500	38.36	---	56.00	17.64	L1	OFF	19.6
7.028250	---	27.98	50.00	22.02	L1	OFF	19.8
7.028250	31.29	---	60.00	28.71	L1	OFF	19.8

EUT Information

Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.191040	---	34.49	53.99	19.50	N	OFF	19.5
0.191040	39.88	---	63.99	24.11	N	OFF	19.5
0.314250	---	35.94	49.86	13.92	N	OFF	19.5
0.314250	40.99	---	59.86	18.87	N	OFF	19.5
0.497850	---	35.08	46.04	10.96	N	OFF	19.6
0.497850	41.60	---	56.04	14.44	N	OFF	19.6
0.615930	---	32.98	46.00	13.02	N	OFF	19.6
0.615930	40.15	---	56.00	15.85	N	OFF	19.6
0.885750	---	32.44	46.00	13.56	N	OFF	19.6
0.885750	38.19	---	56.00	17.81	N	OFF	19.6
1.167270	---	32.37	46.00	13.63	N	OFF	19.6
1.167270	38.50	---	56.00	17.50	N	OFF	19.6
2.100930	---	32.68	46.00	13.32	N	OFF	19.6
2.100930	39.02	---	56.00	16.98	N	OFF	19.6
3.372000	---	31.73	46.00	14.27	N	OFF	19.7
3.372000	37.80	---	56.00	18.20	N	OFF	19.7
11.796540	---	27.06	50.00	22.94	N	OFF	20.0
11.796540	29.69	---	60.00	30.31	N	OFF	20.0



Appendix C. Radiated Spurious Emission

Test Engineer :	Leo Li, Mancy Chou and Bigshow Wang	Temperature :	24.2~25.1°C
		Relative Humidity :	56~64%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2345.91	54.38	-19.62	74	41.44	28.01	16.1	31.17	100	145	P	H
		2386.44	45.43	-8.57	54	32.65	27.78	16.15	31.15	100	145	A	H
	*	2412	108.45	-	-	95.72	27.68	16.18	31.13	100	145	P	H
	*	2412	105.48	-	-	92.75	27.68	16.18	31.13	100	145	A	H
													H
													H
		2387.7	55.53	-18.47	74	42.76	27.77	16.15	31.15	341	151	P	V
		2385.6	46.73	-7.27	54	33.94	27.79	16.15	31.15	341	151	A	V
	*	2412	115.16	-	-	102.43	27.68	16.18	31.13	341	151	P	V
	*	2412	112.06	-	-	99.33	27.68	16.18	31.13	341	151	A	V
													V
													V
802.11b CH 06 2437MHz		2369.5	54.64	-19.36	74	41.79	27.88	16.13	31.16	100	192	P	H
		2357.6	45.24	-8.76	54	32.34	27.95	16.11	31.16	100	192	A	H
	*	2437	108.15	-	-	95.43	27.63	16.21	31.12	100	192	P	H
	*	2437	105.08	-	-	92.36	27.63	16.21	31.12	100	192	A	H
		2495.38	54.28	-19.72	74	41.59	27.51	16.27	31.09	100	192	P	H
		2486.56	45.2	-8.8	54	32.51	27.53	16.26	31.1	100	192	A	H
		2330.86	54.13	-19.87	74	41.18	28.04	16.08	31.17	320	149	P	V
		2387.14	45.6	-8.4	54	32.82	27.78	16.15	31.15	320	149	A	V
	*	2437	113.88	-	-	101.16	27.63	16.21	31.12	320	149	P	V
	*	2437	110.81	-	-	98.09	27.63	16.21	31.12	320	149	A	V
		2484.18	54.48	-19.52	74	41.8	27.53	16.25	31.1	320	149	P	V
		2486.35	45.47	-8.53	54	32.78	27.53	16.26	31.1	320	149	A	V



802.11b CH 11 2462MHz	*	2462	107.67	-	-	94.97	27.58	16.23	31.11	100	189	P	H
	*	2462	104.68	-	-	91.98	27.58	16.23	31.11	100	189	A	H
		2491.52	54.43	-19.57	74	41.74	27.52	16.26	31.09	100	189	P	H
		2484.6	45.42	-8.58	54	32.74	27.53	16.25	31.1	100	189	A	H
													H
													H
	*	2462	113.91	-	-	101.21	27.58	16.23	31.11	265	148	P	V
	*	2462	111.01	-	-	98.31	27.58	16.23	31.11	265	148	A	V
		2484.88	56.75	-17.25	74	44.07	27.53	16.25	31.1	265	148	P	V
		2484.64	47.41	-6.59	54	34.73	27.53	16.25	31.1	265	148	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11b (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		4824	39.19	-34.81	74	57.47	31.25	9.63	59.16	100	0	P	H
													H
													H
													H
		4824	40.05	-33.95	74	58.33	31.25	9.63	59.16	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4874	36.26	-37.74	74	54.54	31.25	9.64	59.17	100	0	P	H
		7311	42.39	-31.61	74	53.36	36.52	11.69	59.18	100	0	P	H
													H
													H
		4874	35.88	-38.12	74	54.16	31.25	9.64	59.17	100	0	P	V
		7311	42.36	-31.64	74	53.33	36.52	11.69	59.18	100	0	P	V
													V
													V
802.11b CH 11 2462MHz		4924	36.17	-37.83	74	54.36	31.34	9.65	59.18	100	0	P	H
		7386	42.15	-31.85	74	53.1	36.46	11.74	59.15	100	0	P	H
													H
													H
		4924	36.12	-37.88	74	54.31	31.34	9.65	59.18	100	0	P	V
		7386	41.78	-32.22	74	52.73	36.46	11.74	59.15	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11g (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11g CH 01 2412MHz		2388.96	63.51	-10.49	74	50.73	27.77	16.16	31.15	270	176	P	H
		2389.17	47.66	-6.34	54	34.89	27.76	16.16	31.15	270	176	A	H
	*	2412	110.05	-	-	97.32	27.68	16.18	31.13	270	176	P	H
	*	2412	102.43	-	-	89.7	27.68	16.18	31.13	270	176	A	H
													H
													H
		2388.225	70.39	-3.61	74	57.62	27.77	16.15	31.15	184	144	P	V
		2388.015	51.78	-2.22	54	39.01	27.77	16.15	31.15	184	144	A	V
	*	2412	114.98	-	-	102.25	27.68	16.18	31.13	184	144	P	V
	*	2412	107.42	-	-	94.69	27.68	16.18	31.13	184	144	A	V
													V
													V
802.11g CH 06 2437MHz		2324.42	54.99	-19.01	74	42.05	28.05	16.07	31.18	329	173	P	H
		2327.22	44.49	-9.51	54	31.54	28.05	16.08	31.18	329	173	A	H
	*	2437	111.92	-	-	99.2	27.63	16.21	31.12	329	173	P	H
	*	2437	104.3	-	-	91.58	27.63	16.21	31.12	329	173	A	H
		2489.99	54.19	-19.81	74	41.51	27.52	16.26	31.1	329	173	P	H
		2484.6	44.37	-9.63	54	31.69	27.53	16.25	31.1	329	173	A	H
		2345.28	55.27	-18.73	74	42.33	28.01	16.1	31.17	243	162	P	V
		2344.44	44.75	-9.25	54	31.81	28.01	16.1	31.17	243	162	A	V
	*	2437	115.34	-	-	102.62	27.63	16.21	31.12	243	162	P	V
	*	2437	107.71	-	-	94.99	27.63	16.21	31.12	243	162	A	V
		2486.35	55.53	-18.47	74	42.84	27.53	16.26	31.1	243	162	P	V
		2484.32	44.59	-9.41	54	31.91	27.53	16.25	31.1	243	162	A	V



802.11g CH 11 2462MHz	*	2462	109.76	-	-	97.06	27.58	16.23	31.11	199	175	P	H
	*	2462	102.84	-	-	90.14	27.58	16.23	31.11	199	175	A	H
		2483.8	69	-5	74	56.32	27.53	16.25	31.1	199	175	P	H
		2483.72	51.7	-2.3	54	39.02	27.53	16.25	31.1	199	175	A	H
													H
													H
	*	2462	114.48	-	-	101.78	27.58	16.23	31.11	197	145	P	V
	*	2462	106.61	-	-	93.91	27.58	16.23	31.11	197	145	A	V
		2483.64	70.23	-3.77	74	57.55	27.53	16.25	31.1	197	145	P	V
		2483.52	52.91	-1.09	54	40.23	27.53	16.25	31.1	197	145	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**2.4GHz 2400~2483.5MHz
WIFI 802.11g (Harmonic @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11g CH 01 2412MHz		4824	35.15	-38.85	74	53.43	31.25	9.63	59.16	100	0	P	H
													H
													H
													H
		4824	36.66	-37.34	74	54.94	31.25	9.63	59.16	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	36.19	-37.81	74	54.47	31.25	9.64	59.17	100	0	P	H
		7311	41.35	-32.65	74	52.32	36.52	11.69	59.18	100	0	P	H
													H
													H
		4874	36.41	-37.59	74	54.69	31.25	9.64	59.17	100	0	P	V
		7311	42.01	-31.99	74	52.98	36.52	11.69	59.18	100	0	P	V
													V
													V
802.11g CH 11 2462MHz		4924	37.16	-36.84	74	55.35	31.34	9.65	59.18	100	0	P	H
		7386	41.07	-32.93	74	52.02	36.46	11.74	59.15	100	0	P	H
													H
													H
		4924	36.32	-37.68	74	54.51	31.34	9.65	59.18	100	0	P	V
		7386	41.59	-32.41	74	52.54	36.46	11.74	59.15	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 01 2412MHz		2389.695	70.28	-3.72	74	57.51	27.76	16.16	31.15	100	139	P	H
		2389.8	51.01	-2.99	54	38.24	27.76	16.16	31.15	100	139	A	H
	*	2412	111.3	-	-	98.57	27.68	16.18	31.13	100	139	P	H
	*	2412	103.41	-	-	90.68	27.68	16.18	31.13	100	139	A	H
													H
													H
		2388.855	64.97	-9.03	74	52.19	27.77	16.16	31.15	331	81	P	V
		2389.485	46.56	-7.44	54	33.79	27.76	16.16	31.15	331	81	A	V
	*	2412	106.96	-	-	94.23	27.68	16.18	31.13	331	81	P	V
	*	2412	99.09	-	-	86.36	27.68	16.18	31.13	331	81	A	V
													V
													V
802.11n HT20 CH 06 2437MHz		2316.58	54.23	-19.77	74	41.28	28.07	16.06	31.18	100	195	P	H
		2340.8	44.02	-9.98	54	31.08	28.02	16.09	31.17	100	195	A	H
	*	2437	111.01	-	-	98.29	27.63	16.21	31.12	100	195	P	H
	*	2437	103.13	-	-	90.41	27.63	16.21	31.12	100	195	A	H
		2499.86	53.47	-20.53	74	40.79	27.5	16.27	31.09	100	195	P	H
		2484.39	43.75	-10.25	54	31.07	27.53	16.25	31.1	100	195	A	H
		2386.02	55.12	-18.88	74	42.34	27.78	16.15	31.15	347	150	P	V
		2388.26	44.26	-9.74	54	31.49	27.77	16.15	31.15	347	150	A	V
	*	2437	116.27	-	-	103.55	27.63	16.21	31.12	347	150	P	V
	*	2437	108.55	-	-	95.83	27.63	16.21	31.12	347	150	A	V
		2483.62	54.24	-19.76	74	41.56	27.53	16.25	31.1	347	150	P	V
		2483.69	44.03	-9.97	54	31.35	27.53	16.25	31.1	347	150	A	V



802.11n HT20 CH 11 2462MHz	*	2462	113.09	-	-	100.39	27.58	16.23	31.11	268	158	P	V
	*	2462	105.17	-	-	92.47	27.58	16.23	31.11	268	158	A	V
		2484.04	71.62	-2.38	74	58.94	27.53	16.25	31.1	268	158	P	V
		2483.72	49.16	-4.84	54	36.48	27.53	16.25	31.1	268	158	A	V
													H
													H
	*	2462	107.82	-	-	95.12	27.58	16.23	31.11	227	145	P	H
	*	2462	99.91	-	-	87.21	27.58	16.23	31.11	227	145	A	H
		2484	66.72	-7.28	74	54.04	27.53	16.25	31.1	227	145	P	H
		2484	46.12	-7.88	54	33.44	27.53	16.25	31.1	227	145	A	H
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 01 2412MHz		4824	37.55	-36.45	74	55.83	31.25	9.63	59.16	100	0	P	H
													H
													H
													H
		4824	36.25	-37.75	74	54.53	31.25	9.63	59.16	100	0	P	V
													V
													V
													V
802.11n HT20 CH 06 2437MHz		4874	35.81	-38.19	74	54.09	31.25	9.64	59.17	100	0	P	H
		7311	42.56	-31.44	74	53.53	36.52	11.69	59.18	100	0	P	H
													H
													H
		4874	37.01	-36.99	74	55.29	31.25	9.64	59.17	100	0	P	V
		7311	42.21	-31.79	74	53.18	36.52	11.69	59.18	100	0	P	V
													V
													V
802.11n HT20 CH 11 2462MHz		4924	36.16	-37.84	74	54.35	31.34	9.65	59.18	100	0	P	H
		7386	41.38	-32.62	74	52.33	36.46	11.74	59.15	100	0	P	H
													H
													H
		4924	35.87	-38.13	74	54.06	31.34	9.65	59.18	100	0	P	V
		7386	40.47	-33.53	74	51.42	36.46	11.74	59.15	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 03 2422MHz		2385.6	59.04	-14.96	74	46.25	27.79	16.15	31.15	100	138	P	H
		2389.66	47.98	-6.02	54	35.21	27.76	16.16	31.15	100	138	A	H
	*	2422	106.13	-	-	93.41	27.66	16.19	31.13	100	138	P	H
	*	2422	98.15	-	-	85.43	27.66	16.19	31.13	100	138	A	H
		2485.44	53.75	-20.25	74	41.06	27.53	16.26	31.1	100	138	P	H
		2497.2	43.93	-10.07	54	31.24	27.51	16.27	31.09	100	138	A	H
		2383.92	62.31	-11.69	74	49.51	27.8	16.15	31.15	278	148	P	V
		2389.94	51.64	-2.36	54	38.87	27.76	16.16	31.15	278	148	A	V
	*	2422	111.28	-	-	98.56	27.66	16.19	31.13	278	148	P	V
	*	2422	103.43	-	-	90.71	27.66	16.19	31.13	278	148	A	V
		2484.11	54.19	-19.81	74	41.51	27.53	16.25	31.1	278	148	P	V
		2484.88	44.06	-9.94	54	31.38	27.53	16.25	31.1	278	148	A	V
802.11n HT40 CH 06 2437MHz		2384.62	65.6	-8.4	74	52.81	27.79	16.15	31.15	100	128	P	H
		2389.94	48.77	-5.23	54	36	27.76	16.16	31.15	100	128	A	H
	*	2437	108.54	-	-	95.82	27.63	16.21	31.12	100	128	P	H
	*	2437	101.06	-	-	88.34	27.63	16.21	31.12	100	128	A	H
		2484.81	60.75	-13.25	74	48.07	27.53	16.25	31.1	100	128	P	H
		2483.69	48.76	-5.24	54	36.08	27.53	16.25	31.1	100	128	A	H
		2384.06	69.76	-4.24	74	56.96	27.8	16.15	31.15	278	149	P	V
		2389.94	52.73	-1.27	54	39.96	27.76	16.16	31.15	278	149	A	V
	*	2437	113.98	-	-	101.26	27.63	16.21	31.12	278	149	P	V
	*	2437	106.07	-	-	93.35	27.63	16.21	31.12	278	149	A	V
		2483.62	66.51	-7.49	74	53.83	27.53	16.25	31.1	278	149	P	V
		2483.5	52.02	-1.98	54	39.34	27.53	16.25	31.1	278	149	A	V



802.11n HT40 CH 09 2452MHz		2386.44	55	-19	74	42.22	27.78	16.15	31.15	100	138	P	H
		2389.24	44.28	-9.72	54	31.51	27.76	16.16	31.15	100	138	A	H
	*	2452	106.56	-	-	93.85	27.6	16.22	31.11	100	138	P	H
	*	2452	99.29	-	-	86.58	27.6	16.22	31.11	100	138	A	H
		2483.83	64.37	-9.63	74	51.69	27.53	16.25	31.1	100	138	P	H
		2483.62	49.97	-4.03	54	37.29	27.53	16.25	31.1	100	138	A	H
		2388.12	60.91	-13.09	74	48.14	27.77	16.15	31.15	350	145	P	V
		2388.26	45	-9	54	32.23	27.77	16.15	31.15	350	145	A	V
	*	2452	112.02	-	-	99.31	27.6	16.22	31.11	350	145	P	V
	*	2452	104.19	-	-	91.48	27.6	16.22	31.11	350	145	A	V
		2484.11	66.9	-7.1	74	54.22	27.53	16.25	31.1	350	145	P	V
		2483.5	52.6	-1.4	54	39.92	27.53	16.25	31.1	350	145	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 03 2422MHz		4844	35.63	-38.37	74	53.88	31.29	9.63	59.17	100	0	P	H
		7266	42.45	-31.55	74	53.48	36.5	11.66	59.19	100	0	P	H
													H
													H
		4844	35.56	-38.44	74	53.81	31.29	9.63	59.17	100	0	P	V
		7266	41.77	-32.23	74	52.8	36.5	11.66	59.19	100	0	P	V
													V
													V
802.11n HT40 CH 06 2437MHz		4874	36.28	-37.72	74	54.56	31.25	9.64	59.17	100	0	P	H
		7311	40.91	-33.09	74	51.88	36.52	11.69	59.18	100	0	P	H
													H
													H
		4874	35.7	-38.3	74	53.98	31.25	9.64	59.17	100	0	P	V
		7311	42.29	-31.71	74	53.26	36.52	11.69	59.18	100	0	P	V
													V
													V
802.11n HT40 CH 09 2452MHz		4904	35.23	-38.77	74	53.55	31.22	9.64	59.18	100	0	P	H
		7356	41.35	-32.65	74	52.21	36.58	11.72	59.16	100	0	P	H
													H
													H
		4904	35.99	-38.01	74	54.31	31.22	9.64	59.18	100	0	P	V
		7356	40.74	-33.26	74	51.6	36.58	11.72	59.16	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		30	22.85	-17.15	40	29.56	25.2	0.71	32.62	-	-	P	H
		145.43	25.33	-18.17	43.5	38.83	17.36	1.64	32.5	-	-	P	H
		205.57	30.04	-13.46	43.5	45.37	15.2	1.96	32.49	-	-	P	H
		418	29	-17	46	36.4	22.52	2.63	32.55	-	-	P	H
		651.77	38.34	-7.66	46	40.92	26.6	3.32	32.5	100	0	P	H
		730.34	34.01	-11.99	46	35.15	27.71	3.49	32.34	-	-	P	H
													H
													H
													H
													H
													H
													H
		37.76	29.73	-10.27	40	40.43	21.12	0.79	32.61	100	0	P	V
		201.69	31.57	-11.93	43.5	47.04	15.07	1.95	32.49	-	-	P	V
		358.83	26.3	-19.7	46	35.72	20.68	2.45	32.55	-	-	P	V
		418.97	29.19	-16.81	46	36.55	22.56	2.63	32.55	-	-	P	V
		651.77	34.43	-11.57	46	37.01	26.6	3.32	32.5	-	-	P	V
		729.37	35.16	-10.84	46	36.35	27.66	3.49	32.34	-	-	P	V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limitline.												



2.4GHz 2400~2483.5MHz

WIFI 802.11 ax HE20 Full (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE20 Full CH 01 2412MHz		2389.59	70.56	-3.44	74	57.79	27.76	16.16	31.15	100	271	P	H
		2389.065	49.77	-4.23	54	36.99	27.77	16.16	31.15	100	271	A	H
	*	2412	116.25	-	-	103.52	27.68	16.18	31.13	100	271	P	H
	*	2412	105.69	-	-	92.96	27.68	16.18	31.13	100	271	A	H
													H
													H
		2385.39	63.74	-10.26	74	50.95	27.79	16.15	31.15	400	7	P	V
		2389.485	45.48	-8.52	54	32.71	27.76	16.16	31.15	400	7	A	V
	*	2412	112.17	-	-	99.44	27.68	16.18	31.13	400	7	P	V
	*	2412	101.44	-	-	88.71	27.68	16.18	31.13	400	7	A	V
													V
													V
802.11ax HE20 Full CH 06 2437MHz		2357.32	55.04	-18.96	74	42.13	27.96	16.11	31.16	128	265	P	H
		2338.14	44.04	-9.96	54	31.1	28.02	16.09	31.17	128	265	A	H
	*	2437	115.06	-	-	102.34	27.63	16.21	31.12	128	265	P	H
	*	2437	105.5	-	-	92.78	27.63	16.21	31.12	128	265	A	H
		2491.46	54.78	-19.22	74	42.09	27.52	16.26	31.09	128	265	P	H
		2483.9	43.95	-10.05	54	31.27	27.53	16.25	31.1	128	265	A	H
		2314.48	54.39	-19.61	74	41.44	28.07	16.06	31.18	400	5	P	V
		2313.78	43.85	-10.15	54	30.9	28.07	16.06	31.18	400	5	A	V
	*	2437	108.92	-	-	96.2	27.63	16.21	31.12	400	5	P	V
	*	2437	99.83	-	-	87.11	27.63	16.21	31.12	400	5	A	V
		2493.84	53.73	-20.27	74	41.05	27.51	16.26	31.09	400	5	P	V
		2485.16	43.62	-10.38	54	30.93	27.53	16.26	31.1	400	5	A	V



802.11ax HE20 Full CH 11 2462MHz	*	2462	114.95	-	-	102.26	27.57	16.23	31.11	100	272	P	H
	*	2462	104.59	-	-	91.9	27.56	16.24	31.11	100	272	A	H
		2483.84	68.43	-5.57	74	55.75	27.53	16.25	31.1	100	272	P	H
		2483.52	52.01	-1.99	54	39.33	27.53	16.25	31.1	100	272	A	H
													H
													H
	*	2462	110.54	-	-	97.84	27.58	16.23	31.11	100	169	P	V
	*	2462	99.66	-	-	86.96	27.58	16.23	31.11	100	169	A	V
		2483.88	63.28	-10.72	74	50.6	27.53	16.25	31.1	100	169	P	V
		2483.56	48.49	-5.51	54	35.81	27.53	16.25	31.1	100	169	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11 ax HE20 Full (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full CH 01 2412MHz		4824	35.72	-38.28	74	54	31.25	9.63	59.16	100	0	P	H
													H
													H
													H
		4824	37	-37	74	55.28	31.25	9.63	59.16	100	0	P	V
													V
													V
													V
802.11ax HE20 Full CH 06 2437MHz		4874	35.61	-38.39	74	53.89	31.25	9.64	59.17	100	0	P	H
		7311	42.18	-31.82	74	53.15	36.52	11.69	59.18	100	0	P	H
													H
													H
		4874	36.99	-37.01	74	55.27	31.25	9.64	59.17	100	0	P	V
		7311	41.93	-32.07	74	52.9	36.52	11.69	59.18	100	0	P	V
													V
													V
802.11ax HE20 Full CH 11 2462MHz		4924	36.2	-37.8	74	54.39	31.34	9.65	59.18	100	0	P	H
		7386	41.16	-32.84	74	52.11	36.46	11.74	59.15	100	0	P	H
													H
													H
		4924	35.66	-38.34	74	53.85	31.34	9.65	59.18	100	0	P	V
		7386	41.45	-32.55	74	52.4	36.46	11.74	59.15	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11ax HE20 Partial 26 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Partial 26/0 CH 01 2412MHz		2387.7	65.43	-8.57	74	52.66	27.77	16.15	31.15	400	305	P	H
		2388.54	46.51	-7.49	54	33.73	27.77	16.16	31.15	400	305	A	H
	*	2412	121.7	-	-	108.97	27.68	16.18	31.13	400	305	P	H
	*	2412	113.05	-	-	100.32	27.68	16.18	31.13	400	305	A	H
													H
													H
		2386.23	62.58	-11.42	74	49.8	27.78	16.15	31.15	303	308	P	V
		2389.485	45.11	-8.89	54	32.34	27.76	16.16	31.15	303	308	A	V
	*	2412	116.62	-	-	103.89	27.68	16.18	31.13	303	308	P	V
	*	2412	108.26	-	-	95.53	27.68	16.18	31.13	303	308	A	V
													V
													V
802.11ax HE20 Partial 26/4 CH 06 2437MHz		2387	55.88	-18.12	74	43.1	27.78	16.15	31.15	100	274	P	H
		2389.8	45.37	-8.63	54	32.6	27.76	16.16	31.15	100	274	A	H
	*	2437	120.19	-	-	107.47	27.63	16.21	31.12	100	274	P	H
	*	2437	112.16	-	-	99.44	27.63	16.21	31.12	100	274	A	H
		2484.6	54.9	-19.1	74	42.22	27.53	16.25	31.1	100	274	P	H
		2485.86	45.53	-8.47	54	32.84	27.53	16.26	31.1	100	274	A	H
		2312.8	55.3	-18.7	74	42.35	28.07	16.06	31.18	110	168	P	V
		2347.1	44.57	-9.43	54	31.63	28.01	16.1	31.17	110	168	A	V
	*	2437	115.6	-	-	102.88	27.63	16.21	31.12	110	168	P	V
	*	2437	107.67	-	-	94.95	27.63	16.21	31.12	110	168	A	V
		2483.9	53.93	-20.07	74	41.25	27.53	16.25	31.1	110	168	P	V
		2484.11	44.65	-9.35	54	31.97	27.53	16.25	31.1	110	168	A	V



802.11ax HE20 Partial 26/8 CH 11 2462MHz	*	2462	122.06	-	-	109.36	27.58	16.23	31.11	100	286	P	H
	*	2462	114.37	-	-	101.67	27.58	16.23	31.11	100	286	A	H
		2483.88	71.39	-2.61	74	58.71	27.53	16.25	31.1	100	286	P	H
		2484.12	50.65	-3.35	54	37.97	27.53	16.25	31.1	100	286	A	H
													H
													H
	*	2462	116.19	-	-	103.49	27.58	16.23	31.11	100	166	P	V
	*	2462	108.1	-	-	95.4	27.58	16.23	31.11	100	166	A	V
		2484.2	66.18	-7.82	74	53.5	27.53	16.25	31.1	100	166	P	V
		2483.52	47.42	-6.58	54	34.74	27.53	16.25	31.1	100	166	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11ax HE20 Partial 26 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Partial 26/0 CH 01 2412MHz		4824	40.41	-33.59	74	58.69	31.25	9.63	59.16	100	0	P	H
													H
													H
													H
		4824	41.68	-32.32	74	59.96	31.25	9.63	59.16	100	0	P	V
													V
													V
802.11ax HE20 Partial 26/4 CH 06 2437MHz		4874	34.52	-39.48	74	52.8	31.25	9.64	59.17	100	0	P	H
		7311	41.24	-32.76	74	52.21	36.52	11.69	59.18	100	0	P	H
													H
													H
		4874	34.42	-39.58	74	52.7	31.25	9.64	59.17	100	0	P	V
		7311	41.68	-32.32	74	52.65	36.52	11.69	59.18	100	0	P	V
													V
802.11ax HE20 Partial 26/8 2462MHz		4924	34.57	-39.43	74	52.76	31.34	9.65	59.18	100	0	P	H
		7386	41.04	-32.96	74	51.99	36.46	11.74	59.15	100	0	P	H
													H
													H
		4924	34.95	-39.05	74	53.14	31.34	9.65	59.18	100	0	P	V
		7386	40.62	-33.38	74	51.57	36.46	11.74	59.15	100	0	P	V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11ax HE20 Partial 52 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Partial 52/37 CH 01 2412MHz		2386.755	64.98	-9.02	74	52.2	27.78	16.15	31.15	400	307	P	H
		2385.81	49.59	-4.41	54	36.8	27.79	16.15	31.15	400	307	A	H
	*	2412	118.94	-	-	106.21	27.68	16.18	31.13	400	307	P	H
	*	2412	110.55	-	-	97.82	27.68	16.18	31.13	400	307	A	H
													H
													H
		2390	59.53	-14.47	74	46.76	27.76	16.16	31.15	303	306	P	V
		2389.905	46.01	-7.99	54	33.24	27.76	16.16	31.15	303	306	A	V
	*	2412	114.3	-	-	101.57	27.68	16.18	31.13	303	306	P	V
	*	2412	105.62	-	-	92.89	27.68	16.18	31.13	303	306	A	V
													V
													V
802.11ax HE20 Partial 52/40 CH 11 2462MHz	*	2462	120.48	-	-	107.78	27.56	16.24	31.1	100	285	P	H
	*	2462	111.16	-	-	98.47	27.56	16.24	31.11	100	285	A	H
		2483.72	69.02	-4.98	74	56.34	27.53	16.25	31.1	100	285	P	H
		2483.64	52.63	-1.37	54	39.95	27.53	16.25	31.1	100	285	A	H
													H
													H
	*	2462	112.6	-	-	99.9	27.56	16.24	31.1	100	164	P	V
	*	2462	105.34	-	-	92.65	27.56	16.24	31.11	100	164	A	V
		2484.24	63.94	-10.06	74	51.26	27.53	16.25	31.1	100	164	P	V
		2483.64	49.23	-4.77	54	36.55	27.53	16.25	31.1	100	164	A	V
													V
													V