Prüfbericht-Nr.: *Test Report No.:*	**60393192 001**	**Auftrags-Nr.:** *Order No.:*	**158212961**	**Seite 1 von 21** *Page 1 of 21*
Kunden-Referenz-Nr.: *Client Reference No.:*	**N/A**	**Auftragsdatum:** *Order date:*	**07.07.2020**	
Auftraggeber: *Client:*	**TBS Avionics Limited 9/F, Tungtex Building, 203 Wai Yip Street, Kwun Tong, Hong Kong, China**			
Prüfgegenstand: *Test item:*	**915 MHz and 2.4GHz Wi-Fi Transmitter Module (Transceiver)**			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	**TBS Crossfire MICRO TX**			
Auftrags-Inhalt: *Order content:*	**US FCC Certification**			
Prüfgrundlage: *Test specification:*	**FCC Part 15 Subpart C, ANSI C63.10-2013**			

Wareneingangsdatum: *Date of receipt:*	**28.08.2020**
Prüfmuster-Nr.: *Test sample No.:*	**A002898394-001~002**
Prüfzeitraum: *Testing period:*	**07.09.2020 - 18.09.2020**
Ort der Prüfung: *Place of testing:*	**Hong Kong**
Prüflaboratorium: *Testing laboratory:*	**TÜV Rheinland Hong Kong Ltd.**
Prüfergebnis*: *Test result*:*	**Pass**

geprüft von / *tested by*:

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*
07.12.2020	Mika Chan / Project Manager	

kontrolliert von / *reviewed by*:

Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*
07.12.2020	Sharon Li / Senior Manager	

Sonstiges / *Other*: **FCC ID: QOS-TXMICRO**
This report covers the Wi-Fi transmitter.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Table of Content

Product information

Manufacturers declarations

	Transceiver	
	Wi-Fi	**UHF**
Operating frequency range	2412 - 2462 MHz	902.75 - 927.25 MHz
Type of modulation	802.11b: DSSS; Data rate: 1, 2, 5.5, 11 Mbps 802.11g: OFDM; Data rate: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n-HT20: OFDM Data rate: 6.5, 13, 19.5, 26, 39, 52, 58.5, 65 Mbps	Frequency Hopping Spread Spectrum
Number of channels	802.11b: Ch 1-11 802.11g: Ch 1-11 802.11n-HT20: Ch 1-11	50
Channel separation	5 MHz	0.5 MHz
Type of antenna	Integral Antenna	
Antenna gain (dBi)	3.0 dBi	2.0 dBi
Power level	fix	
Type of equipment	stand alone radio device	
Connection to public utility power line	Yes	
Nominal voltage	V_{nor}: 3.5-13 VDC	
Independent Operation Modes	Transmitting	

Product function and intended use

The equipment under test (EUT) is an UHF long range plug-in radio module for RC control. Additional, it supports Wi-Fi IEEE 802.11b/g/n(HT20) connectivity and it is powered by battery.

FCC ID: QOS-TXMICRO

Models	**Product description**
TBS Crossfire MICRO TX	915 MHz and 2.4GHz Wi-Fi Transmitter Module (Transceiver)

Submitted documents

Circuit Diagram
Block Diagram
Technical Description
User manual
Label

Independent Operation Modes

The basic operation modes are:

- Transmitting mode

For further information refer to User Manual

Related Submittal(s) Grants

This is a composite device.
For the test result of UHF transmitter function and other digital function, please refer to the test report 50159793 001 and 50308846 001 issued by TÜV Rheinland Hong Kong Ltd.

This test report covers the Wi-Fi transmitter.

Remark

The test results in this test report are only relevant to the tested sample and does not involve any assessment in the production.

Test Set-up and Operation Mode

Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

Test Operation and Test Software

Test operation should refer to test methodology.

- During test, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power was selected according to the instruction given by the manufacturer. The setting of the RF output power expected by the customer shall be fixed on the firmware of the final end product.

Special Accessories and Auxiliary Equipment

- Lenovo laptop - model: 80QQ

Countermeasures to achieve EMC Compliance

- NIL

Test Methodology

Radiated Emission

The radiated emission measurements of the transmitter part were performed according to the procedures in ANSI C63.10-2013.

For measurement below 1GHz - the equipment under test (EUT) was placed at the middle of the 80 cm height turntable. For measurement above 1GHz - the EUT was placed at the middle of the 1.5 m height turntable and RF absorbing material was placed on ground plane between turntable and measuring antenna. During the testing, the EUT was operated standalone and arranged for maximum emissions. The EUT was tested in three orthogonal planes.

The investigation is performed with the EUT rotated 360 °, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.

All radiated tests were performed at an antenna to EUT with 3 meters distance, unless stated otherwise in particular parts of this test report.

Field Strength Calculation

The field strength at 3 m was established by adding the meter reading of the spectrum analyzer to the factors associated with antenna correction factor, cable loss, preamplifiers and filter attenuation.

The equation is expressed as follow:

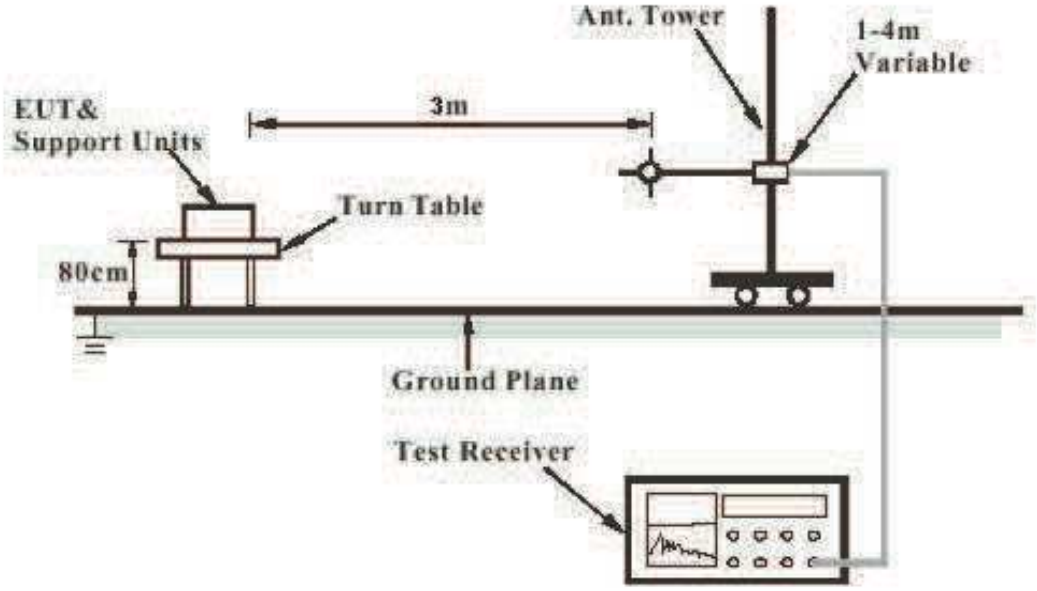
FS = R + AF + CF + FA – PA

Where FS = Field Strength in dBuV/m at 3 meters.
R = Reading of Spectrum Analyzer in dBuV.
AF = Antenna Factor in dB.
CF = Cable Attenuation Factor in dB.
FA = Filter Attenuation Factor in dB.
PA = Preamplifier Factor in dB.

FA and PA are only be used for the measuring frequency above 1 GHz.

Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



Note: Measurements above 1 GHz are done with a table height of 1.5m. In addition, there is RF absorbing material on the floor of the test site for above 1GHz measurement.

Diagram of Measurement Equipment Configuration for Mains Conduction Measurement (if applicable)

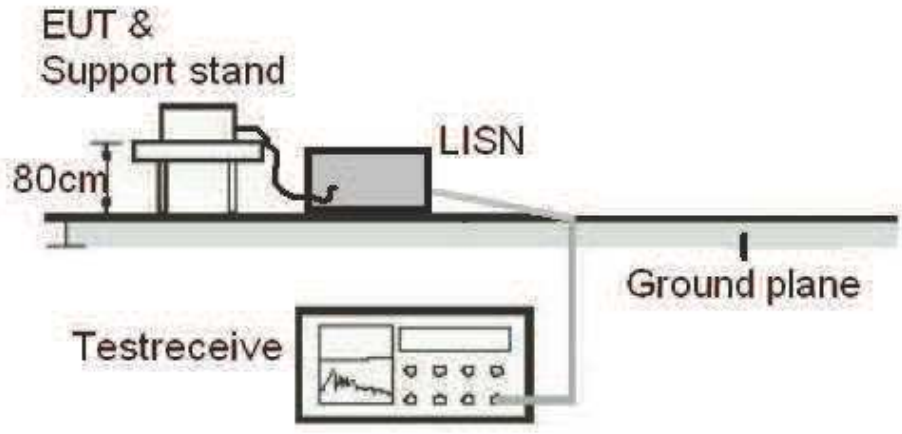
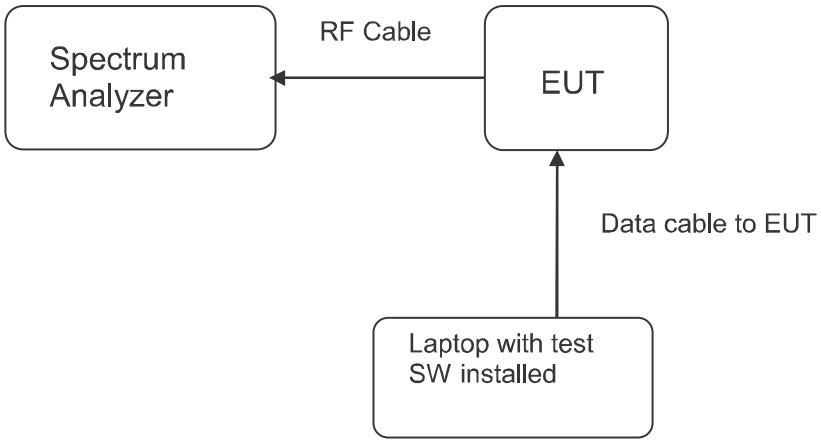


Diagram of Equipment Configuration for Antenna-port Conducted Measurement (if applicable)



Test Facility

Test Laboratory Information

TÜV Rheinland Hong Kong Ltd.
Address: 3-4, 11/F., Fou Wah Industrial Building, 10-16 Pun Shan Street, Tsuen Wan, N.T., Hong Kong·
Tel.: +852 2192 1000
Fax: +852 2192 1001
Email service-gc@tuv.com
Web: www.tuv.com

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

FCC

Type	: Accredited Test Firm
Designation Number	: HK0013
Test Firm Registration Number	: 371735
Scope	: Intentional Radiators

List of Test and Measurement Instruments

Radiated Emission

Equipment	Manufacturer	Type	Cal. Date	Due Date
Semi-anechoic Chamber	Frankonia	Nil	20 Mar 2020	20 Mar 2021
Test Receiver	R & S	ESU40	10 Oct 2019	10 Oct 2020
Bi-conical Antenna	R & S	HK116	07 Mar 2019	07 Mar 2021
Log Periodic Antenna	R & S	HL223	06 Mar 2019	06 Mar 2021
Standard Gain Horn	ETS-Lindgren	3160-07	04 Sep 2020	04 Sep 2021
Standard Gain Horn	ETS-Lindgren	3160-08	26 Sep 2020	26 Sep 2021
Standard Gain Horn	ETS-Lindgren	3160-10	03 Oct 2018	03 Oct 2020
Double-Ridged Waveguide Horn	EMCO	3116	05 Oct 2018	05 Oct 2020
Double-Ridged Waveguide Horn	EMCO	3117	30 Aug 2019	30 Aug 2021
Coaxial cable	Huber+Suhner	CNM-NMCMILX800-473	04 Oct 2018	04 Oct 2020
High Frequency Cable	Pasternack	PE3VNA4001-3M	29 Jan 2019	29 Jan 2021
Microwave Preamplifier	COM-POWER Corporation	PAM-118A	06 Mar 2020	06 Mar 2021
Preamplifier 18GHz to 40GHz with cable (EMC656)	A.H. Systems, Inc.	PAM-1840VH	30 Jan 2019	30 Jan 2021
High Pass Filter (cutoff freq. =1000MHz)	Trilithic	23042	30 Oct 2019	30 Oct 2021

AC Mains Conducted Emission

Equipment	Manufacturer	Type	Cal. Date	Due Date
Test Receiver	R & S	ESU40	10 Oct 2019	10 Oct 2020
LISN	R&S	ENV216	09 Aug 2020	09 Aug 2021
Double Shield Cable	Huber+ Suhner	RG223/U-01	20 May 2019	20 May 2021

Radio Test

Equipment	Manufacturer	Type	Cal. Date	Due Date
Spectrum Analyzer	R & S	FSP30	14 Aug 2020	14 Aug 2021

Measurement Uncertainty

The estimated combined standard uncertainty for power-line conducted emissions measurements is ±2.42dB.

The estimated combined standard uncertainty for radiated emissions measurements is ±4.81dB (9kHz to 30MHz) and ±4.62dB (30MHz to 200MHz) and ±5.67dB (200MHz to 1000MHz) and is ±5.07dB (1GHz to 8.2GHz) and ±4.58dB (8.2GHz to 12.4GHz) and ±4.78dB (12.4GHz to 18GHz)

The estimated combined standard uncertainty for antenna conducted emission is ±2.1dB

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for the level of confidence is approximately 95%.

Results FCC Part 15 – Subpart C

FCC 15.203 – Antenna Requirement 1		Pass
FCC Requirement:	No antenna other than that furnished by the responsible party shall be used with the device	
Results:	a) Antenna type: b) Manufacturer and model no: c) Peak Gain:	Integral antenna N/A 3.0 dBi
Verdict:	Pass	

FCC 15.204 – Antenna Requirement 2	N/A
FCC Requirement:	An intentional radiator may be operated only with the antenna with which it is authorized. If an antenna is marketed with the intentional radiator, it shall be of a type which is authorized with the intentional radiator.
Results:	Only one integral antenna can be used.
Verdict:	N/A

FCC 15.207– Conducted Emission on AC Mains — **Pass**

Test Specification : ANSI C63.10-2013
Test date : 09.09.2020
Mode of operation : All function On (Wi-Fi On + UHF On + USB mode)
Port of testing : AC Mains input port of laptop
Supply voltage : 120Vac 60Hz
Temperature : 23°C
Humidity : 50%

Requirement: 15.207(a)

Live measurement

Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict
0,15 – 0,5	0.154	54.28	---	66 - 56	56 - 46	Pass
	0.230	---	29.94	66 - 56	56 - 46	Pass
	0.450	36.66	25.60	66 - 56	56 - 46	Pass
> 0,5 - 5	1.534	---	30.22	56	46	Pass
	1.586	40.52	---	56	46	Pass
	3.150	---	30.51	56	46	Pass
	3.306	39.04	---	56	46	Pass
> 5 - 30	5.166	35.06	---	60	50	Pass
	5.206	---	27.85	60	50	Pass
	25.322	29.95	---	60	50	Pass
	25.726	---	23.87	60	50	Pass

Neutral measurement

Frequency range (MHz)	Frequency (MHz)	Quasi-peak dBµV	Average dBµV	Limit QP (dBµV)	Limit AV (dBµV)	Verdict
0,15 – 0,5	0.150	45.5	32.4	66 - 56	56 - 46	Pass
	0.450	37.9	28.8	66 - 56	56 - 46	Pass
> 0,5 - 5	No peak found	---	---	56	46	Pass
> 5 - 30	No peak found	---	---	60	50	Pass

Remark: Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate.

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150kHz to 30MHz does not exceed the limits. For test Results plots refer to Appendix 1, page 2.

FCC 15.247 (a)(2)– 6dB Bandwidth Measurement **Pass**

FCC Requirement: Systems using digital modulation techniques may operate in the 902 – 928 MHz, 2400 – 2483.5 MHz, and 5725 – 5850 MHz bands. The minimum 6dB bandwidth shall be at least 500kHz.

Test Specification : ANSI C63.10 – 2013
Test date : 18.09.2020
Mode of operation : Tx mode
Port of testing : Temporary antenna port
Supply voltage : 7.6VDC
Temperature : 23°C
Humidity : 50%

Remark: For test protocols please refer to Appendix 1

802.11b

Channel frequency (MHz)	6 dB left (MHz)	6 dB right (MHz)	6dB bandwidth (kHz)
2412	2407.450	2416.450	9000
2437	2432.500	2441.500	9000
2462	2457.500	2466.500	9000

802.11g

Channel frequency (MHz)	6 dB left (MHz)	6 dB right (MHz)	6dB bandwidth (kHz)
2412	2403.850	2420.100	16250
2437	2428.850	2444.950	16100
2462	2453.850	2470.100	16250

802.11n-HT20

Channel frequency (MHz)	6 dB left (MHz)	6 dB right (MHz)	6dB bandwidth (kHz)
2412	2403.150	2420.850	17700
2437	2428.150	2445.850	17700

2462	2453.150	2470.850	17700

FCC 15.247(b)(3) – Maximum Peak Conducted Output Power **Pass**

FCC Requirement: For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz bands: 1 Watt (30dBm)

Test Specification : ANSI C63.10 – 2013
Test date : 18.09.2020
Mode of operation : Tx mode
Port of testing : Temporary antenna port
Supply voltage : 7.6VDC
Temperature : 24ºC
Humidity : 50%

Remark: Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. The worst cases is found in 1Mbps, 6Mbps and 6.5Mbps respectively.

802.11b

Frequency (MHz)	Measured Output Power (dBm)	Limit (W/dBm)	Verdict
2412	17.455	1 / 30.0	Pass
2437	16.805	1 / 30.0	Pass
2462	16.517	1 / 30.0	Pass

802.11g

Frequency (MHz)	Measured Output Power (dBm)	Limit (W/dBm)	Verdict
2412	16.071	1 / 30.0	Pass
2437	15.845	1 / 30.0	Pass
2462	15.265	1 / 30.0	Pass

802.11n-HT20

Frequency (MHz)	Measured Output Power (dBm)	Limit (W/dBm)	Verdict
2412	14.753	1 / 30.0	Pass
2437	15.177	1 / 30.0	Pass
2462	14.982	1 / 30.0	Pass

FCC 15.247(e) 2 – Power Spectral Density	Pass

FCC Requirement: For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Test Specification : ANSI C63.10 – 2013
Test date : 18.09.2020
Mode of operation : Tx mode
Port of testing : Temporary antenna port
Supply voltage : 7.6VDC
Temperature : 24°C
Humidity : 50%

Remark: For test protocols please refer to Appendix 1. The worst cases is found in 1Mbps, 6Mbps and 6.5Mbps respectively.

802.11b

Operating frequency (MHz)	Power density (dBm)	Limit (dBm)	Verdict
2412	5.17	8.0	Pass
2437	5.00	8.0	Pass
2462	4.84	8.0	Pass

802.11g

Operating frequency (MHz)	Power density (dBm)	Limit (dBm)	Verdict
2412	1.85	8.0	Pass
2437	1.58	8.0	Pass
2462	1.39	8.0	Pass

802.11n-HT20

Operating frequency (MHz)	Power density (dBm)	Limit (dBm)	Verdict
2412	3.94	8.0	Pass
2437	3.52	8.0	Pass
2462	2.90	8.0	Pass

FCC 15.247(d) – Spurious Conducted Emissions **Pass**

Test Specification : ANSI C63.10 – 2013
Test date : 18.09.2020
Mode of operation : Tx mode
Port of testing : Temporary antenna port
Supply voltage : 7.6VDC
Temperature : 24°C
Humidity : 50%

FCC Requirement: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

Remark: Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate.

The worst cases is found in 1Mbps, 6Mbps and 6.5Mbps respectively. For test protocols refer to Appendix 1

802.11b

Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict
2412	24568.000	-40.38	5.17	45.55	Pass
2437	24568.000	-40.45	5.00	45.45	Pass
2462	24568.000	-41.09	4.84	45.93	Pass

802.11g

Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict
2412	2398.240	-39.06	1.85	40.91	Pass
2437	24304.000	-41.22	1.58	42.80	Pass
2462	23056.000	-40.89	1.39	42.28	Pass

802.11n-HT20

Operating frequency (MHz)	Spurious frequency (MHz)	Spurious Level (dBm)	Reference value (dBm)	Delta (dB)	Verdict
2412	2398.880	-37.46	3.94	41.40	Pass
2437	22744.000	-40.39	3.52	43.91	Pass
2462	2485.100	-40.11	2.90	43.01	Pass

FCC 15.205– Radiated Emissions in Restricted Frequency Bands	Pass

Test Specification : ANSI C63.10 – 2013
Test Specification : 09.09.2020
Mode of operation : Tx mode
Port of testing : Enclosure
Frequency range : 9kHz – 25GHz
Supply voltage : 7.6VDC
Temperature : 23°C
Humidity : 50%

FCC Requirement: In any 100kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in section15.205(a), must also comply with the radiated emission limits specified in section 15.205(c).

Rmark: Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. The worst cases is found in 1Mbps, 6Mbps and 6.5Mbps respectively.

All three transmit frequency modes comply with the field strength within the restricted bands. There is no spurious found below 30MHz.

Mode: 802.11b@2412MHz TX Vertical Polarization

Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
279.851	36.7	46.0 / QP
2390.00	33.2	74.0 / PK
2390.00	19.9	54.0 / AV
2400.00	44.9	74.0 / PK
2400.00	32.4	54.0 / AV
4823.987	53.5	74.0 / PK
4823.987	50.3	54.0 / AV

Mode: 802.11b@2412 MHz TX Horizontal Polarization

Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
2390.00	34.7	74.0 / PK
2390.00	21.5	54.0 / AV
2400.00	55.5	74.0 / PK
2400.00	42.8	54.0 / AV
4823.987	51.9	74.0 / PK
4823.987	48.4	54.0 / AV

Mode: 802.11b@2437 MHz TX Vertical Polarization

Freq MHz	Level dBuV/m	Limit/ Detector dBuV/m
273.590	36.3	46.0 / QP
4873.987	53.1	74.0 / PK
4873.987	49.6	54.0 / AV
7310.978	53.1	74.0 / PK
7310.978	49.6	54.0 / AV

Mode: 802.11b@2437 MHz TX	Horizontal Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
4873.985	52.5	74.0 / PK
4873.985	48.8	54.0 / AV
7310.977	49.3	74.0 / PK
7310.977	38.1	54.0 / AV
Mode: 802.11b@2462 MHz TX	Vertical Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
278.240	27.2	46.0 / QP
2483.50	27.1	74.0 / PK
2483.50	14.5	54.0 / AV
4923.989	54.0	74.0 / PK
4923.989	51.0	54.0 / AV
7385.986	57.5	74.0 / PK
7385.986	48.7	54.0 / AV
Mode: 802.11b@2462 MHz TX	Horizontal Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
2483.50	25.2	74.0 / PK
2483.50	13.2	54.0 / AV
4923.993	51.7	74.0 / PK
4923.993	48.1	54.0 / AV
7385.991	52.4	74.0 / PK
7385.991	42.4	54.0 / AV
Mode: 802.11g@2412 MHz TX	Vertical Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
277.760	35.6	46.0 / QP
2390.00	46.9	74.0 / PK
2390.00	34.9	54.0 / AV
2400.00	59.8	74.0 / PK
2400.00	48.6	54.0 / AV
4818.750	50.3	74.0 / PK
4818.750	37.2	54.0 / AV
Mode: 802.11g@2412 MHz TX	Horizontal Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
2390.00	51.9	74.0 / PK
2390.00	40.9	54.0 / AV
2400.00	62.3	74.0 / PK
2400.00	52.6	54.0 / AV
4823.500	49.9	74.0 / PK
4823.500	36.5	54.0 / AV

Mode: 802.11g@2437 MHz TX	Vertical Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
282.693	36.1	46.0 / QP
4872.250	52.3	74.0 / PK
4872.250	39.3	54.0 / AV
7313.250	63.1	74.0 / PK
7313.250	49.4	54.0 / AV
Mode: 802.11g@2437 MHz TX	Horizontal Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
4872.775	49.2	74.0 / PK
4872.775	37.1	54.0 / AV
7307.500	57.8	74.0 / PK
7307.500	43.6	54.0 / AV
Mode: 802.11g@2462MHz TX	Vertical Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
281.247	36.8	46.0 / QP
2483.50	40.9	74.0 / PK
2483.50	30.2	54.0 / AV
4922.762	50.8	74.0 / PK
4922.762	38.6	54.0 / AV
7382.500	65.7	74.0 / PK
7382.500	51.9	54.0 / AV
Mode: 802.11g@2462 MHz TX	Horizontal Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
2483.50	37.7	74.0 / PK
2483.50	27.1	54.0 / AV
4922.743	48.3	74.0 / PK
4922.743	35.7	54.0 / AV
7392.179	57.6	74.0 / PK
7392.179	42.0	54.0 / AV
Mode: 802.11n-HT20@2412MHz TX	Vertical Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
275.685	35.1	46.0 / QP
2390.00	47.1	74.0 / PK
2390.00	36.0	54.0 / AV
2400.00	58.9	74.0 / PK
2400.00	47.1	54.0 / AV
4822.258	48.0	74.0 / PK
4822.258	34.3	54.0 / AV

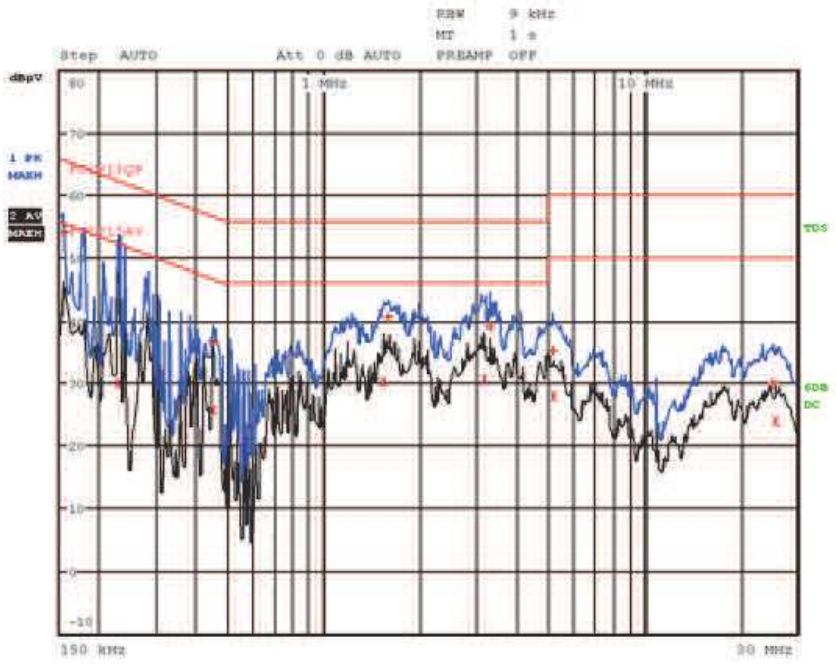
Mode: 802.11n-HT20@2412 MHz TX	Horizontal Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
2390.00	50.5	74.0 / PK
2390.00	38.5	54.0 / AV
2400.00	61.9	74.0 / PK
2400.00	50.9	54.0 / AV
4821.448	47.8	74.0 / PK
4821.448	34.9	54.0 / AV
Mode: 802.11n-HT20@2437 MHz TX	Vertical Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
277.160	33.4	46.0 / QP
4873.980	51.5	74.0 / PK
4873.980	38.6	54.0 / AV
7314.408	61.0	74.0 / PK
7314.408	46.2	54.0 / AV
Mode: 802.11n-HT20@2437 MHz TX	Horizontal Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
4872.471	50.4	74.0 / PK
4872.471	36.6	54.0 / AV
7314.400	56.6	74.0 / PK
7314.400	41.6	54.0 / AV
Mode: 802.11n-HT20@2462MHz TX	Vertical Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
276.235	33.0	46.0 / QP
2483.50	42.0	74.0 / PK
2483.50	31.3	54.0 / AV
4924.990	49.3	
4924.990	36.6	
7389.413	63.3	74.0 / PK
7389.413	48.1	54.0 / AV
Mode: 802.11n-HT20@2462 MHz TX	Horizontal Polarization	
Freq MHz	**Level dBuV/m**	**Limit/ Detector dBuV/m**
2483.50	40.5	74.0 / PK
2483.50	29.0	54.0 / AV
4922.493	49.0	74.0 / PK
4922.493	35.0	54.0 / AV
7389.429	57.6	74.0 / PK
7389.429	42.4	54.0 / AV

Appendix 1

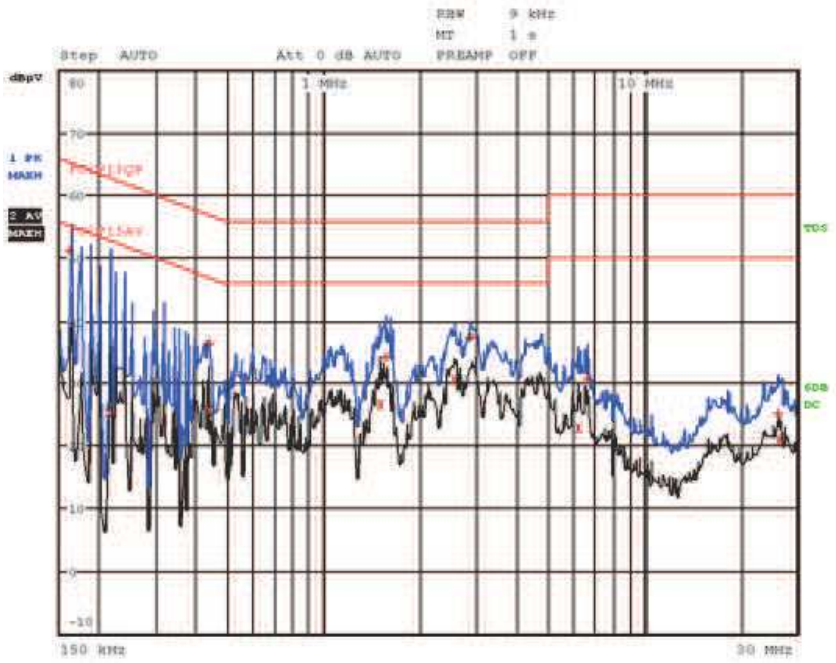
Test Protocols

AC Mains Conducted Emission

Mode: TX mode; Line: L1

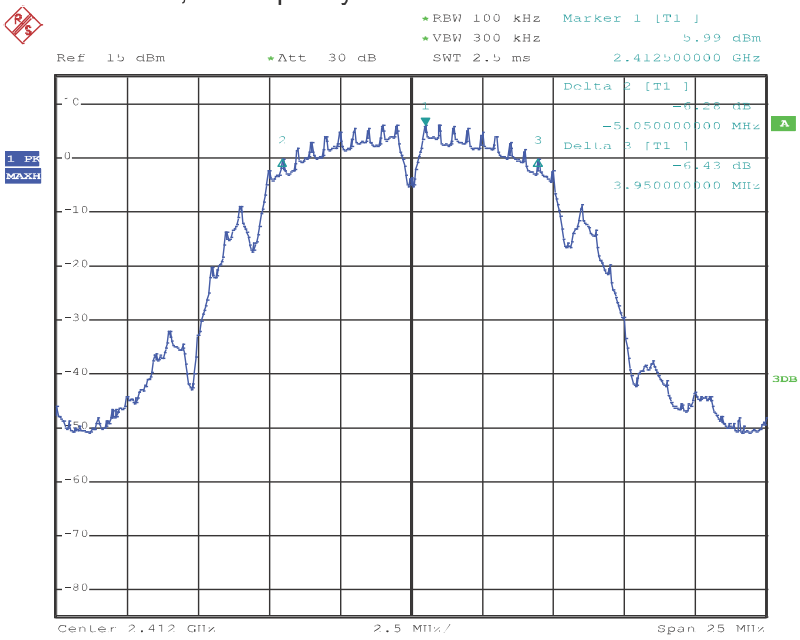


Mode: TX mode; Line: N



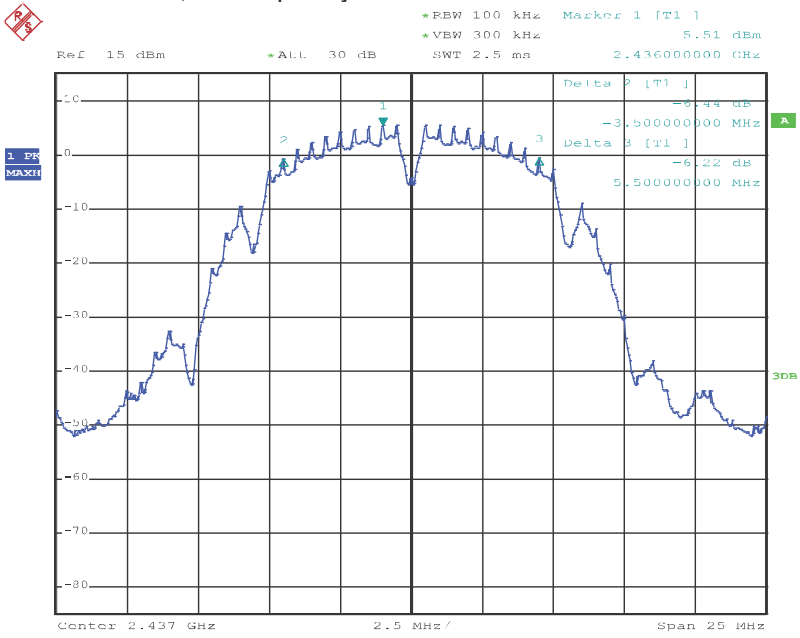
6 dB Bandwidth Measurement

Mode: 802.11b, TX frequency: 2412MHz



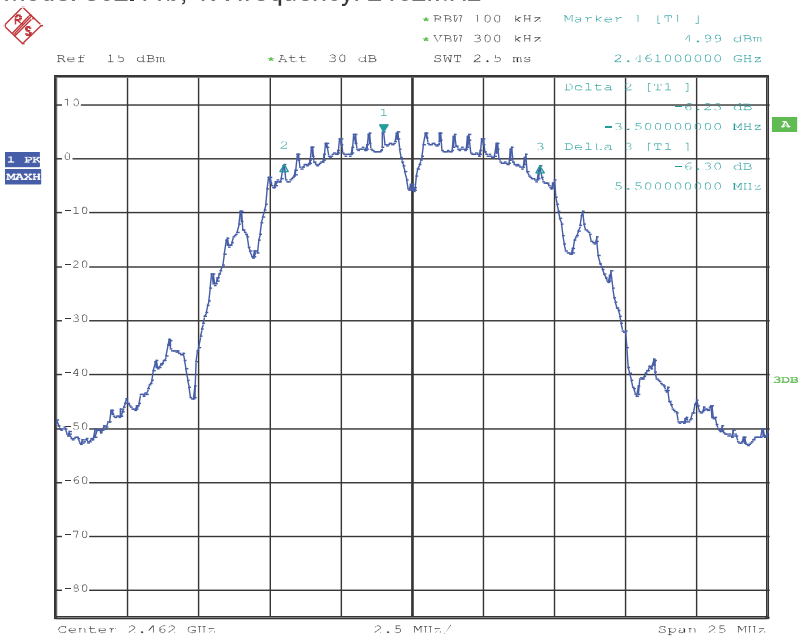
Date: 18.SEP.2020 09:21:37

Mode: 802.11b, TX frequency: 2437MHz



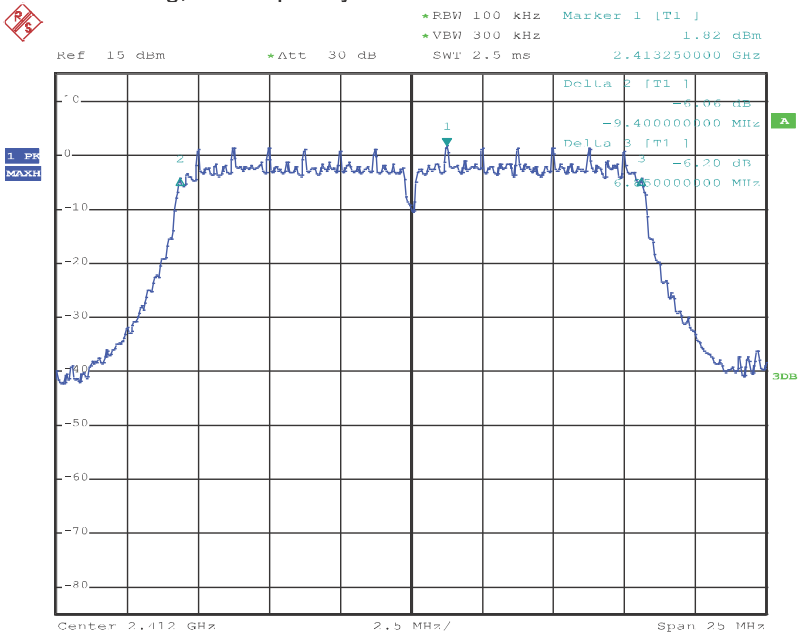
Date: 18.SEP.2020 09:27:50

Mode: 802.11b, TX frequency: 2462MHz



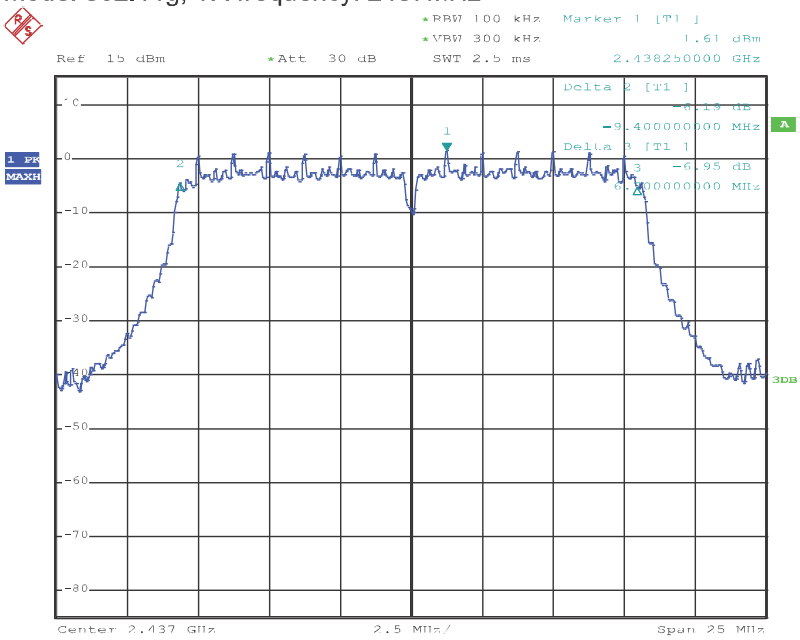
Date: 18.SEP.2020 09:30:33

Mode: 802.11g, TX frequency: 2412MHz



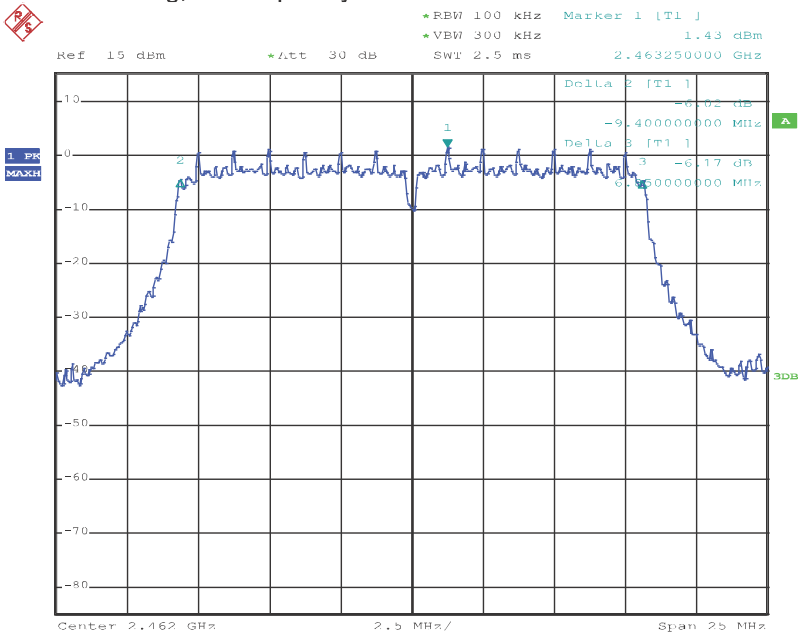
Date: 18.SEP.2020 10:47:54

Mode: 802.11g, TX frequency: 2437MHz



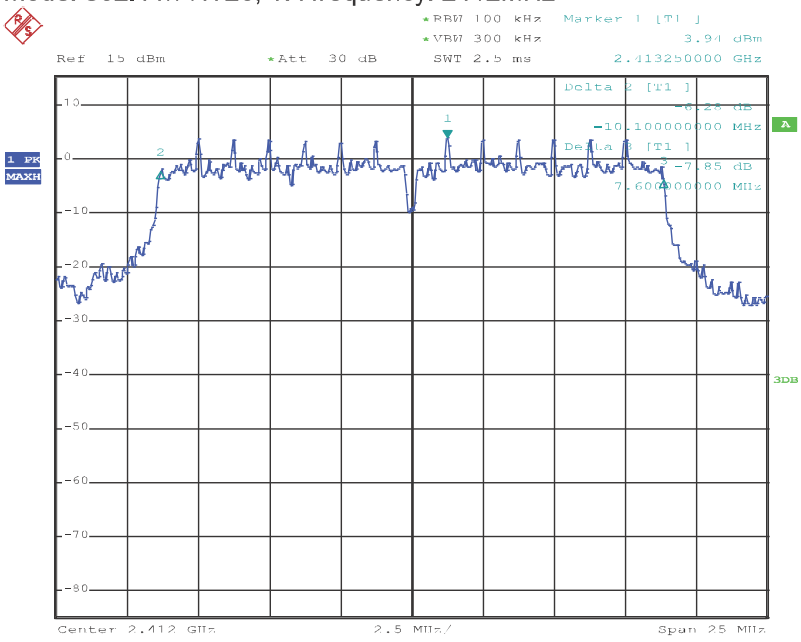
Date: 18.SEP.2020 10:53:22

Mode: 802.11g, TX frequency: 2462MHz



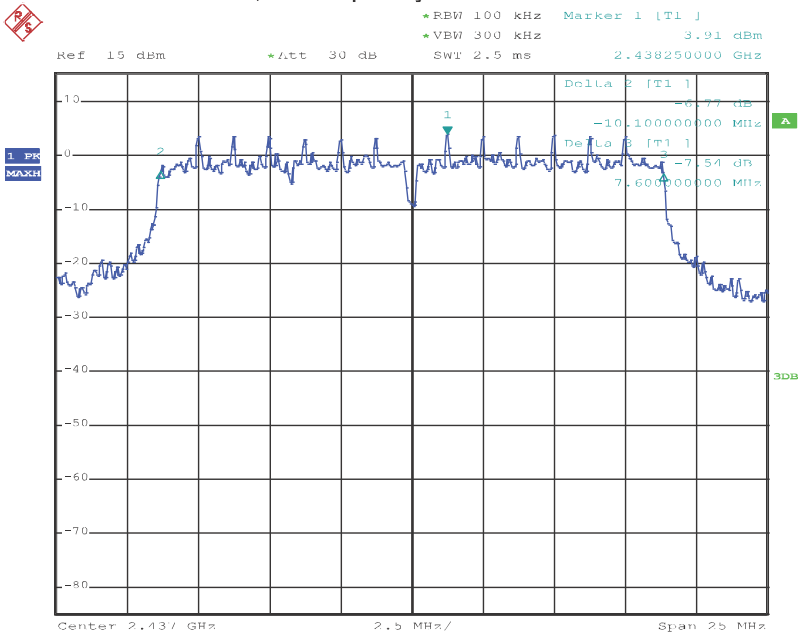
Date: 18.SEP.2020 10:56:34

Mode: 802.11n-HT20, TX frequency: 2412MHz



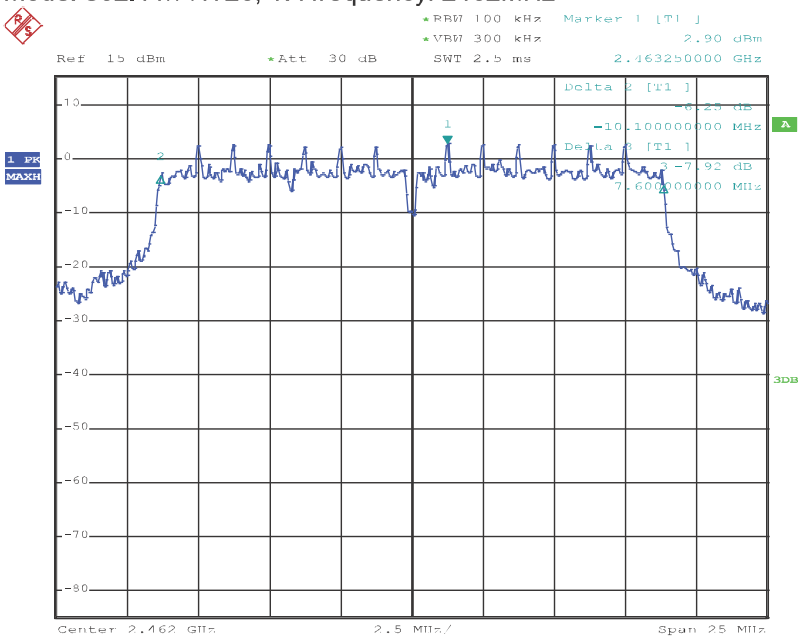
Date: 18.SEP.2020 13:24:46

Mode: 802.11n-HT20, TX frequency: 2437MHz



Date: 18.SEP.2020 13:21:48

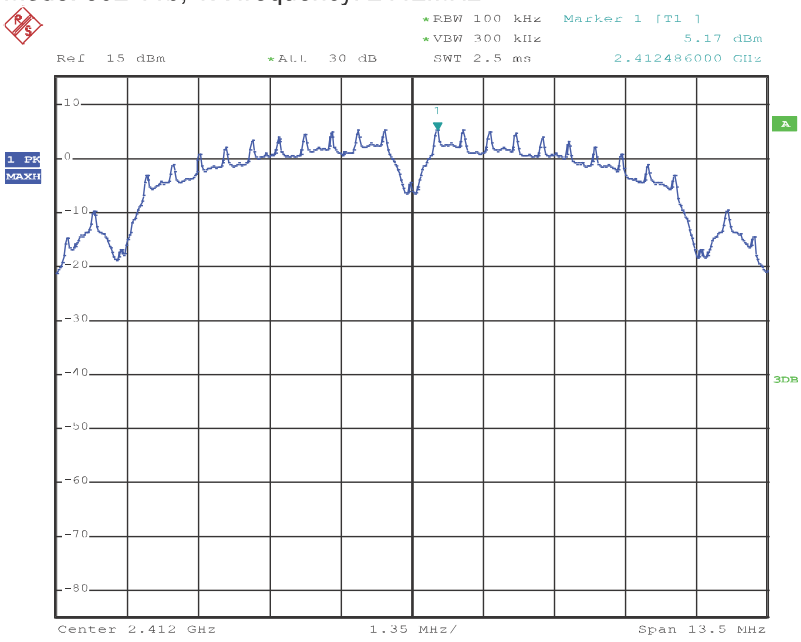
Mode: 802.11n-HT20, TX frequency: 2462MHz



Date: 18.SEP.2020 13:27:15

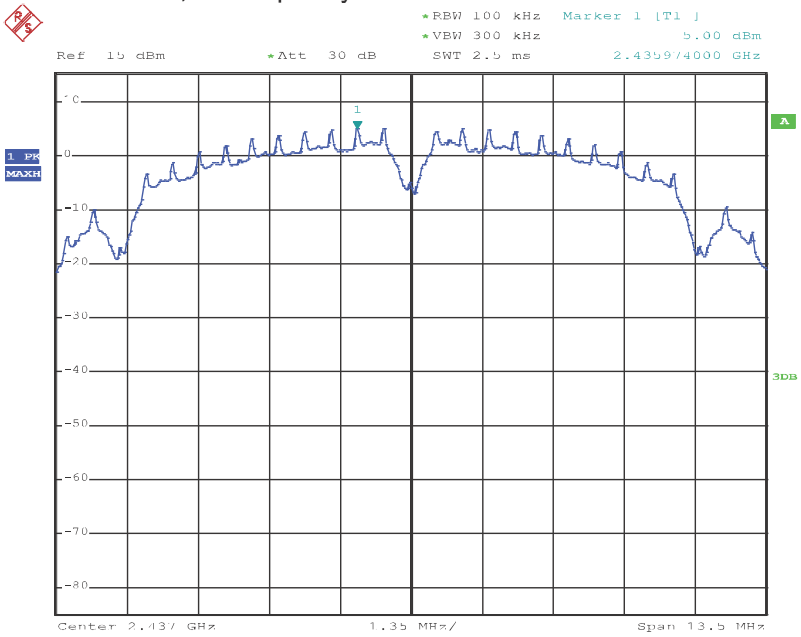
Power Spectral Density

Mode: 802.11b, TX frequency: 2412MHz



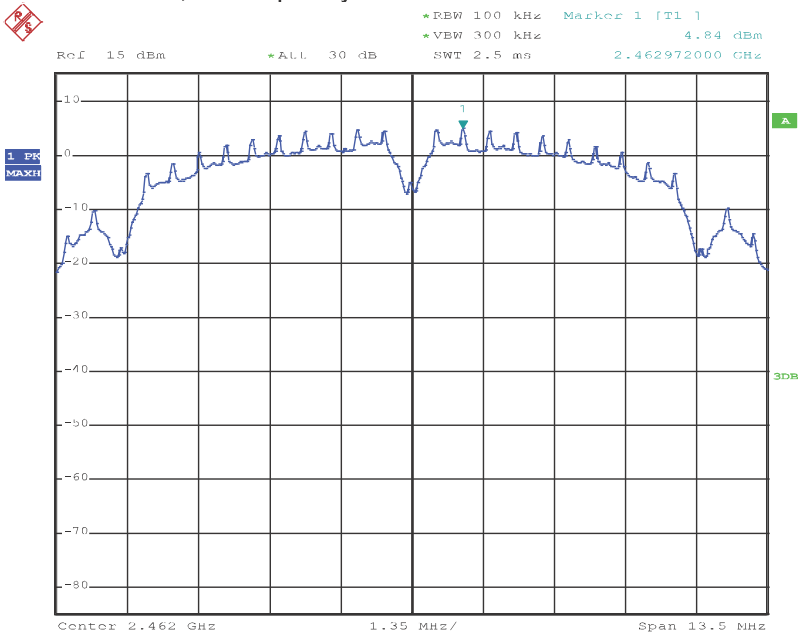
Date: 18.SEP.2020 09:39:59

Mode: 802.11b, TX frequency: 2437MHz



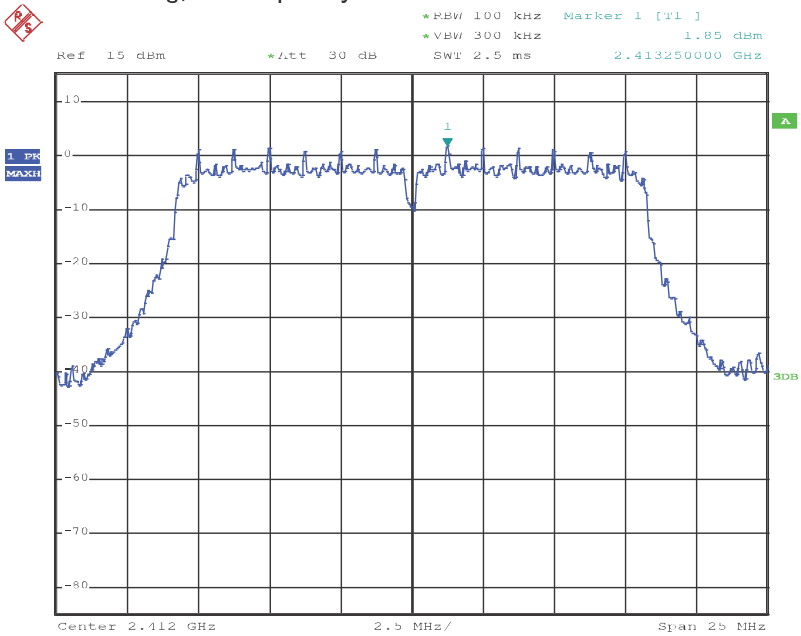
Date: 18.SEP.2020 09:37:20

Mode: 802.11b, TX frequency: 2462MHz



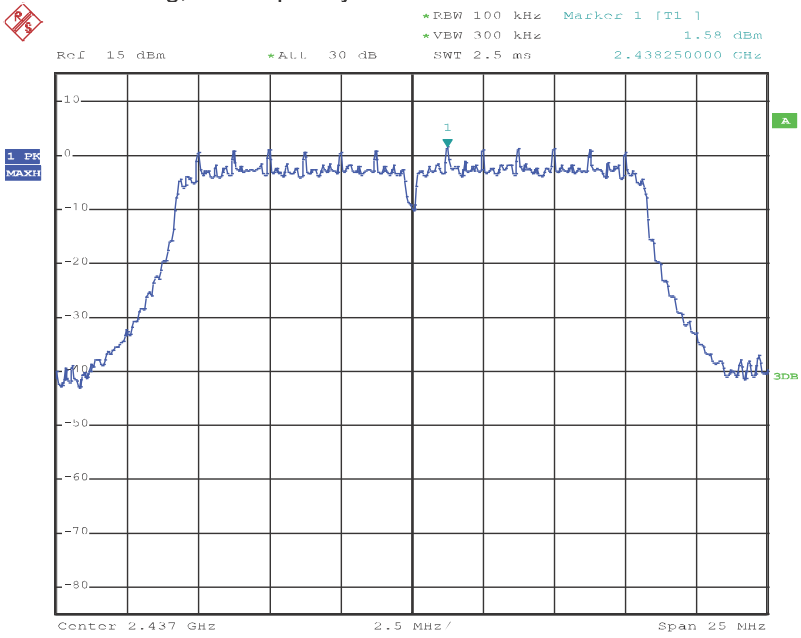
Date: 18.SEP.2020 09:35:56

Mode: 802.11g, TX frequency: 2412MHz



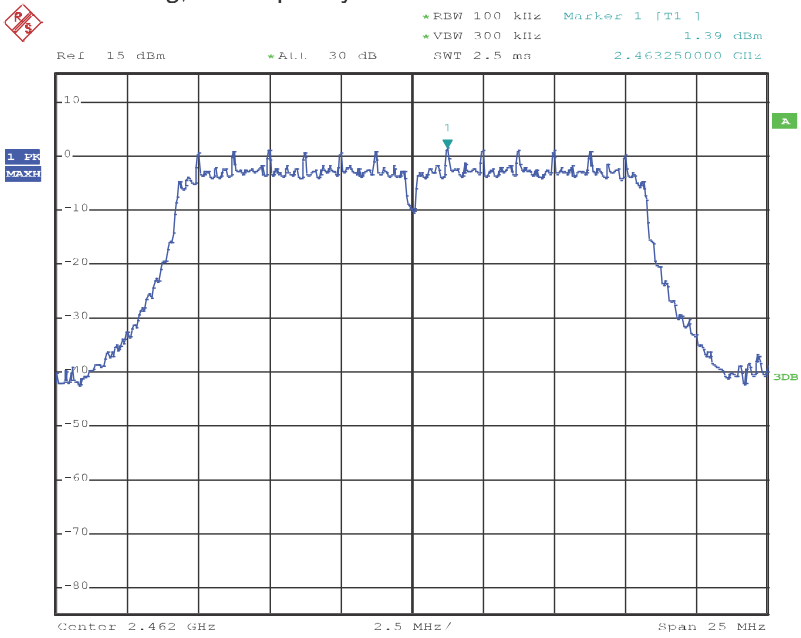
Date: 18.SEP.2020 10:49:11

Mode: 802.11g, TX frequency: 2437MHz



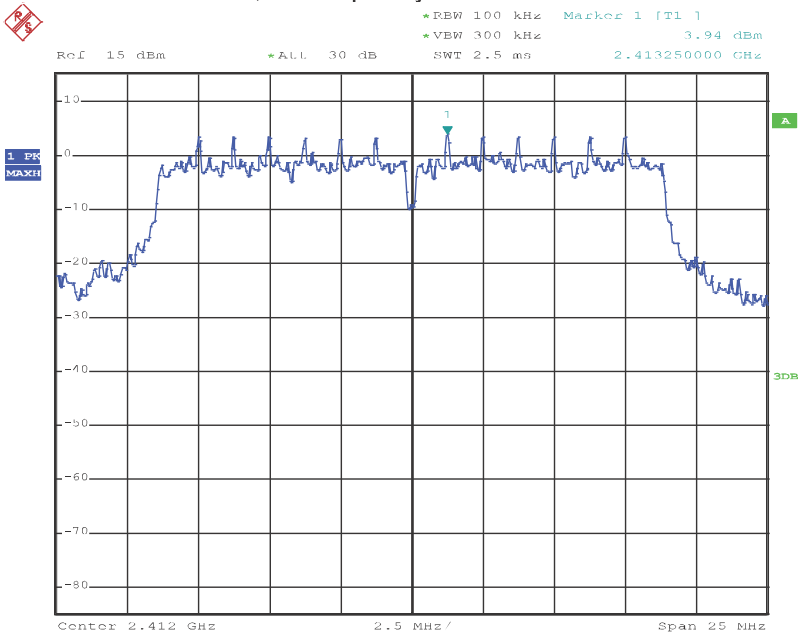
Date: 18.SEP.2020 10:52:45

Mode: 802.11g, TX frequency: 2462MHz



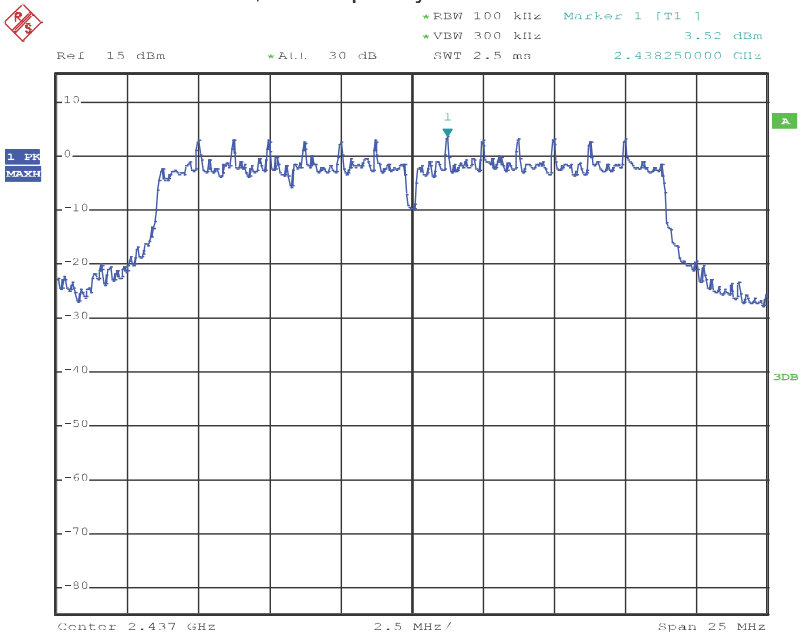
Date: 18.SEP.2020 10:57:13

Mode: 802.11n-HT20, TX frequency: 2412MHz



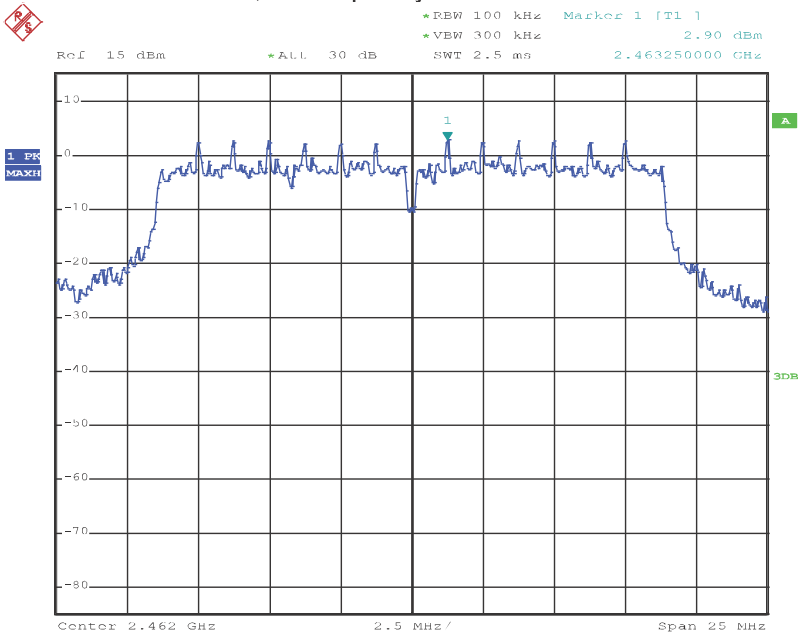
Date: 18.SEP.2020 13:24:20

Mode: 802.11n-HT20, TX frequency: 2437MHz



Date: 18.SEP.2020 13:22:35

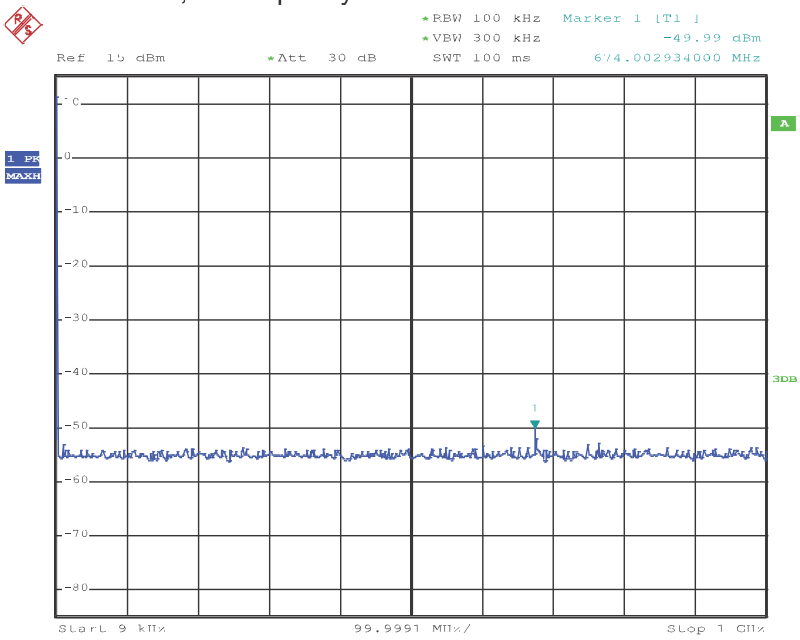
Mode: 802.11n-HT20, TX frequency: 2462MHz



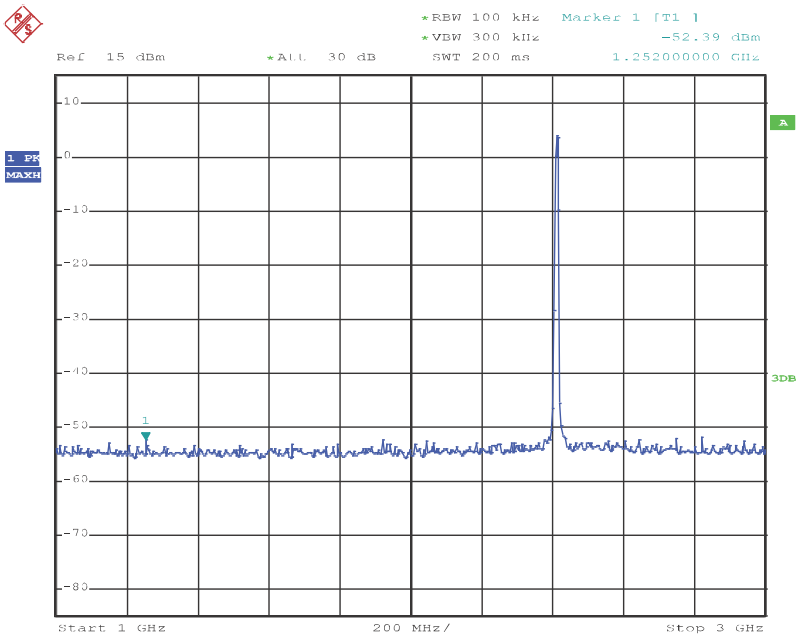
Date: 18.SEP.2020 13:26:29

Spurious Conducted Emissions

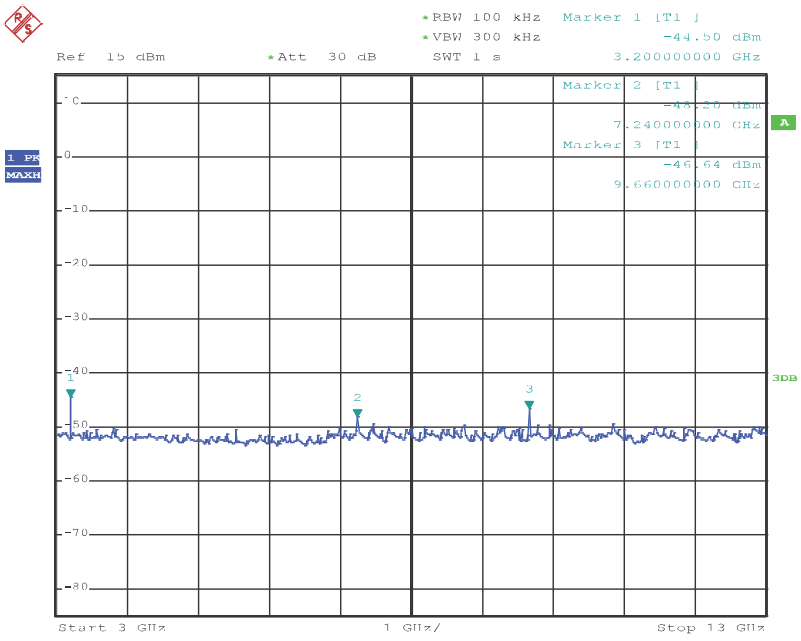
Mode: 802.11b, TX frequency: 2412MHz



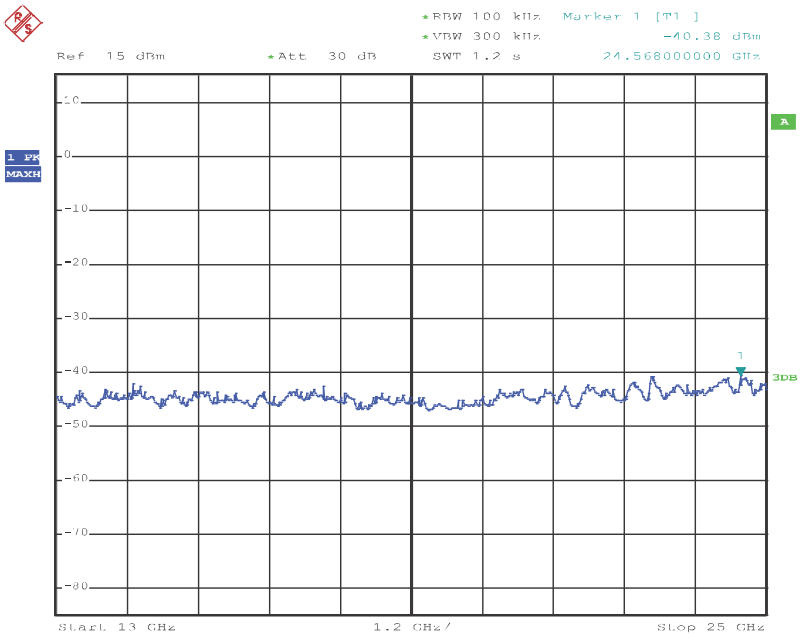
Date: 18.SEP.2020 09:44:39



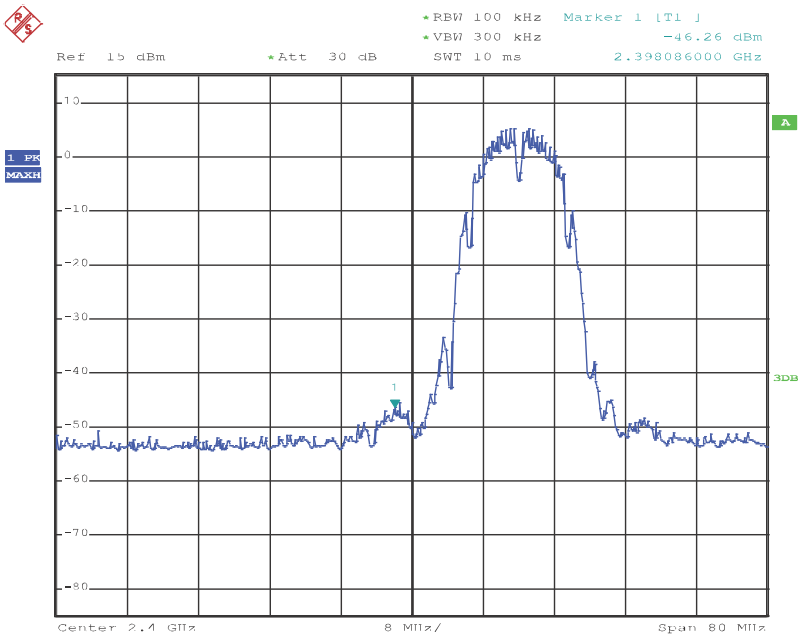
Date: 18.SEP.2020 09:45:34



Date: 18.SEP.2020 09:48:34

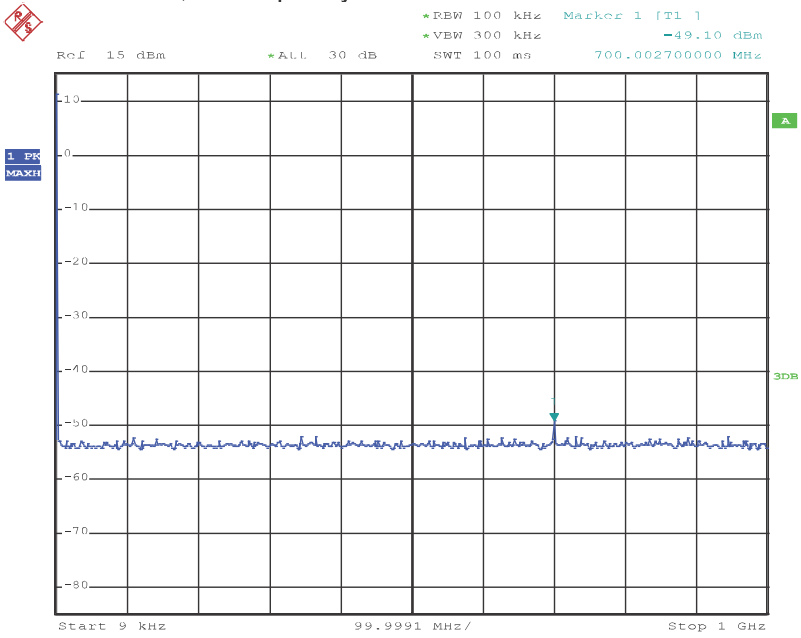


Date: 18.SEP.2020 09:52:10

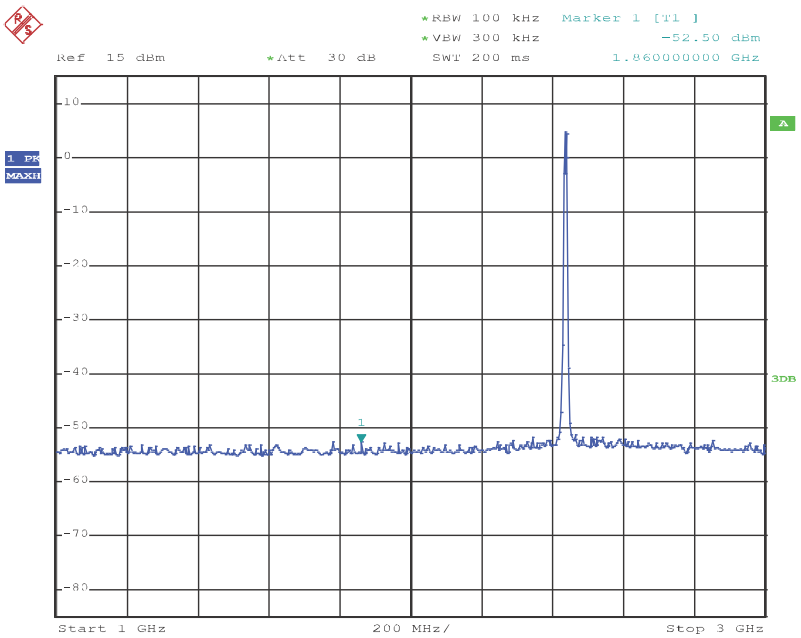


Date: 18.SEP.2020 09:41:05

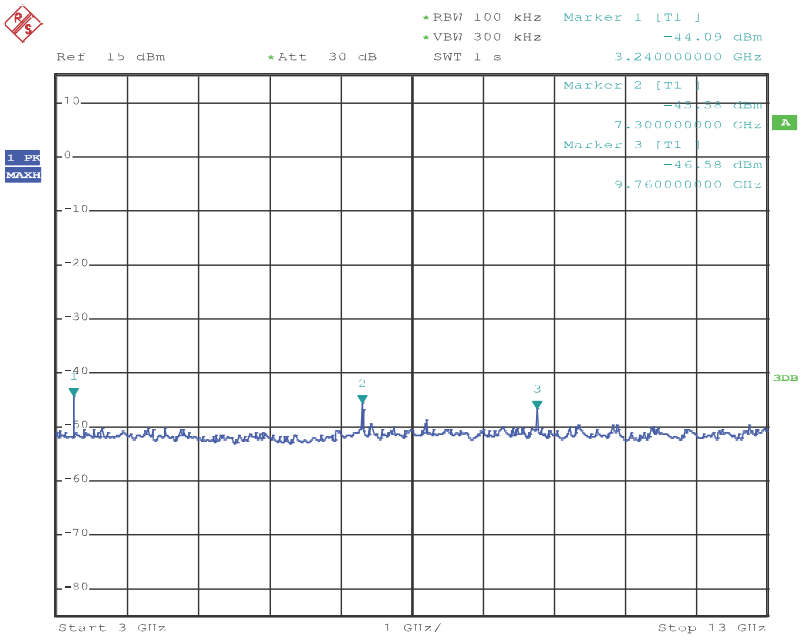
Mode: 802.11b, TX frequency: 2437MHz



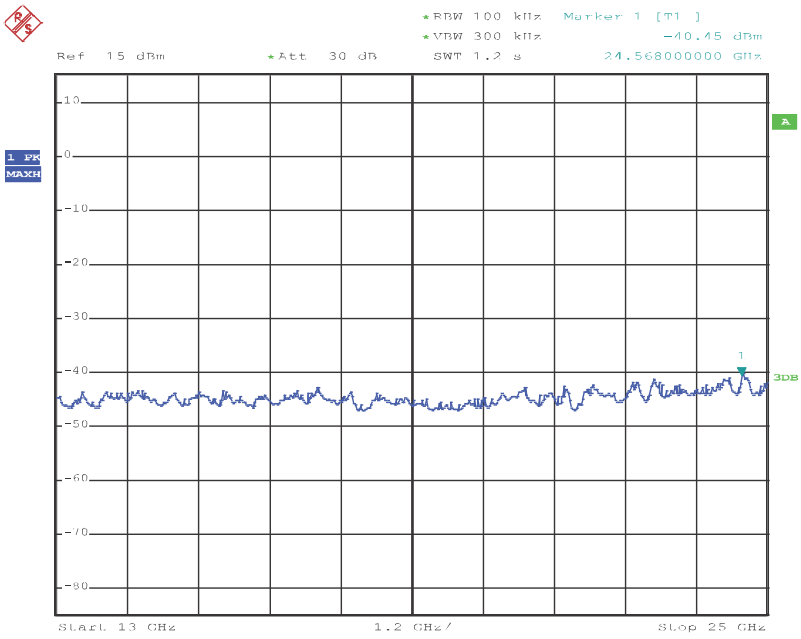
Date: 18.SEP.2020 10:12:34



Date: 18.SEP.2020 10:14:11

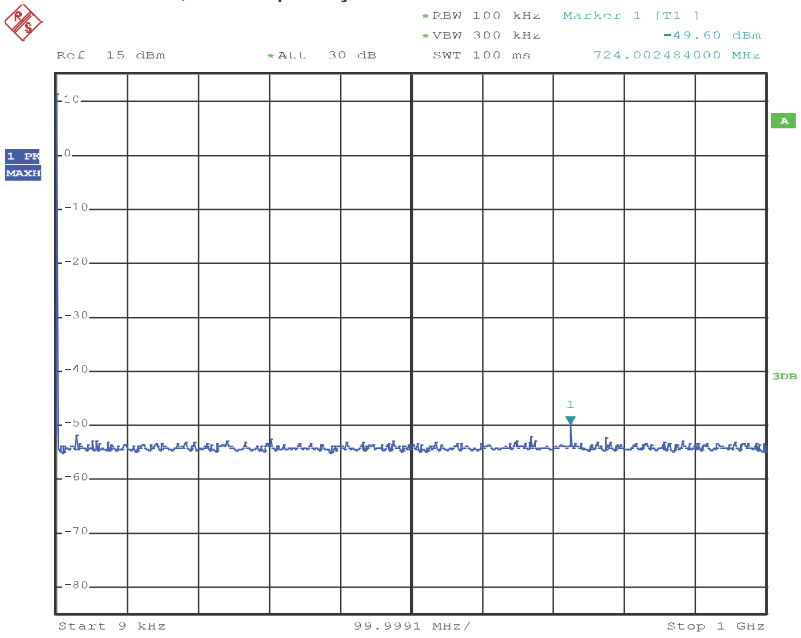


Date: 18.SEP.2020 10:17:07

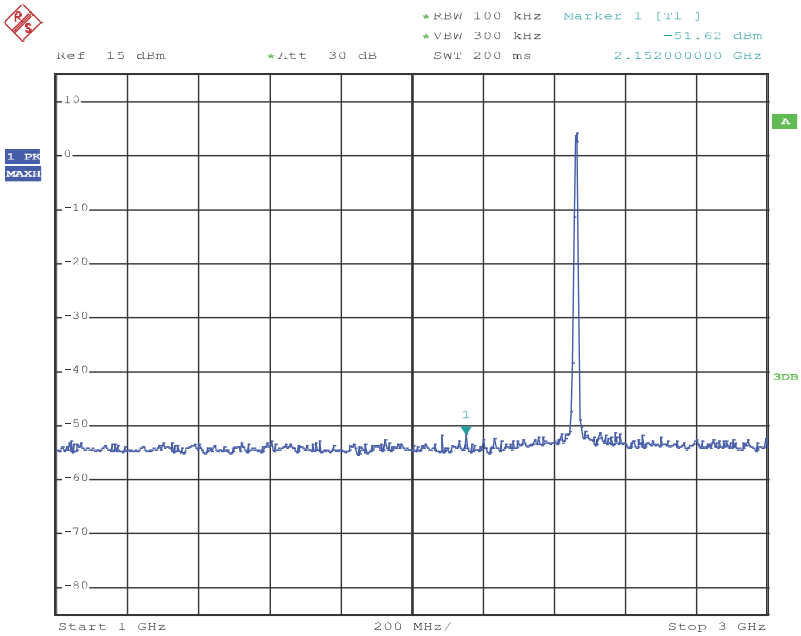


Date: 18.SEP.2020 10:19:02

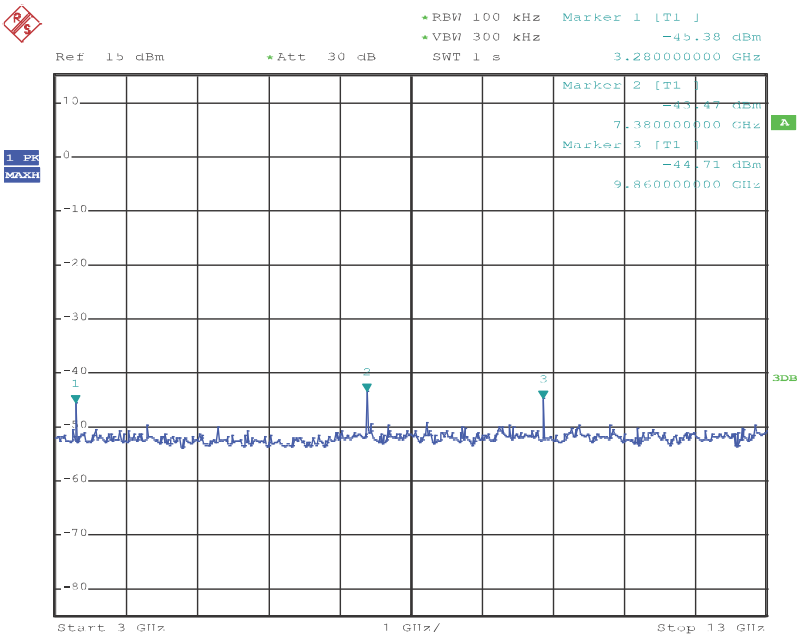
Mode: 802.11b, TX frequency: 2462MHz



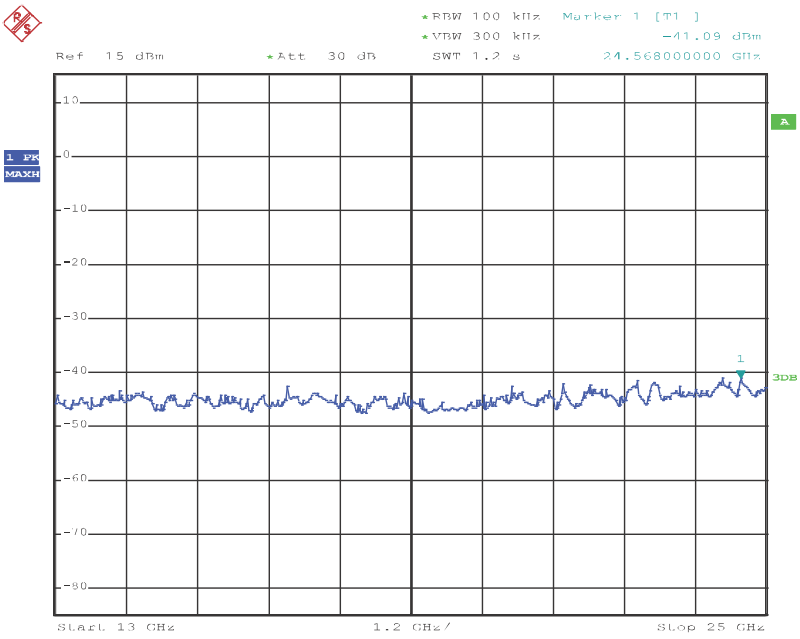
Date: 18.SEP.2020 10:23:10



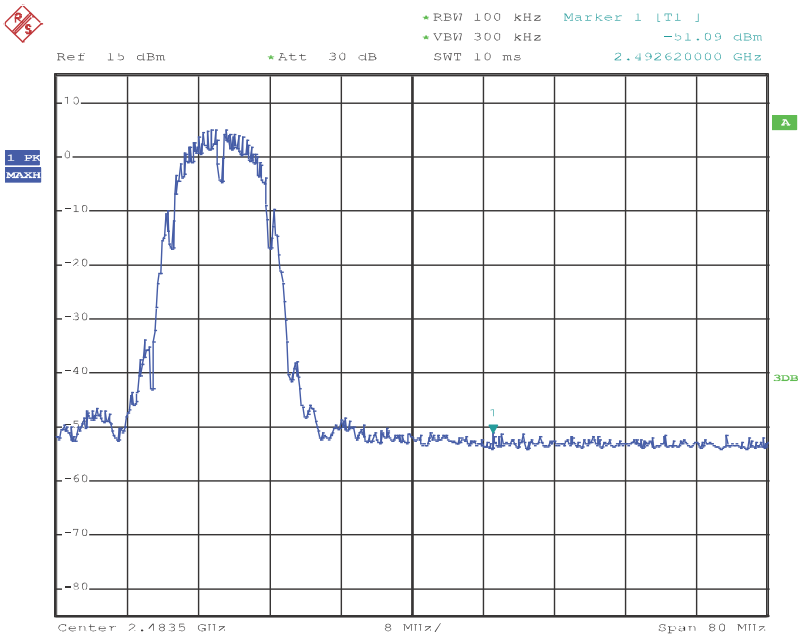
Date: 18.SEP.2020 10:24:47



Date: 18.SEP.2020 10:25:50

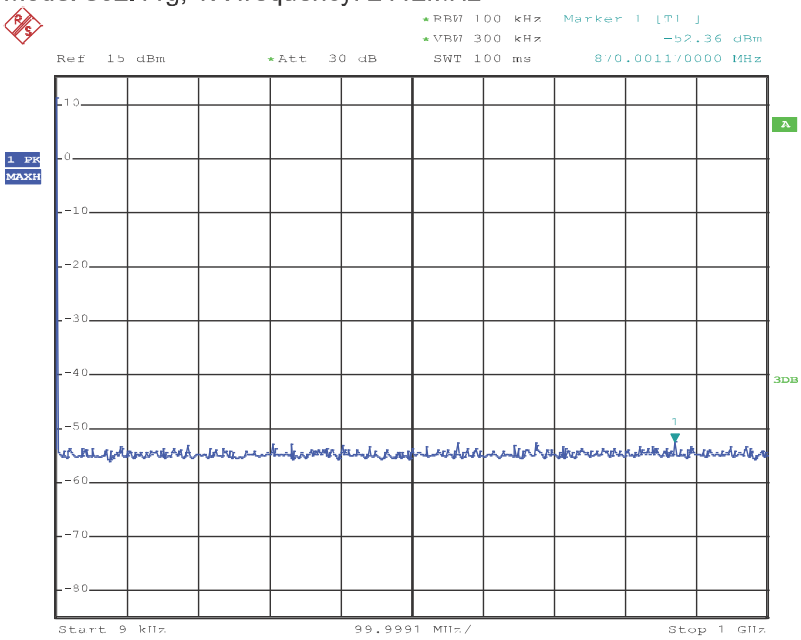


Date: 18.SEP.2020 10:27:06

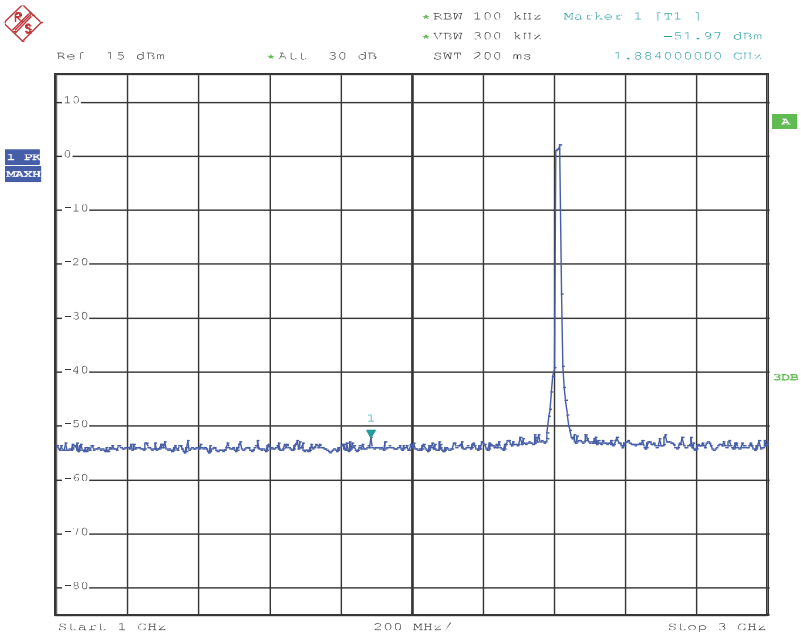


Date: 18.SEP.2020 09:42:23

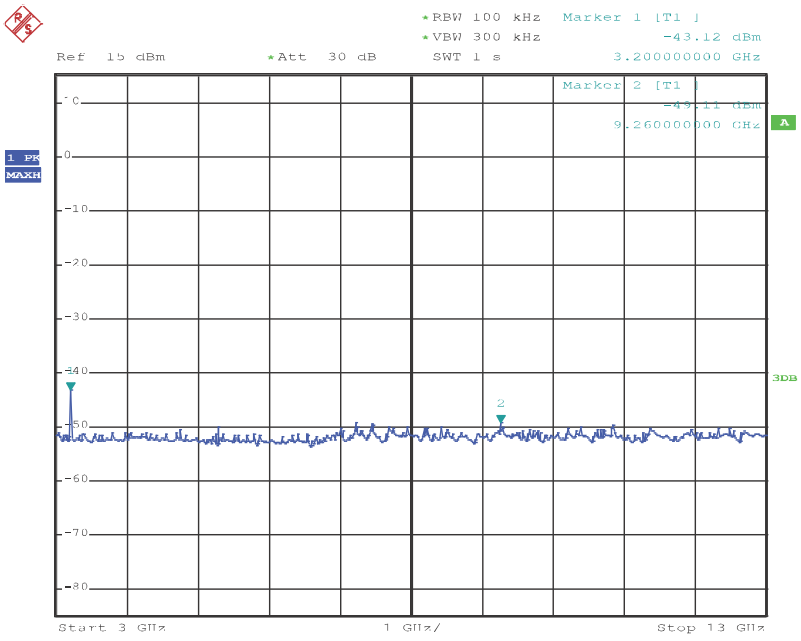
Mode: 802.11g, TX frequency: 2412MHz



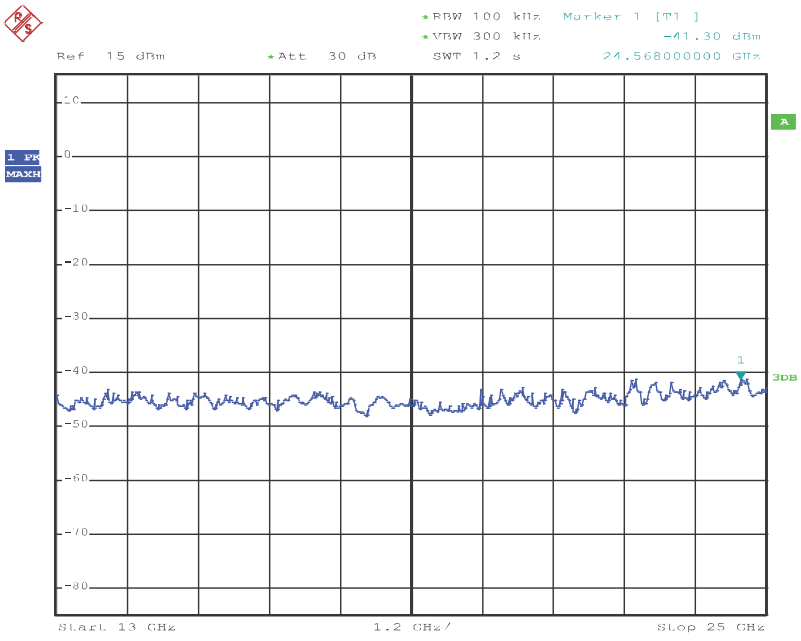
Date: 18.SEP.2020 10:29:22



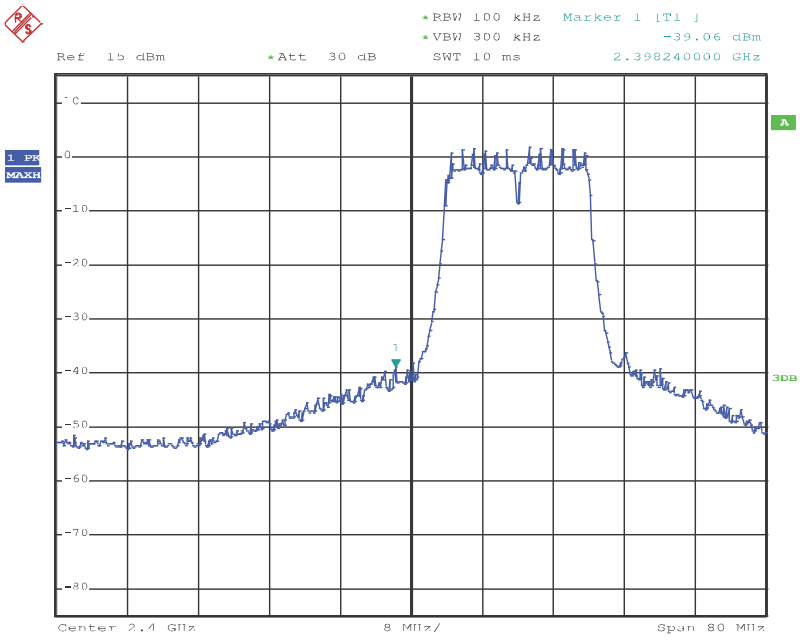
Date: 18.SEP.2020 10:31:28



Date: 18.SEP.2020 10:32:50

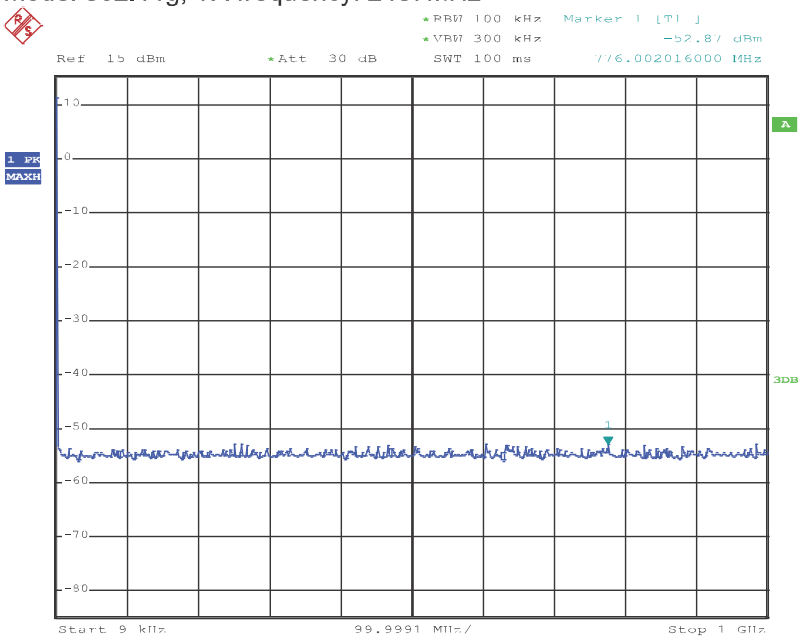


Date: 18.SEP.2020 10:33:42

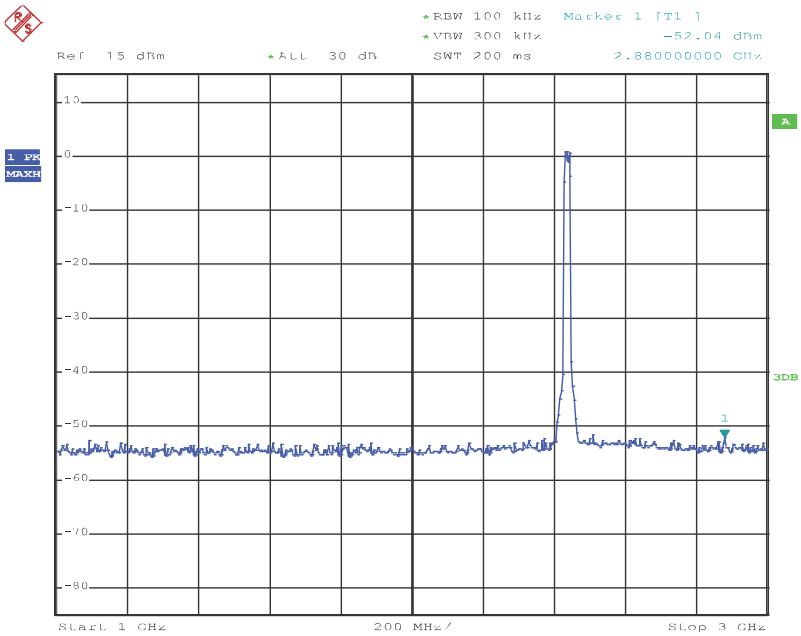


Date: 18.SEP.2020 10:46:09

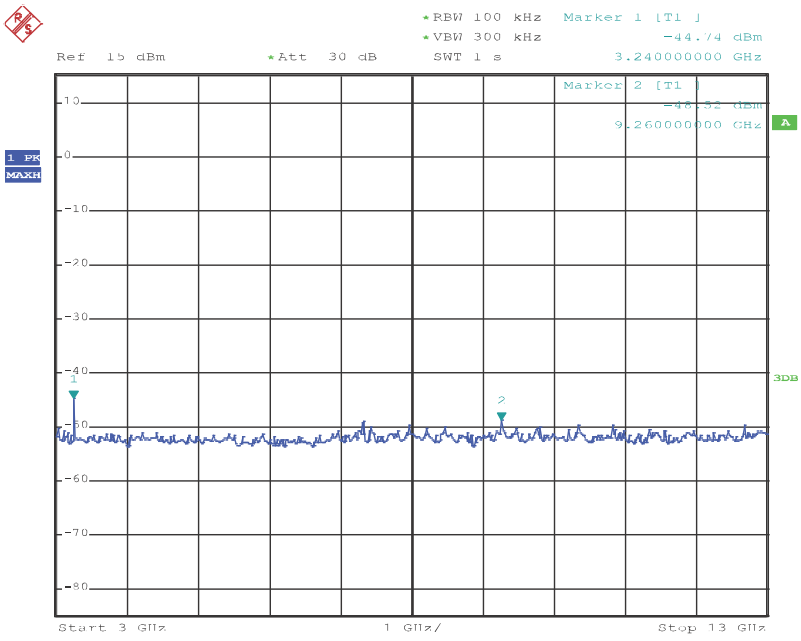
Mode: 802.11g, TX frequency: 2437MHz



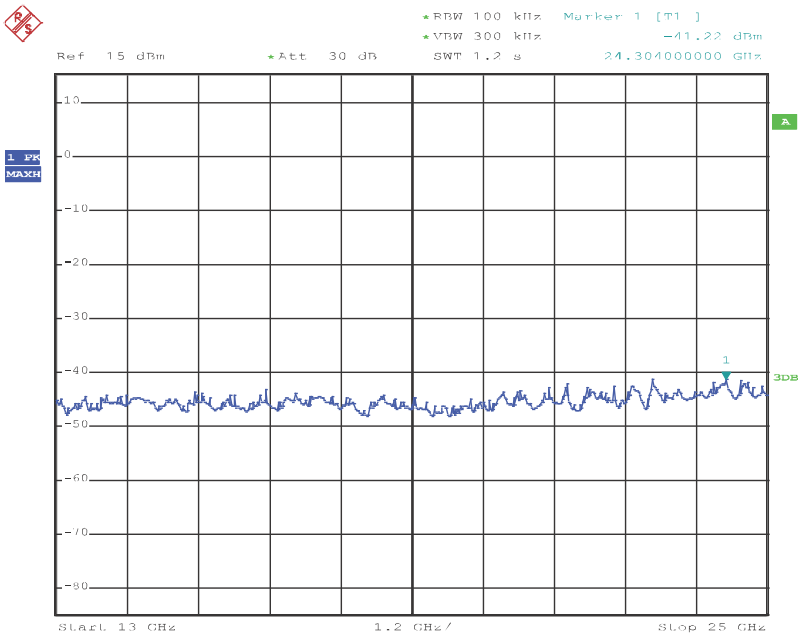
Date: 18.SEP.2020 10:35:15



Date: 18.SEP.2020 10:36:09

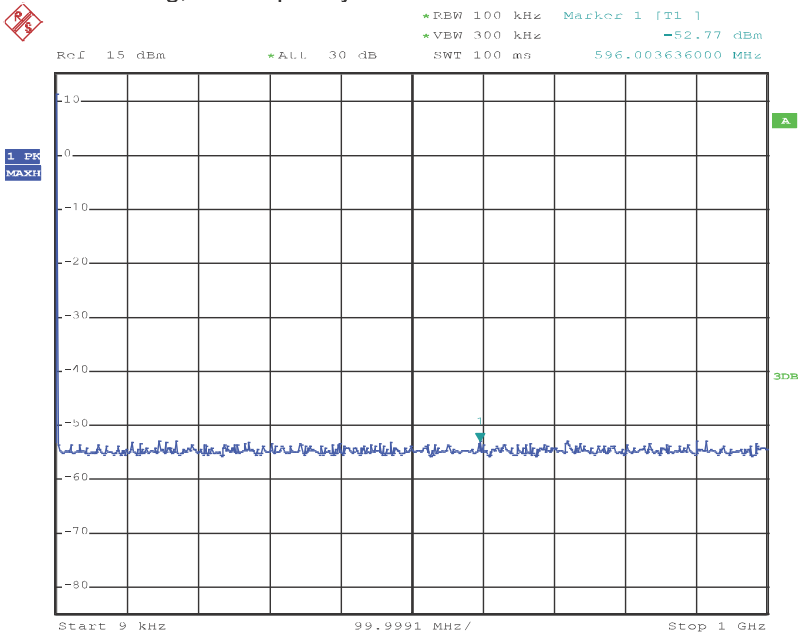


Date: 18.SEP.2020 10:37:09

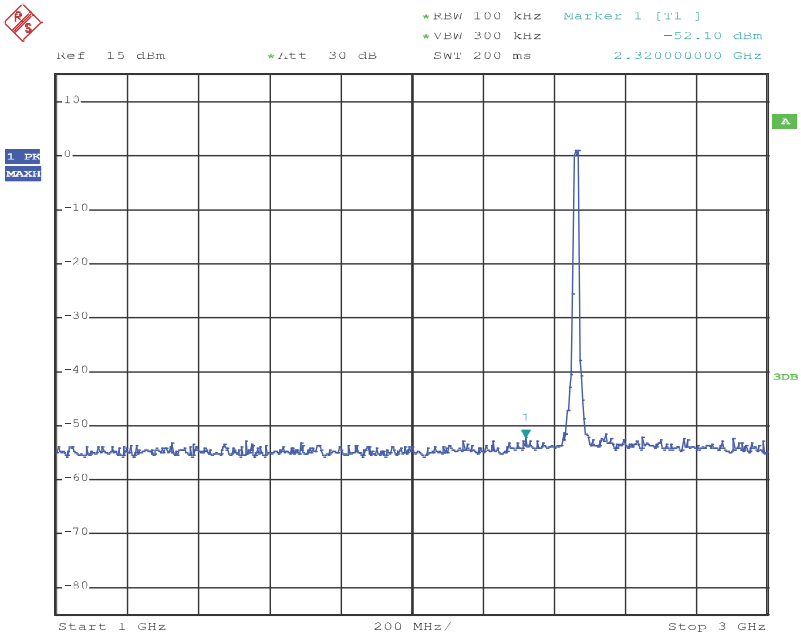


Date: 18.SEP.2020 10:37:41

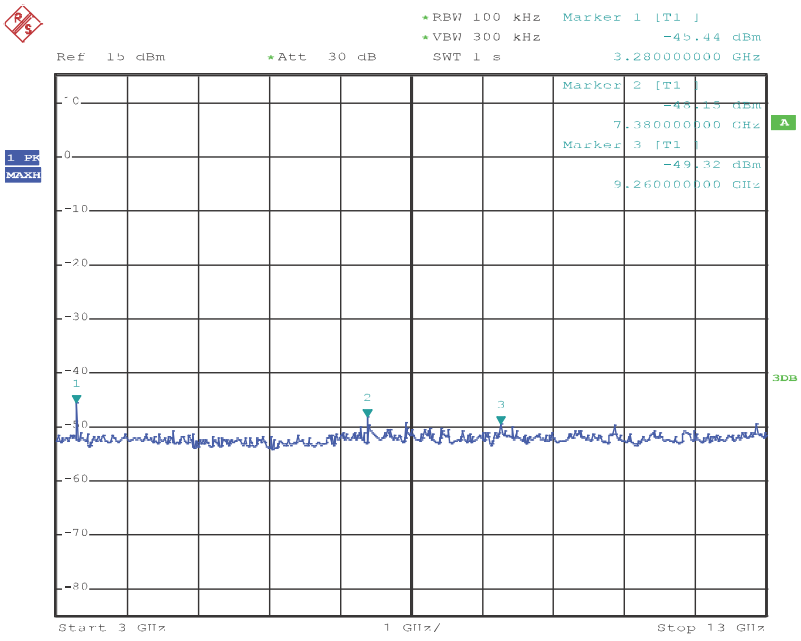
Mode: 802.11g, TX frequency: 2462MHz



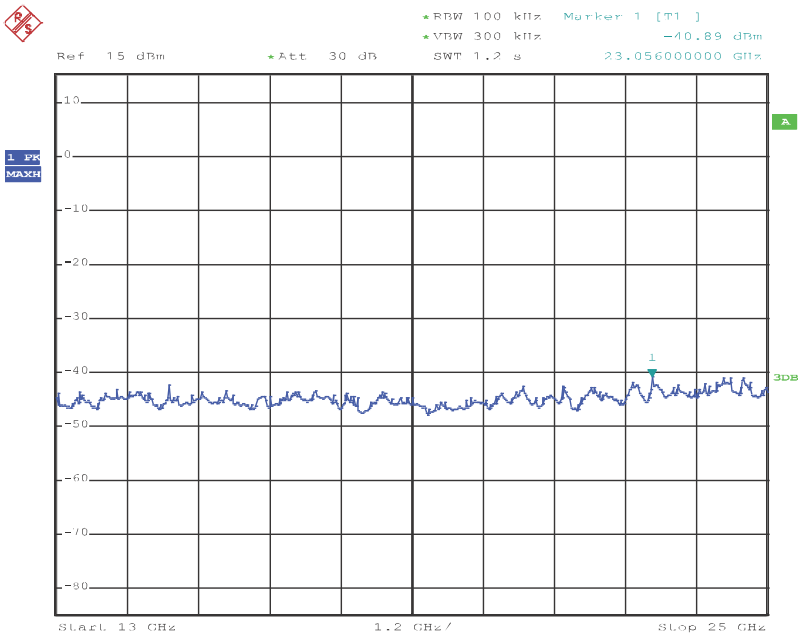
Date: 18.SEP.2020 10:39:37



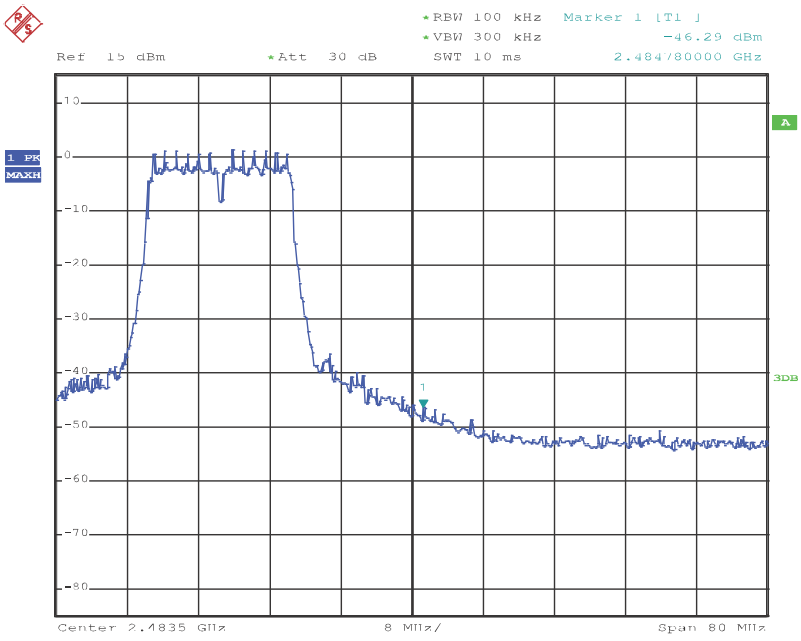
Date: 18.SEP.2020 10:40:33



Date: 18.SEP.2020 10:41:35

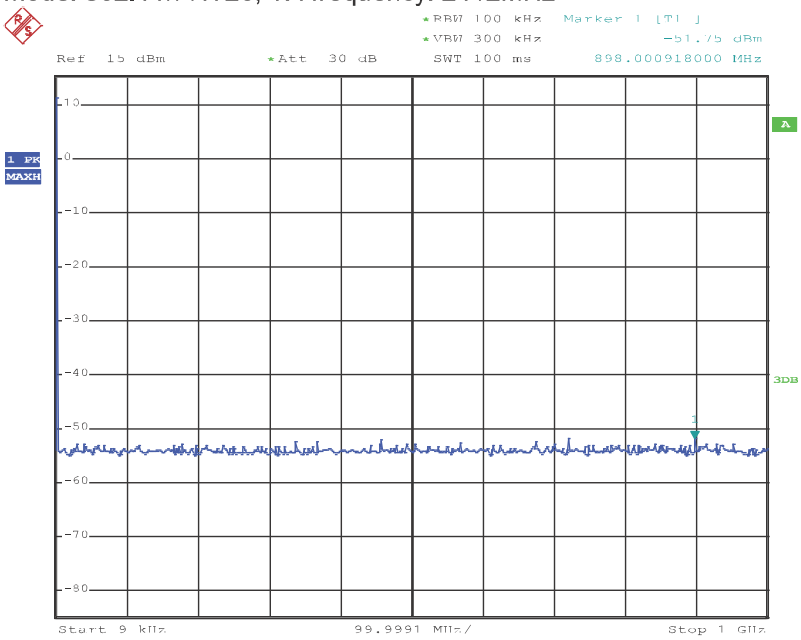


Date: 18.SEP.2020 10:42:56

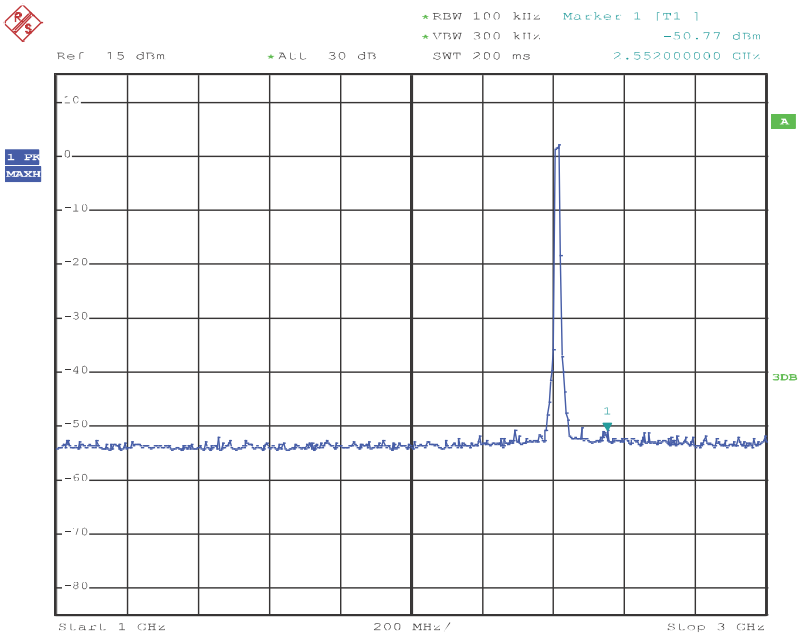


Date: 18.SEP.2020 10:44:26

Mode: 802.11n-HT20, TX frequency: 2412MHz



Date: 18.SEP.2020 11:04:18



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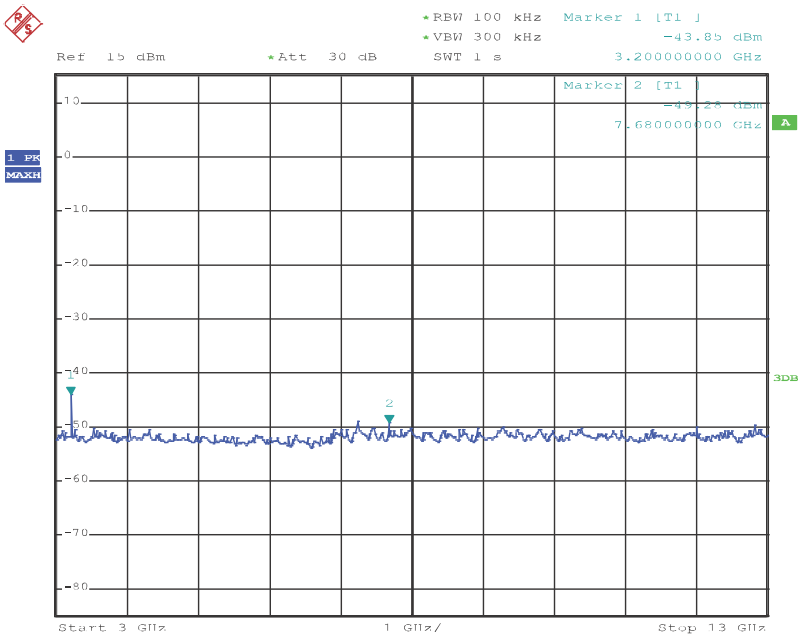

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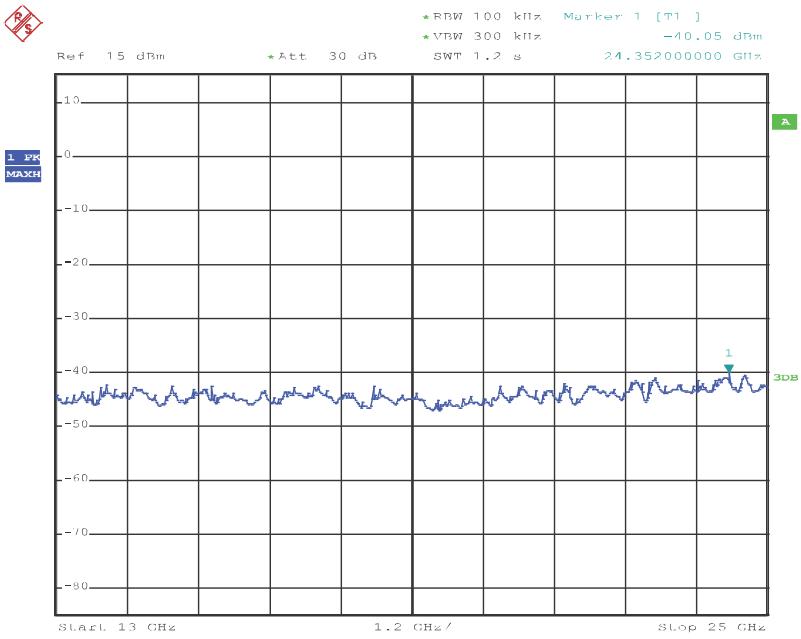

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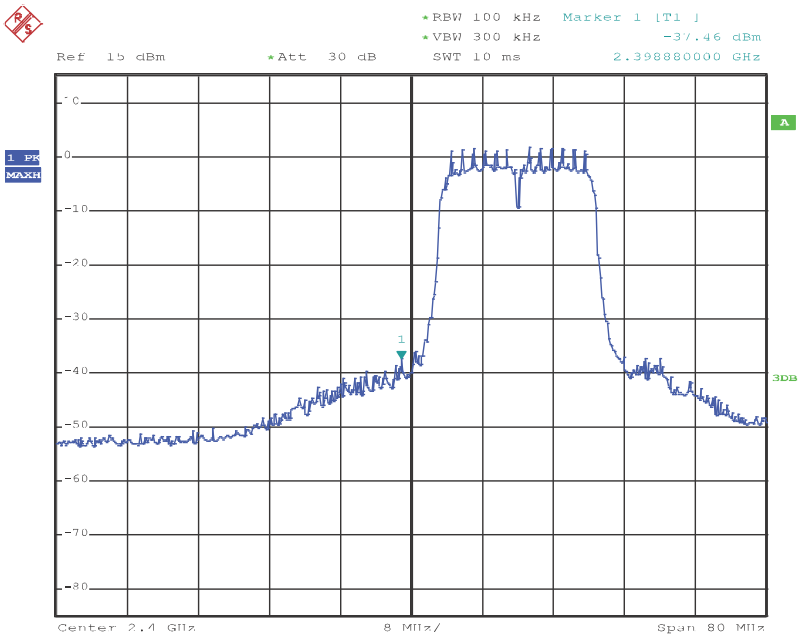
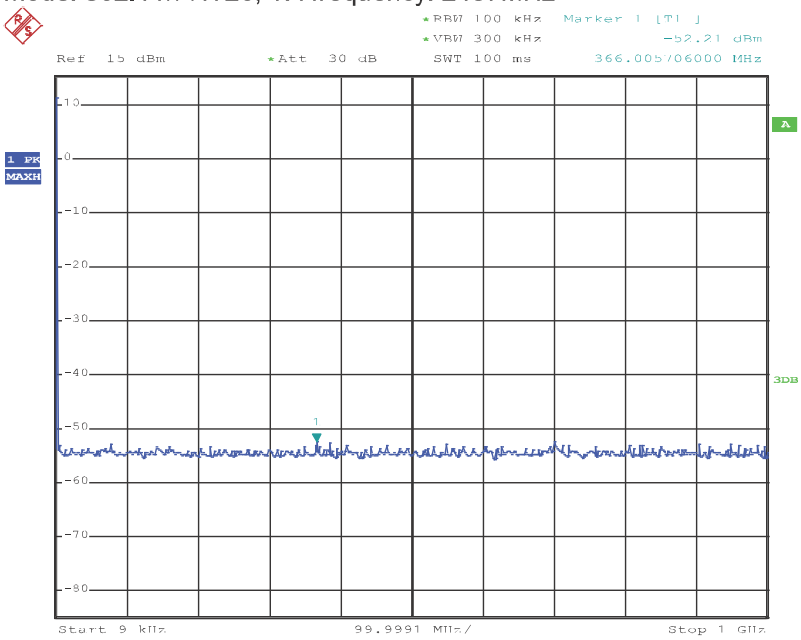


Date: 18.SEP.2020 11:01:05

Mode: 802.11n-HT20, TX frequency: 2437MHz



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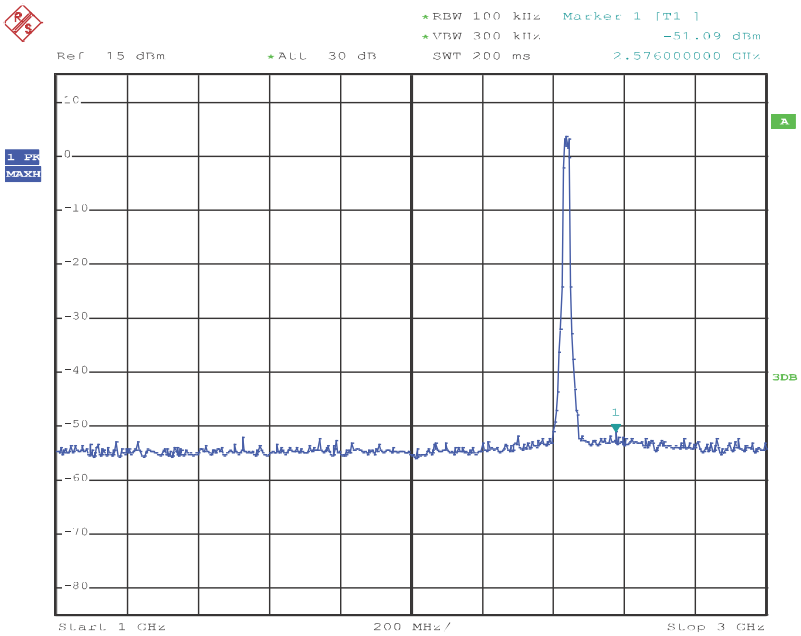

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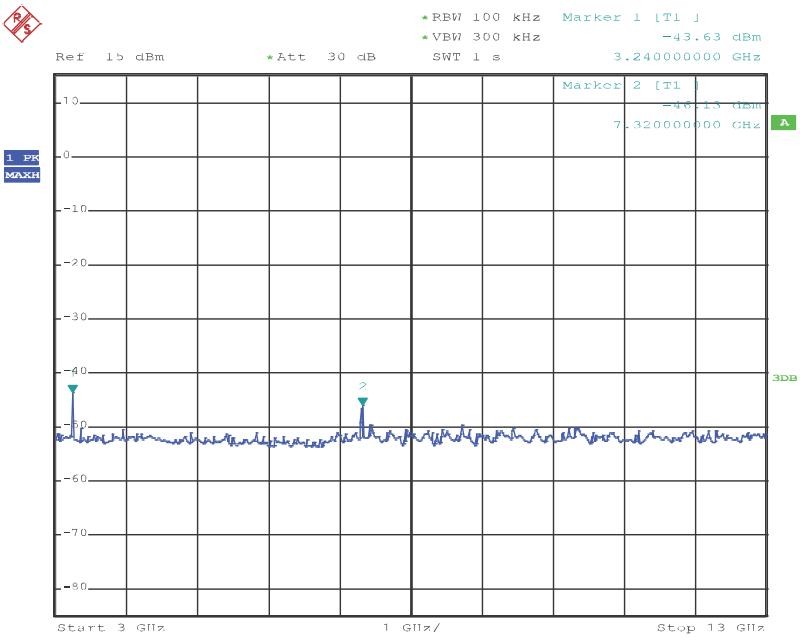

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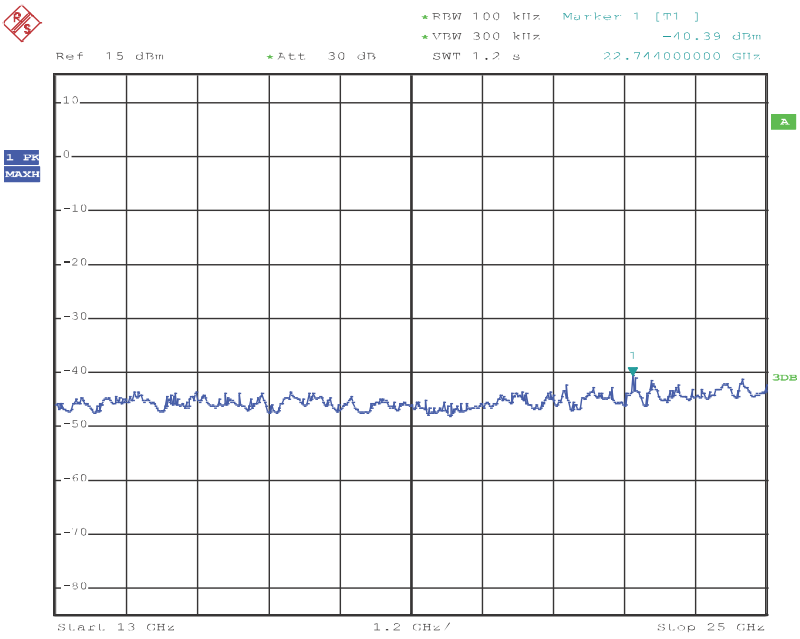

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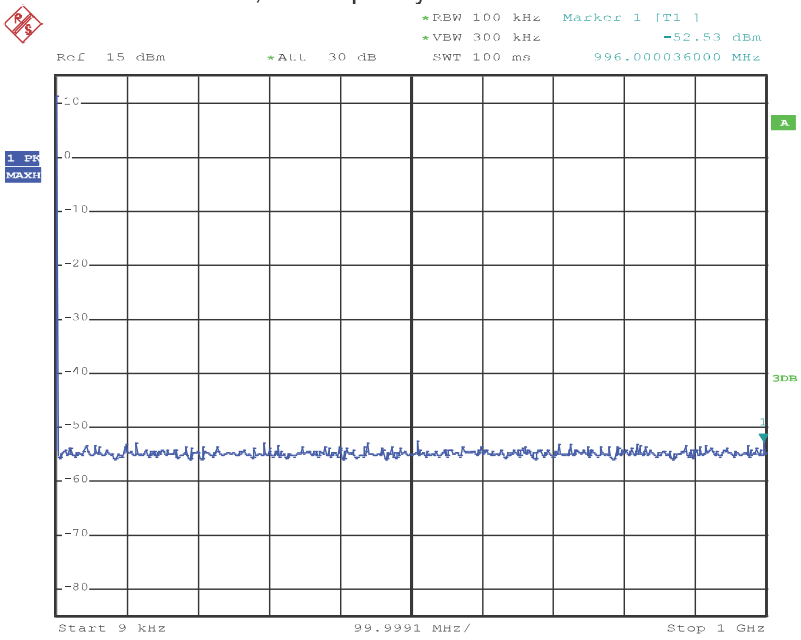
Mode: 802.11n-HT20, TX frequency: 2462MHz



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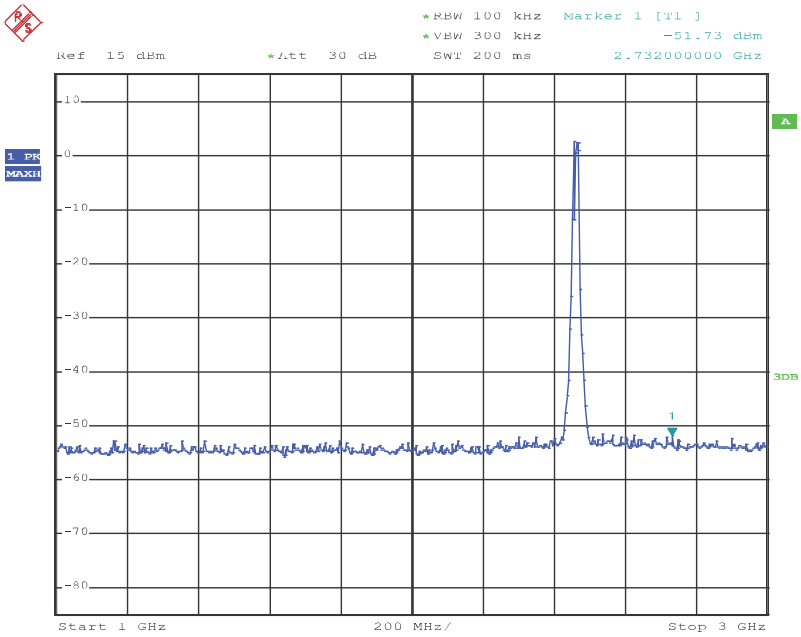

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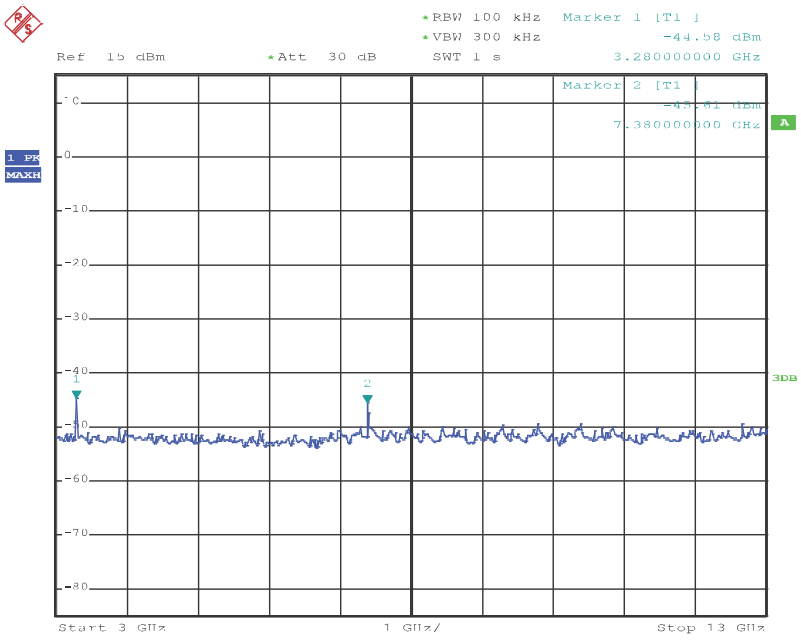

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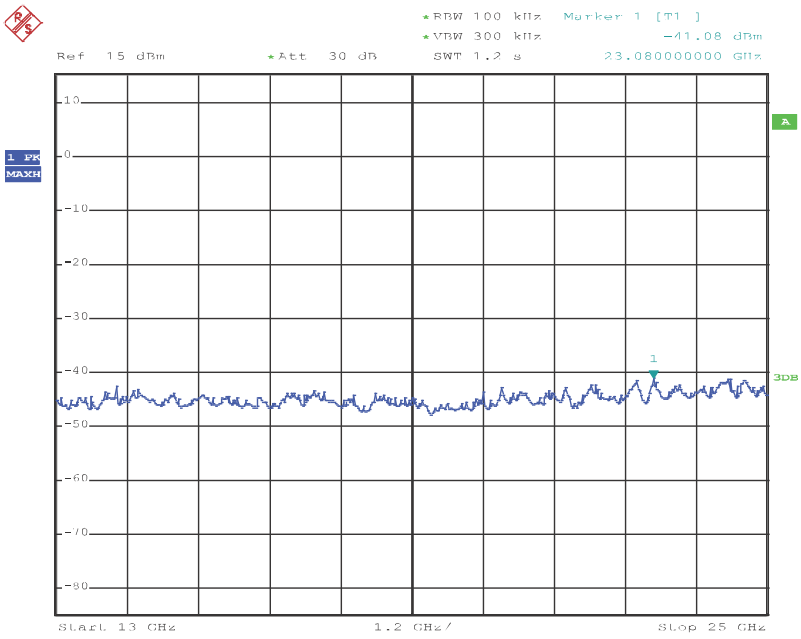

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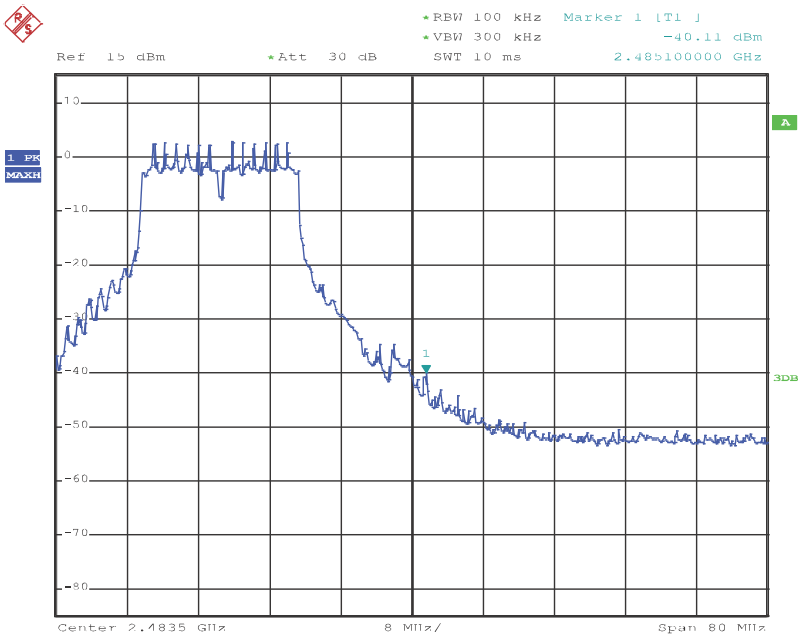

Date: 18.SEP.2020 13:32:32