

Prüfbericht - Nr.: <i>Test Report No.:</i>	50306743 001	Auftrags-Nr.: <i>Order No.:</i>	180110534	Seite 1 von 54 Page 1 of 54	
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	11.07.2019		
Auftraggeber: <i>Client:</i>	Monument Grill LLC 3 Atlantic Street, Plainsboro, NJ 08536, United States				
Prüfgegenstand: <i>Test item:</i>	Pellet Grill				
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	S1251801T, S1251701T, S2221501GT, S2221501T, S2261601T, S2261601GT, S2261601TP, S2261601GTP				
Auftrags-Inhalt: <i>Order content:</i>	TÜV Rheinland – FCC Service				
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209				
Wareneingangsdatum: <i>Date of receipt:</i>	11.09.2019				
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000990183-001				
Prüfzeitraum: <i>Testing period:</i>	12.09.2019-12.12.2019				
Ort der Prüfung: <i>Place of testing:</i>	Refer to section 1.1.				
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.				
Prüfergebnis*: <i>Test result*:</i>	Pass				
geprüft von / tested by:			kontrolliert von / reviewed by:		
18.12.2019 Season Yang/PE <i>Season Yang</i>			18.12.2019 Feng Liang/TC <i>Feng Liang</i>		
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
Sonstiges/ Other					
The Radiated Spurious Emission of this product are evaluated in this report which was additional tests as 50301400 001. Refer to page 5 for further information.					
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>			Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
*Legende: 1= Sehr gut 2= gut 3= befriedigend 4= ausreichend 5= mangelhaft P(ass)=entspricht o.g. Prüfgrundlage(n) F(ail)= entspricht 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					
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i>					

V04

TEST SUMMARY

4.1.1 ANTENNA REQUIREMENT

Result:

Pass

4.1.2 6DB BANDWIDTH MEASUREMENT

Result:

Pass

4.1.3 MAXIMUM CONDUCTED OUTPUT POWER

Result:

Pass

4.1.4 POWER SPECTRAL DENSITY

Result:

Pass

4.1.5 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

Result:

Pass

4.1.6 RADIATED SPURIOUS EMISSION, 30MHz - 1GHz

Result:

Pass

4.1.7 CONDUCTED EMISSION ON AC MAINS

Result:

Pass

Contents

1	TEST SITES	4
1.1	TEST FACILITIES	4
1.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS.....	4
1.3	MEASUREMENT UNCERTAINTY	4
2	GENERAL PRODUCT INFORMATION	5
2.1	PRODUCT FUNCTION AND INTENDED USE	5
2.2	RATINGS AND SYSTEM DETAILS.....	5
2.3	INDEPENDENT OPERATION MODES	6
2.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS	6
2.5	SUBMITTED DOCUMENTS	6
3	TEST SET-UP AND OPERATION MODES	6
3.1	PRINCIPLE OF CONFIGURATION SELECTION.....	6
3.2	TEST OPERATION AND TEST SOFTWARE.....	6
3.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	7
3.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE.....	7
3.5	TEST SET-UP	7
4	TEST RESULTS.....	8
4.1	TRANSMITTER REQUIREMENT & TEST SUITES.....	8
4.1.1	<i>Antenna Requirement.....</i>	<i>8</i>
4.1.2	<i>6dB Bandwidth Measurement</i>	<i>9</i>
4.1.3	<i>Maximum Conducted Output Power.....</i>	<i>15</i>
4.1.4	<i>Power Spectral Density</i>	<i>22</i>
4.1.5	<i>Conducted Spurious Emissions Measured in 100 kHz Bandwidth.....</i>	<i>28</i>
4.1.6	<i>Radiated Spurious Emission, 30MHz - 1GHz.....</i>	<i>36</i>
4.1.7	<i>Conducted Emission on AC Mains.....</i>	<i>46</i>
5	PHOTOGRAPHS OF THE TEST SET-UP	50
6	LIST OF TABLES.....	54
7	LIST OF FIGURES.....	54
8	LIST OF PHOTOGRAPHS	54

1 Test Sites

1.1 Test Facilities

Laboratory: TÜV Rheinland /CCIC(Ningbo) Co., Ltd.

**1st Floor, Building 11, Scholar Innovation Park, No.1188 Zhongguan Road,
Zhenhai District, Ningbo 315200 P.R. China.**

The used test equipment is in accordance with CISPR 16-1 series standards for measurement of radio interference.

1.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

No.	Equipment	Model	Inventory no.	Last cal. date	Cal. due date
1.	EMI test receiver	ESR7	101929	2018.11.26	2019.11.25
2.	EMI test receiver	ESR7	101929	2019.11.25	2020.11.24
3.	Spectrum analyzer	FSV40	101412	2018.11.26	2019.11.25
4.	Spectrum analyzer	FSV40	101412	2019.11.25	2020.11.24
5.	Bilog Antenna	CBL6112D	49033	2018.04.13	2021.04.12
6.	EMI test receiver	ESR3	102331	2018.11.26	2019.11.25
7.	EMI test receiver	ESR3	102331	2019.11.25	2020.11.24
8.	LISN	ENV216	102250	2018.11.26	2019.11.25
9.	LISN	ENV216	102250	2019.11.25	2020.11.24

1.3 Measurement Uncertainty

Test Item	Expanded Measurement Uncertainty (k=2)
Conducted Emission (9-150kHz)	3.70dB
Conducted Emission (150k-30MHz)	3.30dB
Radiated Emission (30-1000MHz)	4.52dB
Radiated Emission (1-18GHz)	4.37dB

2 General Product Information

2.1 Product Function and Intended Use

The EUT is a Pellet Grill. Through the WiFi technology, using dedicated app to set up and control the Pellet Grill. For more detail information, refer to the user's manual.

2.2 Ratings and System Details

Technical Specification	Value
Kind of Equipment	: Pellet Grill
Type Designation	: S1251801T, S1251701T, S2221501GT, S2221501T, S2261601T, S2261601GT, S2261601TP, S2261601GTP
Operating Voltage	: AC 120V/60Hz
Rated power	: 0.25kW
Protection Class	: Class I
Operating Frequency band	: 2400 – 2483.5MHz
Technology	: 802.11b: DSSS : 802.11g/n: OFDM
Data Rate	: 802.11b: 11 Mbps max. : 802.11g: 54 Mbps max. : 802.11n (HT20): MCS7 max.
Antenna Type	: Internal antenna
Peak Antenna Gain	: 3.0dBi

All models are identical in RF characteristics and have the same electric circuit. The differences among them are in the appearances and mechanical aspects. Therefore all tests were performed on the model S1251801T. Refer to the user's manual for further information.

Channel List for 802.11b, 802.11g and 802.11n-HT20 mode:

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

EUT was tested with Channel 1, 6 and 11.

Power Setting:

MODE	Frequency(MHz)	Power Setting
b	2412	0
	2437	0
	2462	0

g	2412	20
	2437	20
	2462	20
n(HT20)	2412	20
	2437	20
	2462	20

2.3 Independent Operation Modes

The basic operation modes are: “On” and “Off” modes. Refer to the user’s manual for further information.

2.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit diagram for further information.

2.5 Submitted Documents

Circuit diagram, PCB layout, Labels, user’s manual, etc.

3 Test Set-up and Operation Modes

3.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

3.2 Test Operation and Test Software

During testing, 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.

All testing were performed according to the procedures in ANSI C63.10: 2013.

Test Software EMC32 V10.30 was used in the radiated emission test.
EUT Exercise Software: SecureCRT (RF test tool).

3.3 Special Accessories and Auxiliary Equipment

Description	Manufacturer	Model No.
notebook	Lenovo	T420

3.4 Countermeasures to achieve EMC Compliance

The tested sample contained noise suppression components as specified in the circuit diagram. No special measure is employed to achieve the requirement.

3.5 Test set-up

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

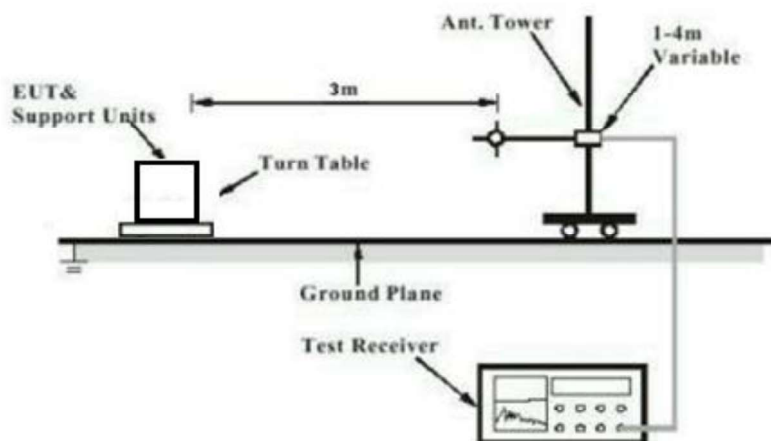
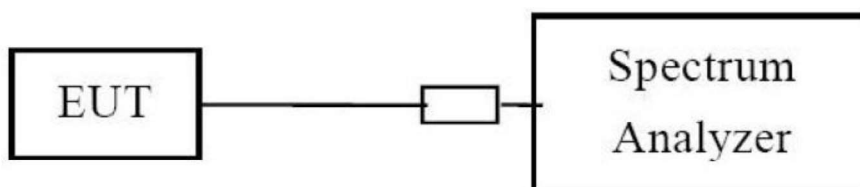


Diagram of Measurement Configuration for Conducted Transmitter Measurement



4 Test Results

4.1 Transmitter Requirement & Test Suites

4.1.1 Antenna Requirement

Result:

Pass

Test Specification

Test standard

Limits

: FCC Part 15.247(b)(4) and Part 15.203

: the use of antennas with directional gains that
do not exceed 6dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 3dBi, and the antenna must be professionally installed and permanently attached in the product.

Therefore the EUT is considered sufficient to comply with the provision.

For more details, refer to EUT photos.

4.1.2 6dB Bandwidth Measurement

Result:

Pass

Test Specification

Test standard : FCC Part 15.247(a)(2)
Basic standard : ANSI C63.10: 2013
Limits : At least 500kHz
Kind of test site : Shielded Room

Test Setup

Date of testing : 2019.09.12
Input voltage : AC 120V, 60Hz
Operational mode : On, WIFI b/g/n-HT20
Test channel : Low, Mid, High
Temperature : 23°C
Relative humidity : 64%
Atmospheric pressure : 101 kPa

Table 2: Test result of 6dB Bandwidth,

802.11b

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low Channel	2412	9.03	500	Pass
Mid Channel	2437	9.03	500	Pass
High Channel	2462	8.05	500	Pass

802.11g

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low Channel	2412	15.11	500	Pass
Mid Channel	2437	15.11	500	Pass
High Channel	2462	15.14	500	Pass

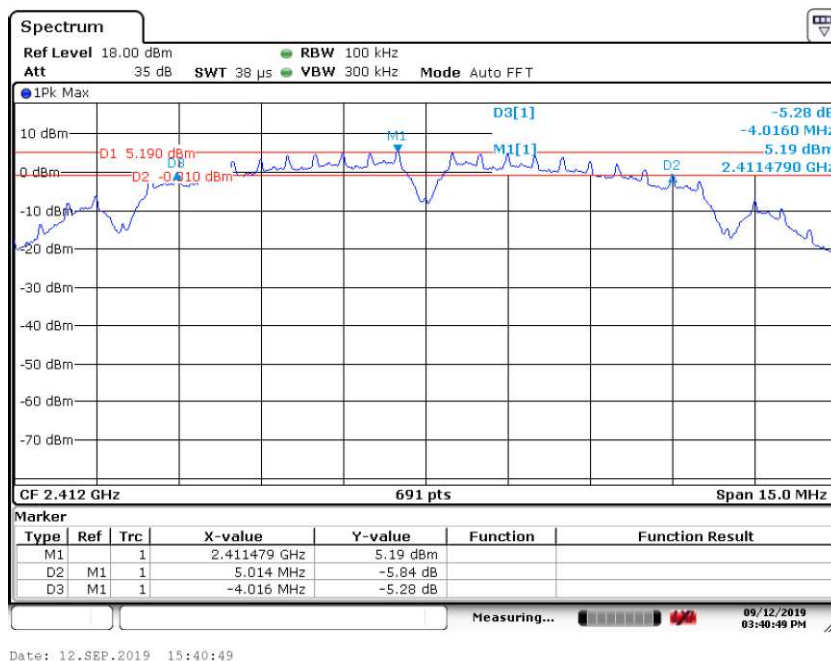
802.11n-HT20

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Limit (kHz)	Result
Low Channel	2412	15.11	500	Pass
Mid Channel	2437	15.11	500	Pass
High Channel	2462	15.14	500	Pass

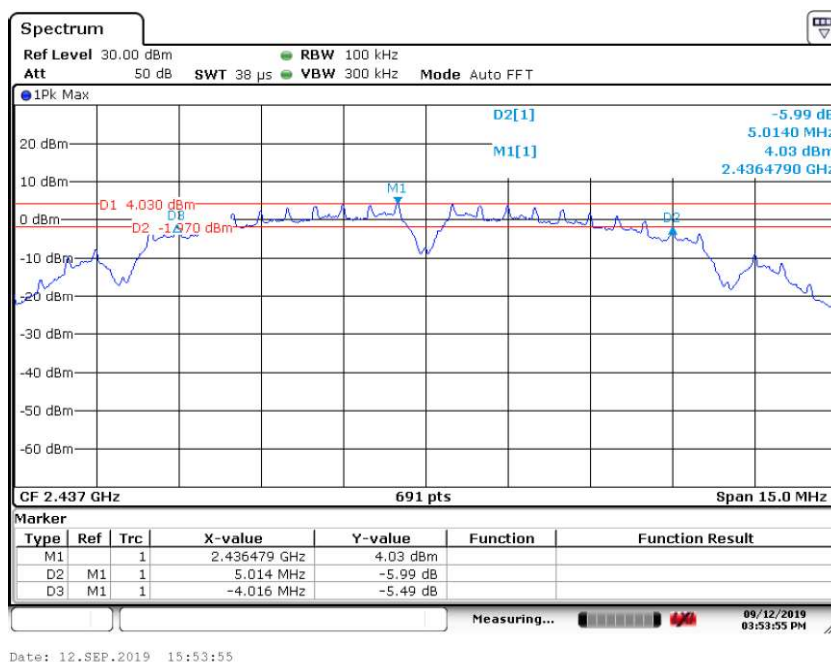
Figure 1: 6dB Bandwidth Measurement

802.11b

Low Channel: 2412MHz



Mid Channel: 2437MHz



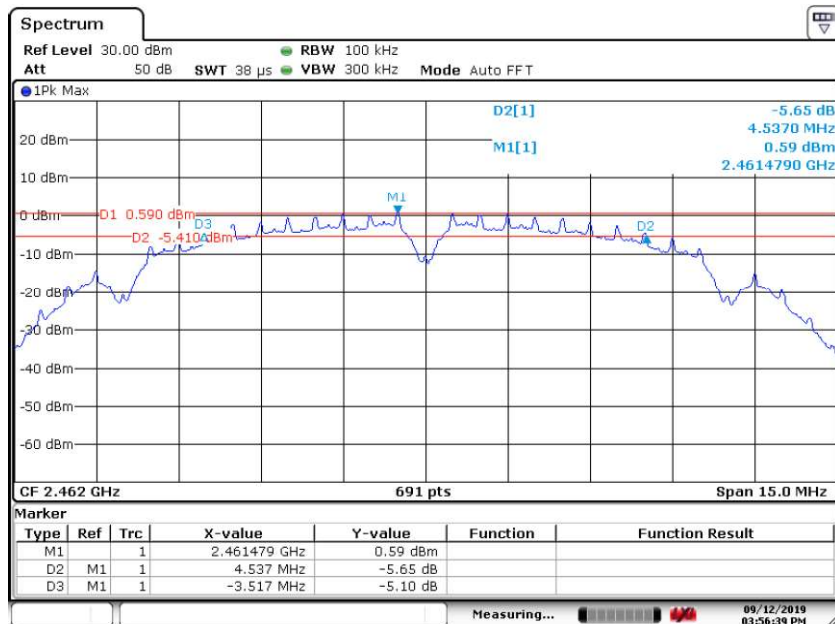
Prüfbericht - Nr.: 50306743 001

Test Report No.:

Seite 11 von 54

Page 11 of 54

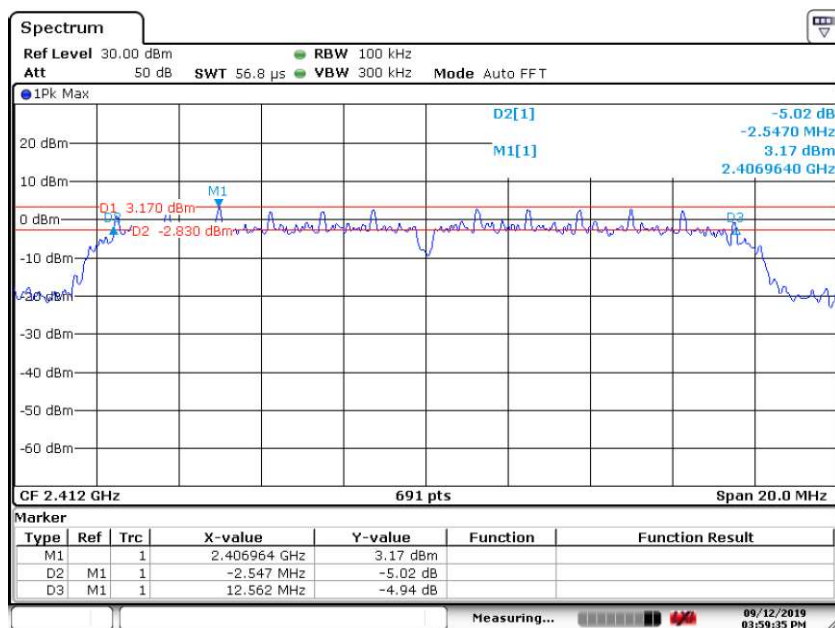
High Channel: 2462MHz



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802.11g

Low Channel: 2412MHz

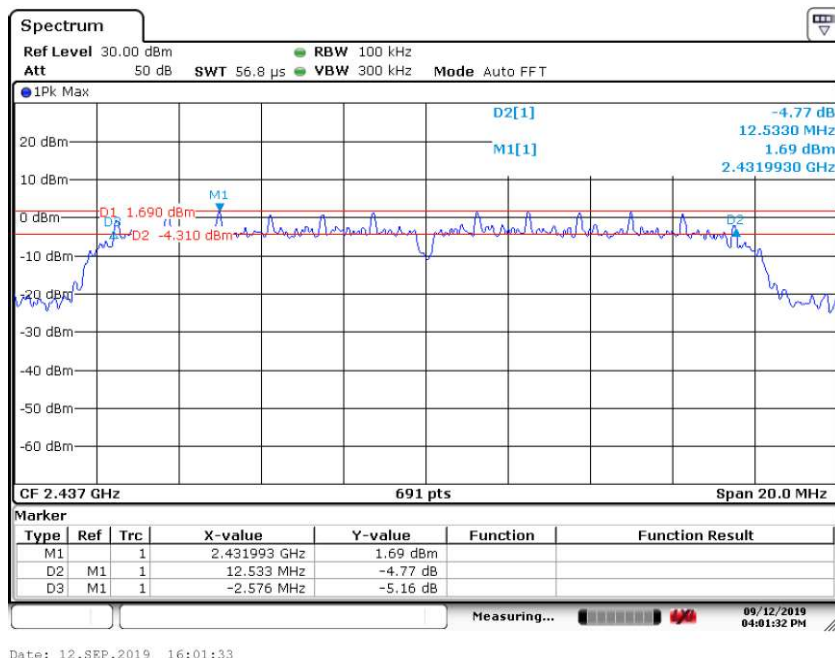


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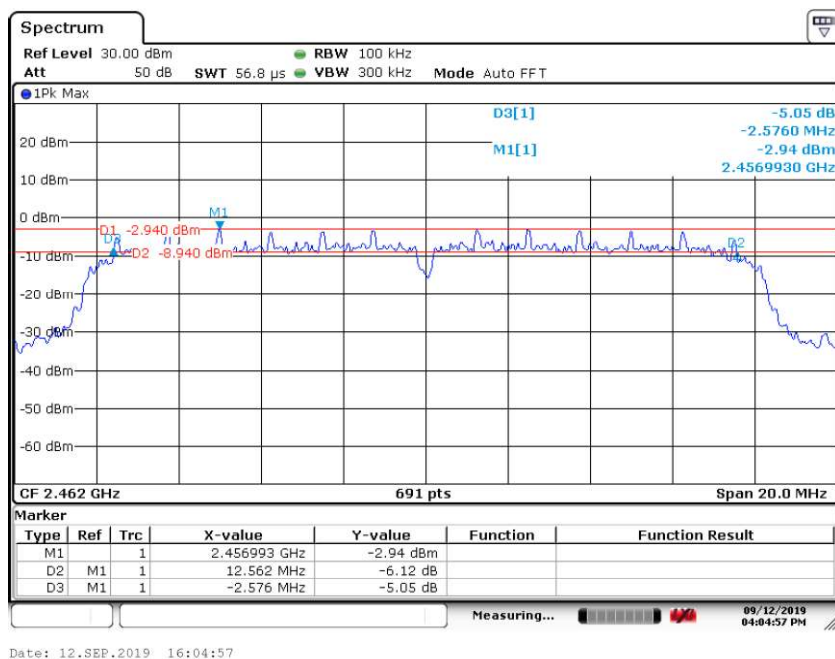
Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 12 von 54
Page 12 of 54

Mid Channel: 2437MHz



High Channel: 2462MHz



Prüfbericht - Nr.: 50306743 001

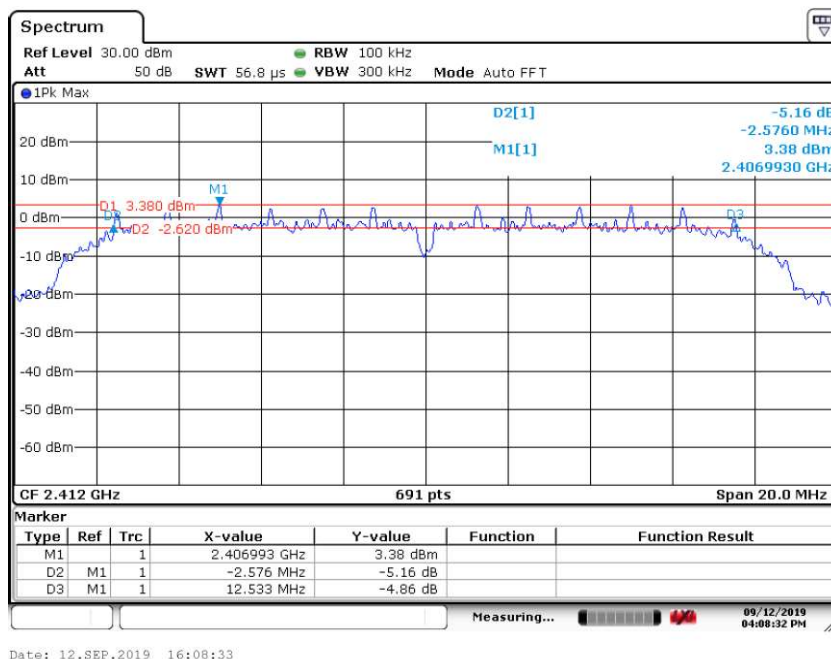
Test Report No.:

Seite 13 von 54

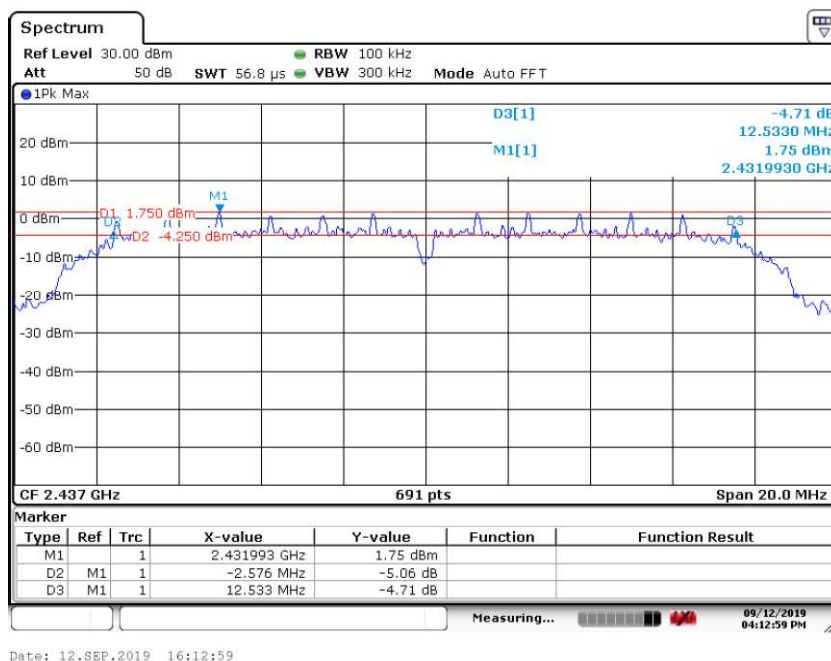
Page 13 of 54

802.11n-HT20

Low Channel: 2412MHz



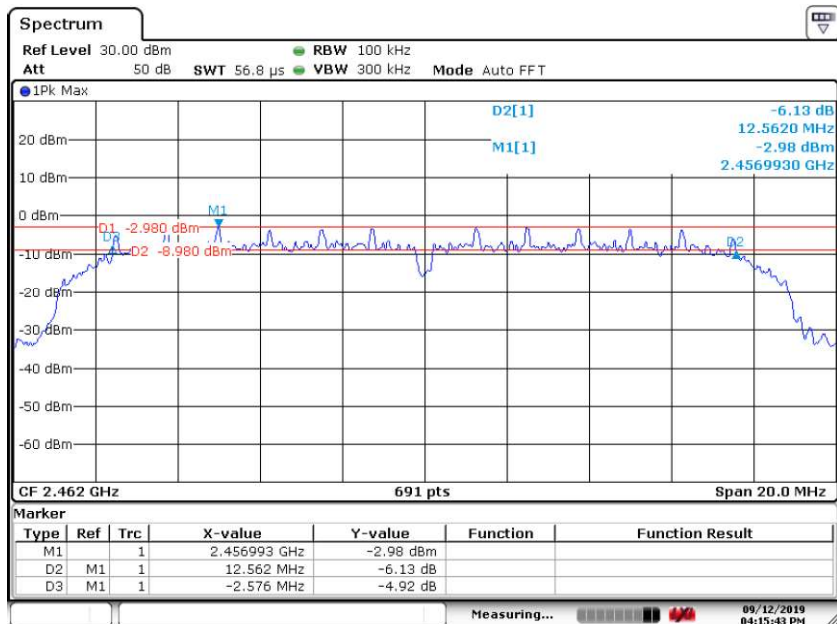
Mid Channel: 2437MHz



Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 14 von 54
Page 14 of 54

High Channel: 2462MHz



Date: 12.SEP.2019 16:15:43

Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 15 von 54
Page 15 of 54

4.1.3 Maximum Conducted Output Power

Result:

Pass

Test Specification
Test standard : FCC Part 15.247(b)(3)
Basic standard : ANSI C63.10: 2013
Limits : For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz bands: 1 Watt (30dBm)
Kind of test site : Shielded Room

Test Setup

Date of testing : 2019.12.12
Input voltage : AC 120V, 60Hz
Operational mode : On, WIFI b/g/n-HT20
Test channel : Low, Mid, High
Temperature : 20°C
Relative humidity : 50%
Atmospheric pressure : 101 kPa

Table 3: Test result of Maximum Conducted Output Power

802.11b

Duty Cycle: 89.5%, $10 \log (1/x)=0.48$

Channel	Channel Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low Channel	2412	22.21	30
Mid Channel	2437	22.03	30
High Channel	2462	22.75	30

802.11g

Duty Cycle: 85%, $10 \log (1/x)=0.7$

Channel	Channel Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
Low Channel	2412	17.19	30
Mid Channel	2437	17.20	30
High Channel	2462	17.94	30

802.11n-HT20

Duty Cycle: 85.5%, $10 \log (1/x)=0.68$

Channel	Channel Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
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Prüfbericht - Nr.: 50306743 001

Test Report No.:

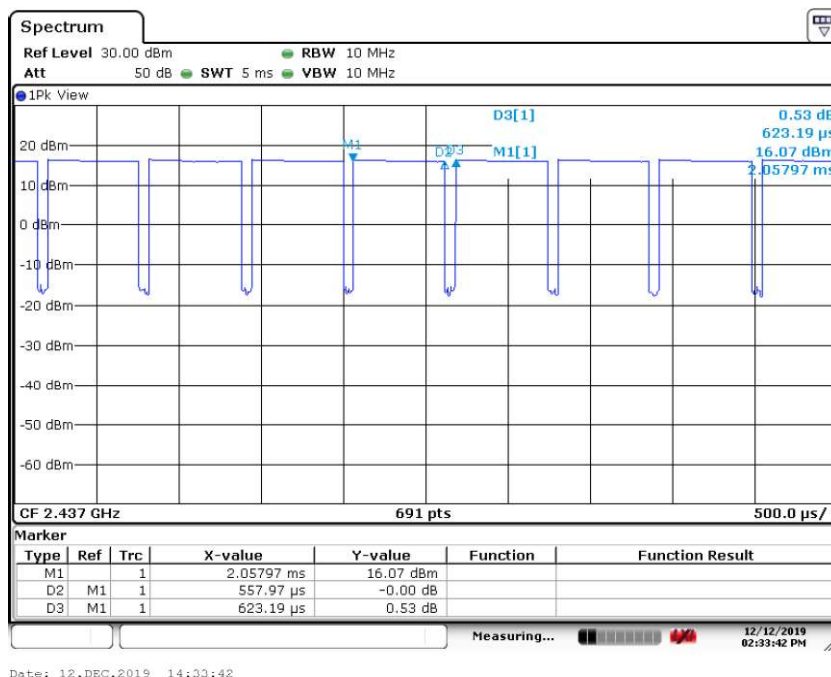
Seite 16 von 54

Page 16 of 54

Low Channel	2412	17.10	30
Mid Channel	2437	16.99	30
High Channel	2462	17.61	30

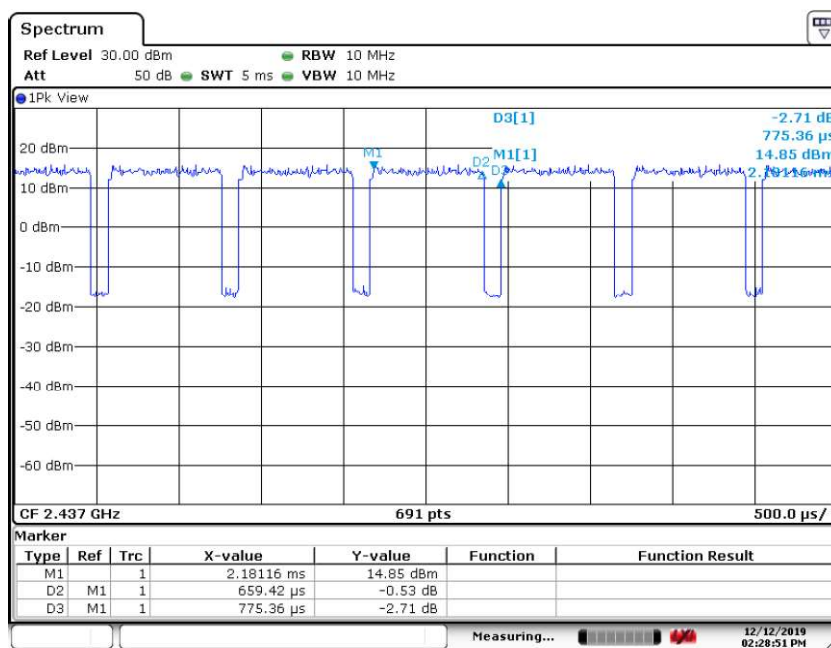
Figure 2: Duty Cycle

802.11b



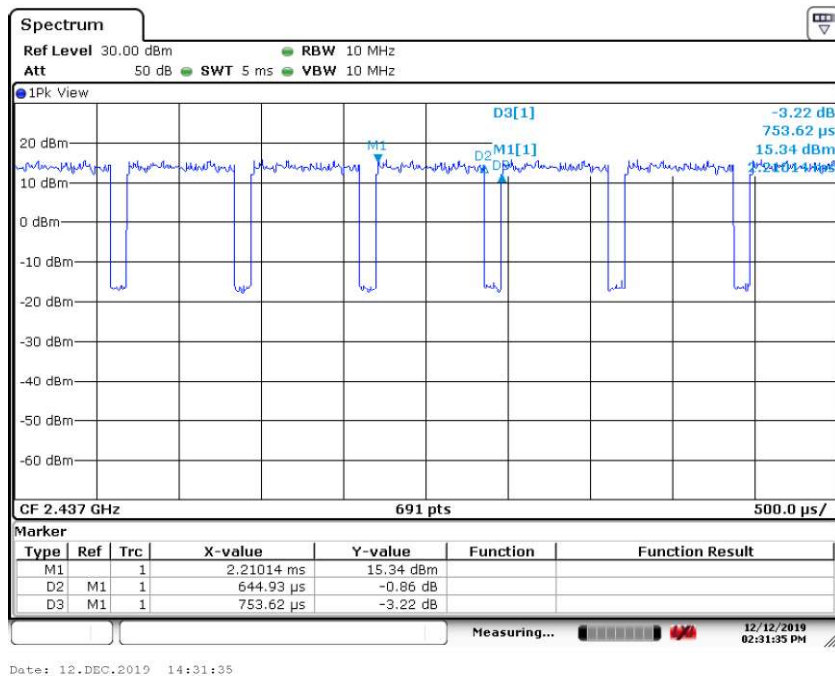
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802.11g



Date: 12.DEC.2019 14:28:51

802.11n-HT20

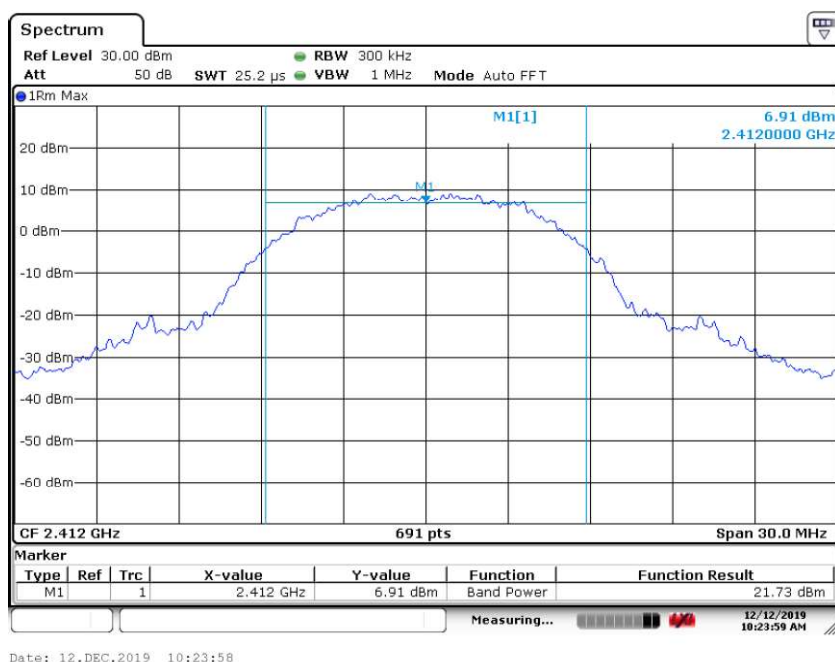


Date: 12.DEC.2019 14:31:35

Figure 3: Maximum Conducted Output Power

802.11b

Low Channel: 2412MHz

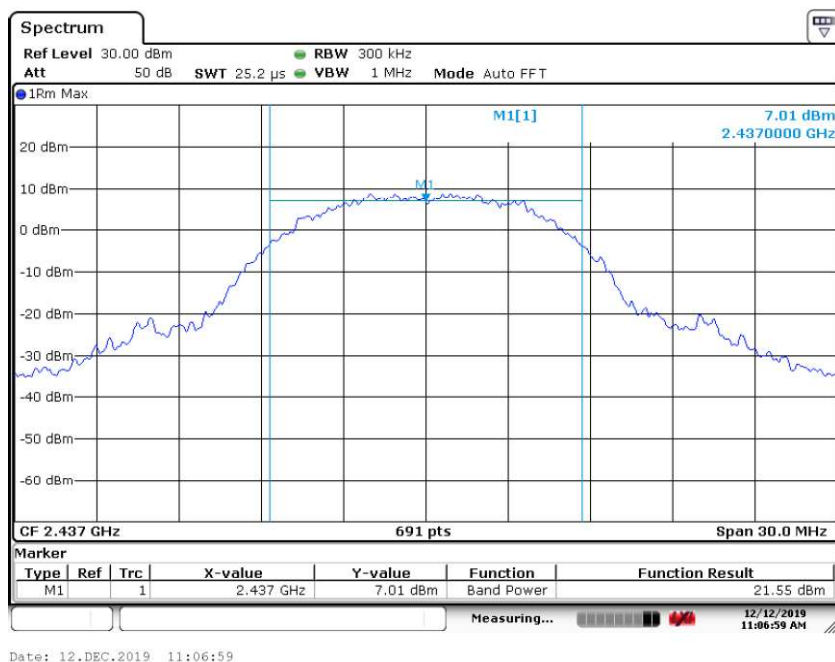


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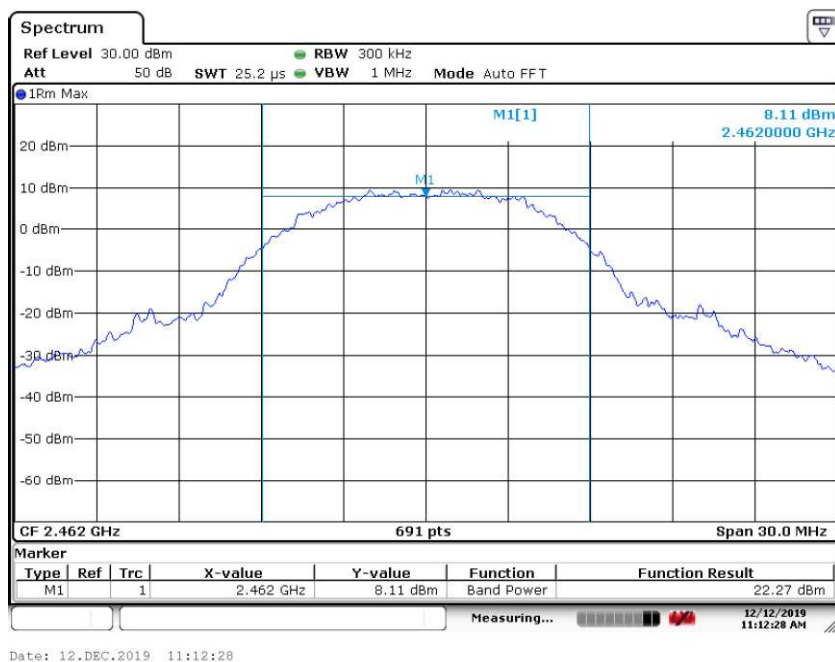
Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 18 von 54
Page 18 of 54

Mid Channel: 2437MHz



High Channel: 2462MHz



Prüfbericht - Nr.: 50306743 001

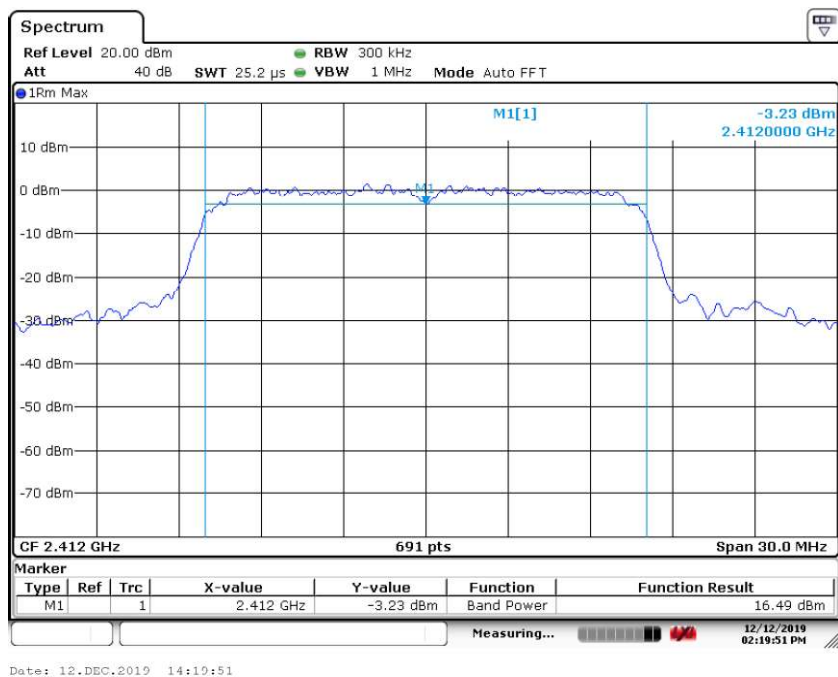
Test Report No.:

Seite 19 von 54

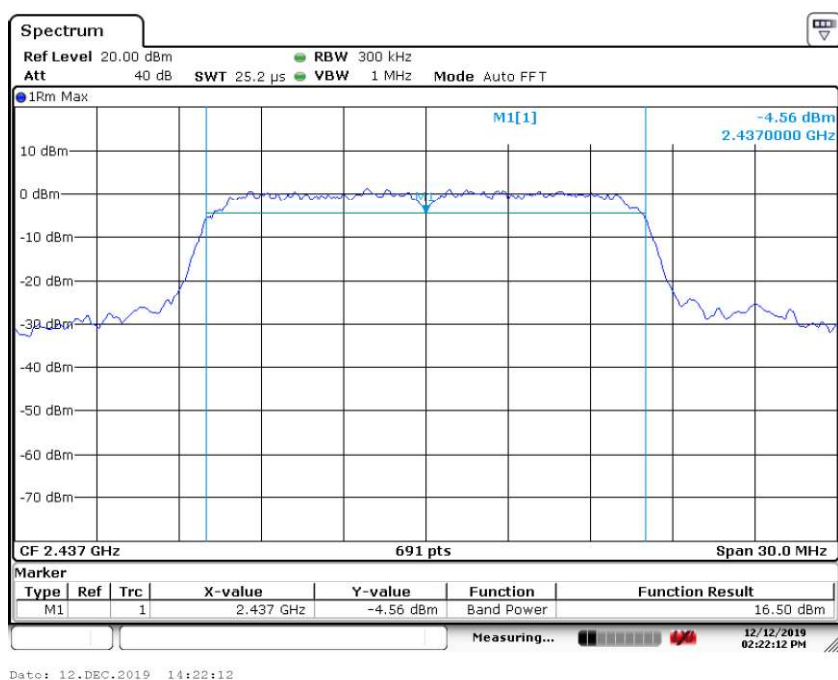
Page 19 of 54

802.11g

Low Channel: 2412MHz



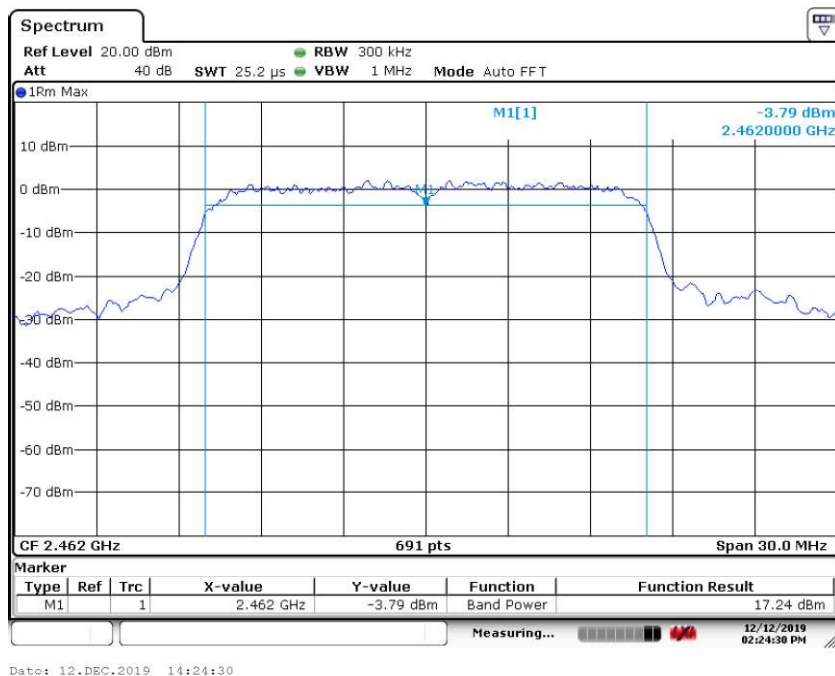
Mid Channel: 2437MHz



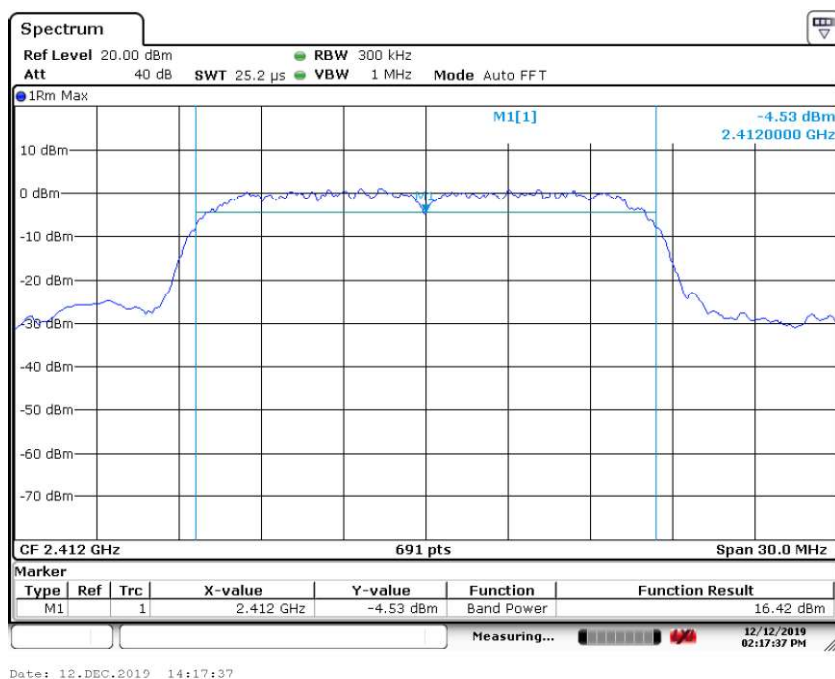
Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 20 von 54
Page 20 of 54

High Channel: 2462MHz



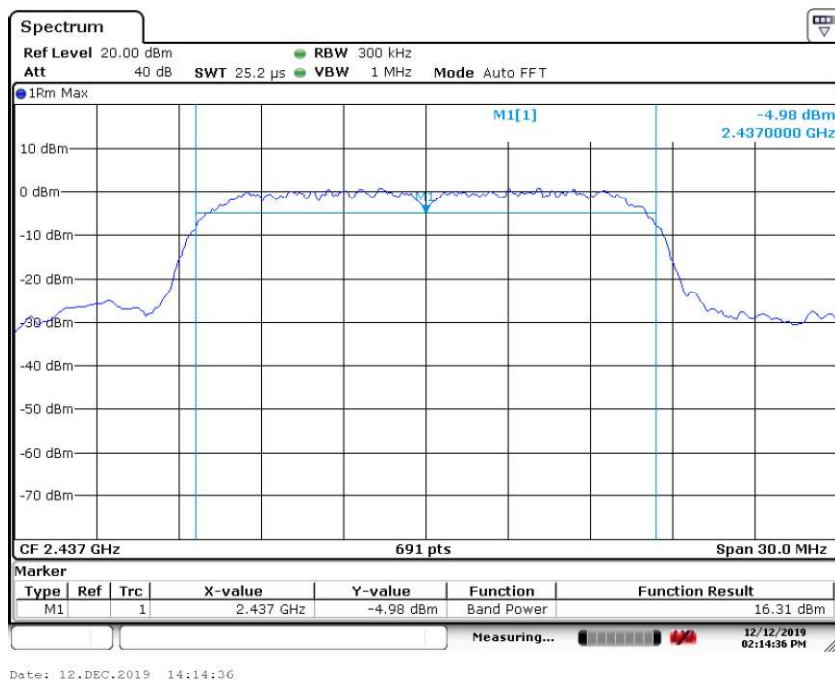
802.11n-HT20
Low Channel: 2412MHz



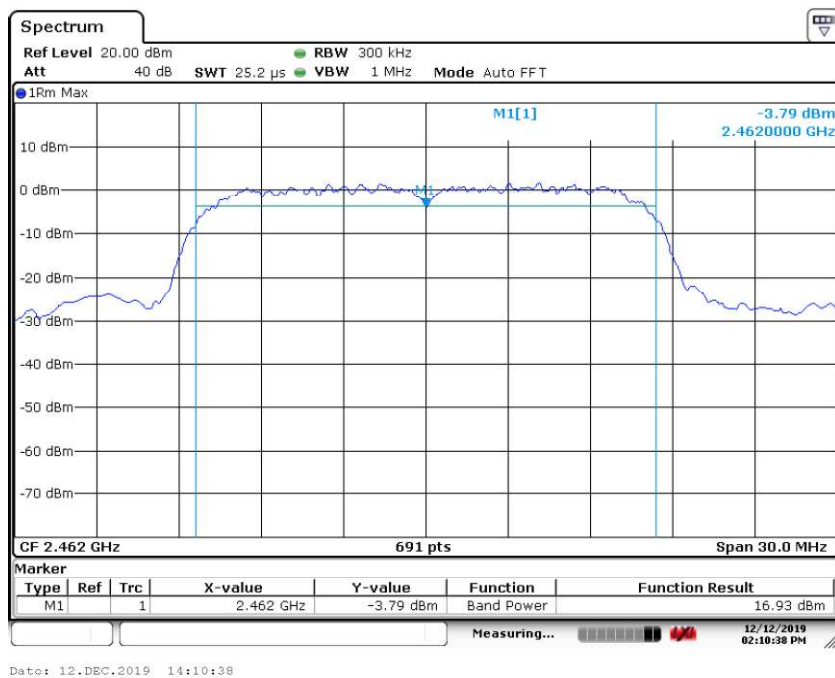
Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 21 von 54
Page 21 of 54

Mid Channel: 2437MHz



High Channel: 2462MHz



4.1.4 Power Spectral Density

Result:

Pass

Test Specification

Test standard : FCC Part 15.247(e)
Basic standard : ANSI C63.10: 2013
Limits : 8 dBm in any 3 kHz band
Kind of test site : Shielded Room

Test Setup

Date of testing : 2019.09.09
Input voltage : AC 120V, 60Hz
Operational mode : On, WIFI b/g/n-HT20
Test channel : Low, Mid, High
Temperature : 23°C
Relative humidity : 64%
Atmospheric pressure : 101 kPa

Table 4: Test result of Power Spectral Density

802.11b

Channel	Channel Frequency (MHz)	Measured Power Density (dBm)	Limit (dBm)	Result
Low Channel	2412	-10.30	8.0	Pass
Mid Channel	2437	-13.50	8.0	Pass
High Channel	2462	-12.06	8.0	Pass

802.11g

Channel	Channel Frequency (MHz)	Measured Power Density (dBm)	Limit (dBm)	Result
Low Channel	2412	-13.39	8.0	Pass
Mid Channel	2437	-16.47	8.0	Pass
High Channel	2462	-14.30	8.0	Pass

802.11g-HT20

Channel	Channel Frequency (MHz)	Measured Power Density (dBm)	Limit (dBm)	Result
Low Channel	2412	-10.90	8.0	Pass
Mid Channel	2437	-14.66	8.0	Pass
High Channel	2462	-12.70	8.0	Pass

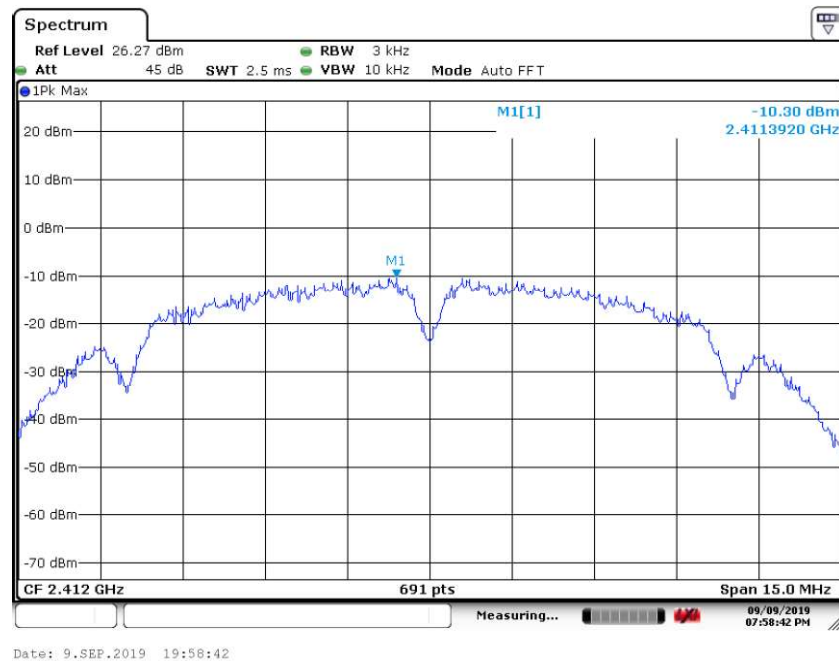
Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 23 von 54
Page 23 of 54

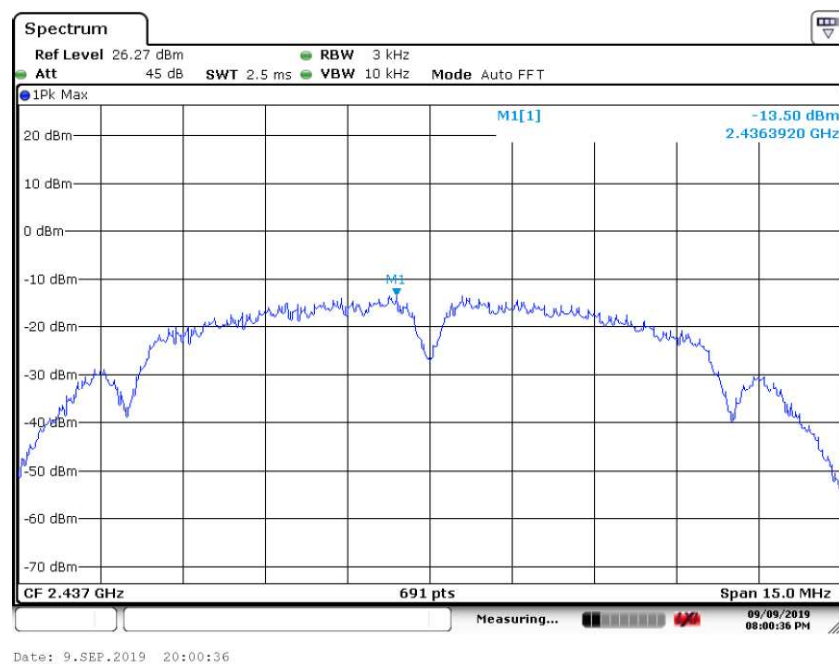
Figure 4: Power Spectral Density

802.11b

Low Channel: 2412MHz



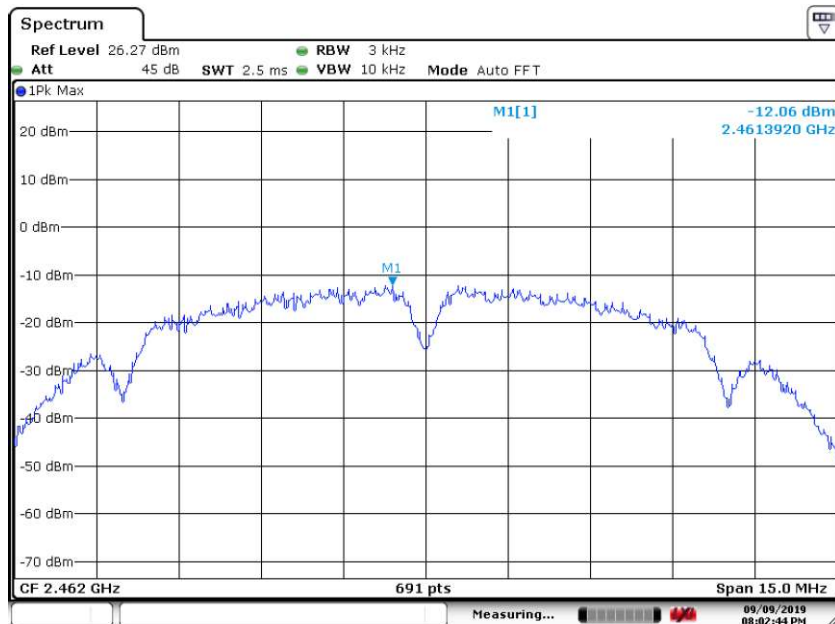
Mid Channel: 2437MHz



Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 24 von 54
Page 24 of 54

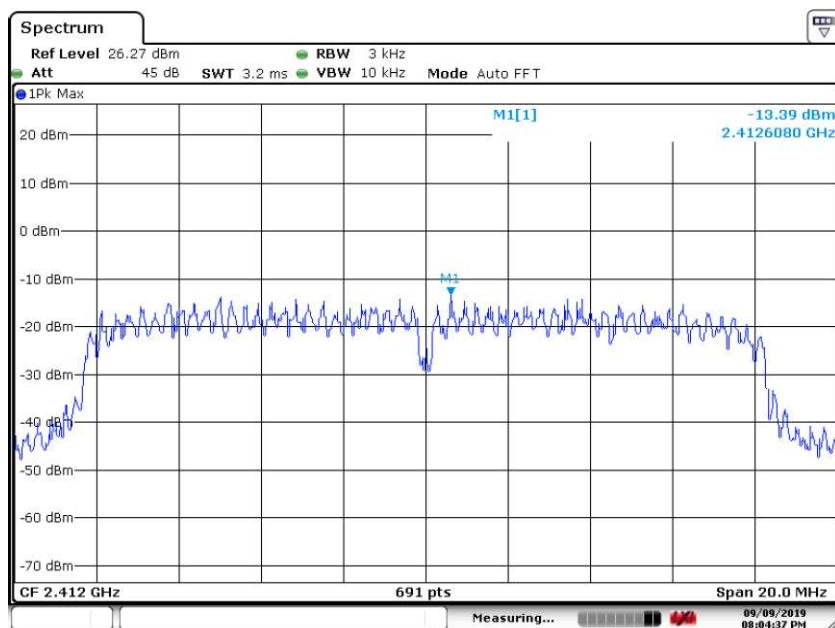
High Channel: 2462MHz



Date: 9.SEP.2019 20:02:44

802.11g

Low Channel: 2412MHz

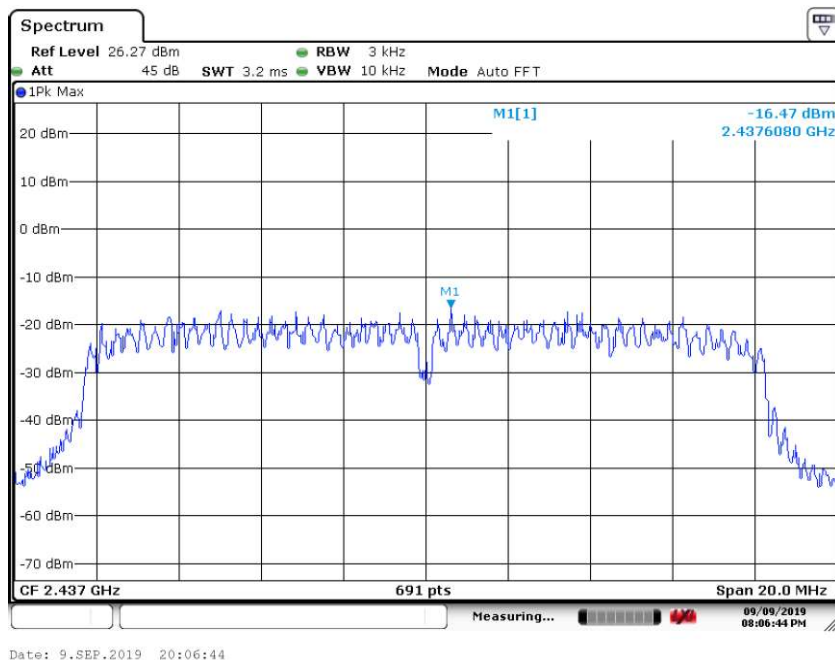


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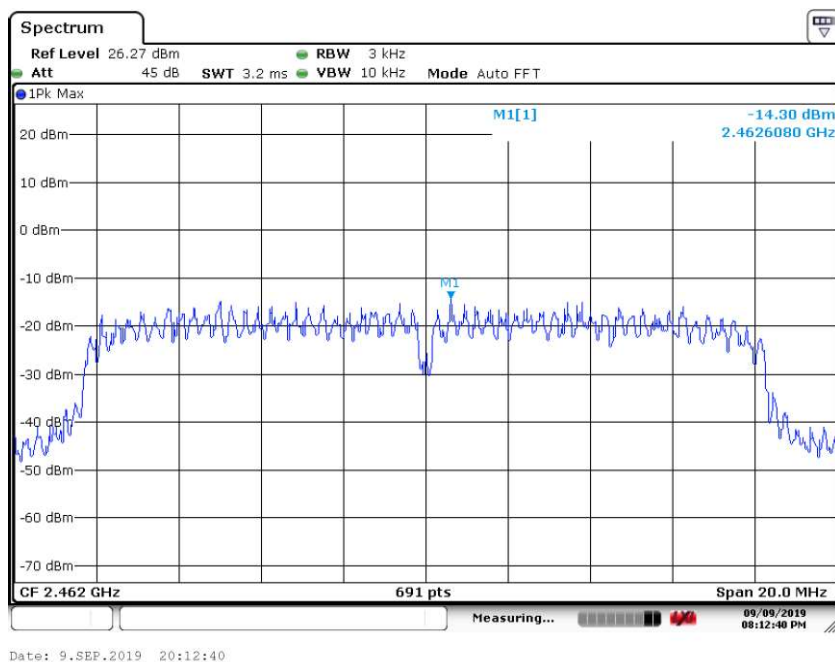
Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 25 von 54
Page 25 of 54

Mid Channel: 2437MHz



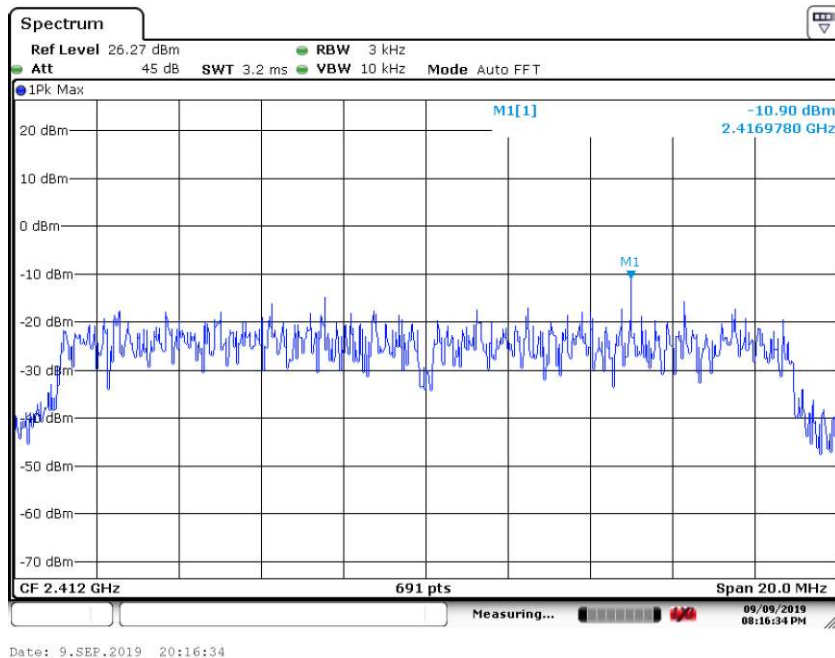
High Channel: 2462MHz



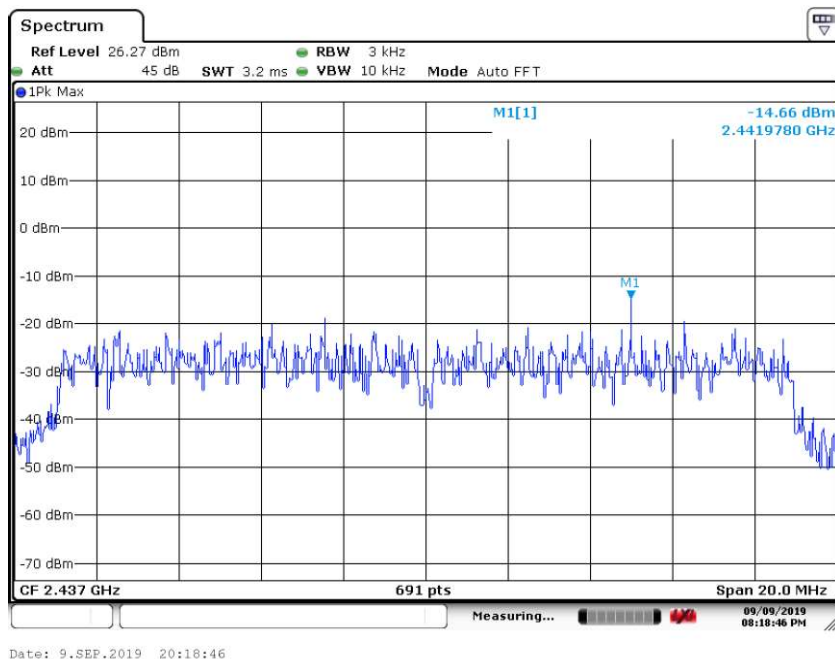
Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 26 von 54
Page 26 of 54

802.11n-HT20
Low Channel: 2412MHz



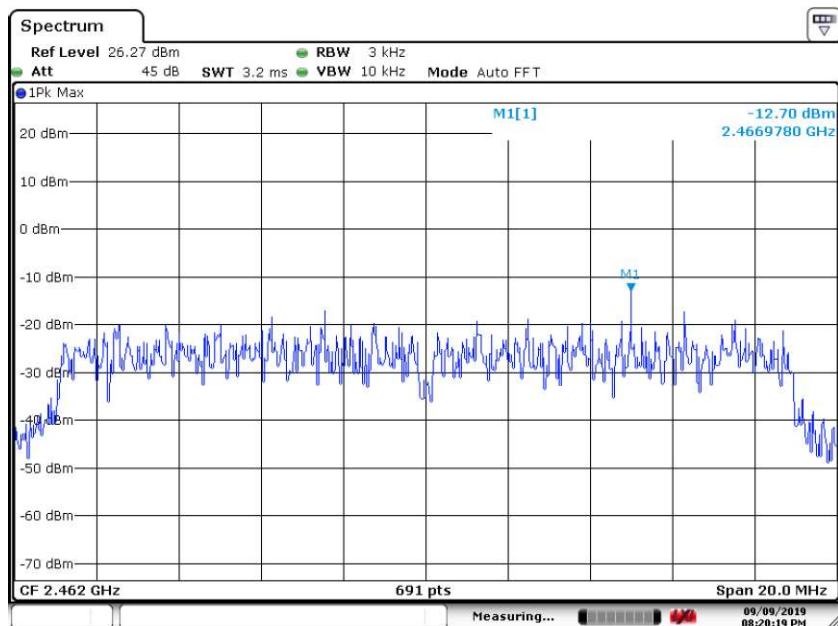
Mid Channel: 2437MHz



Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 27 von 54
Page 27 of 54

High Channel: 2462MHz



Date: 9.SEP.2019 20:20:19

4.1.5 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

Result:

Pass

Test Specification

Test standard : FCC Part 15.247(d)

Basic standard : ANSI C63.10: 2013

Limits : 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power);

Kind of test site : Shielded Room

Test Setup

Date of testing : 2019.12.11-2019.12.12

Input voltage : AC 120V, 60Hz

Operational mode : On, WIFI b/g/n-HT20

Test channel : Low, Mid, High

Temperature : 20-22°C

Relative humidity : 45-50%

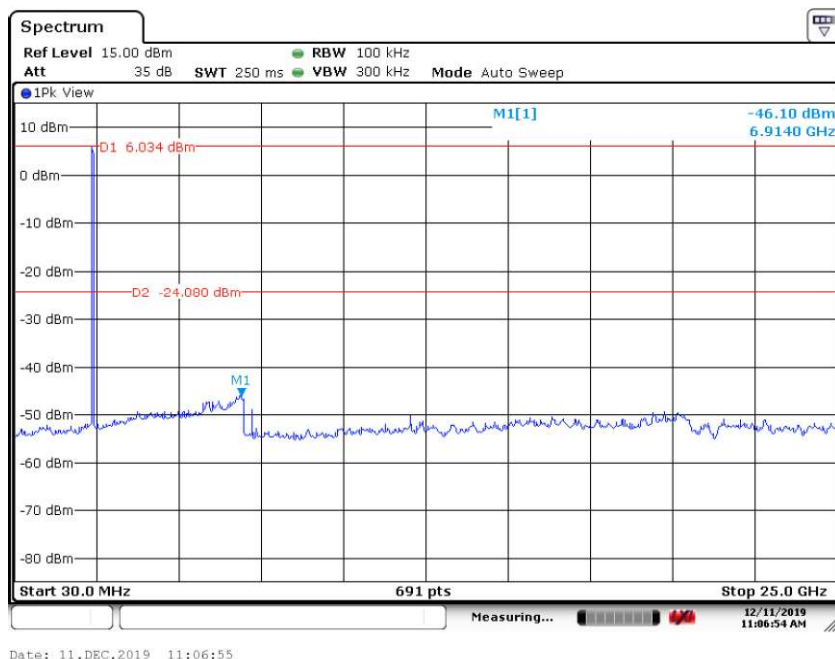
Atmospheric pressure : 101 kPa

All emissions are more than 20dB below fundamental, compliance is achieved as well.

Figure 5: Conducted Spurious Emissions

802.11b

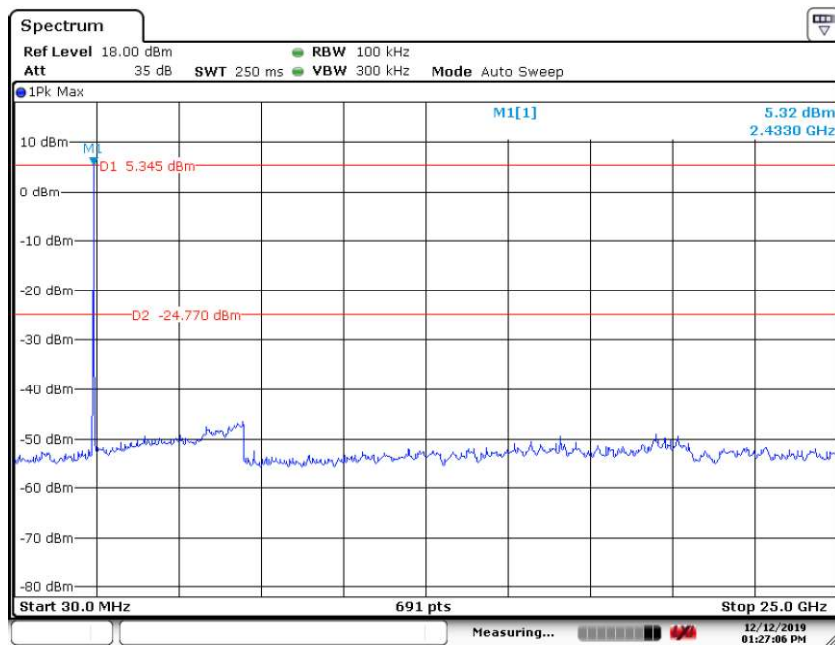
Low Channel: 2412MHz



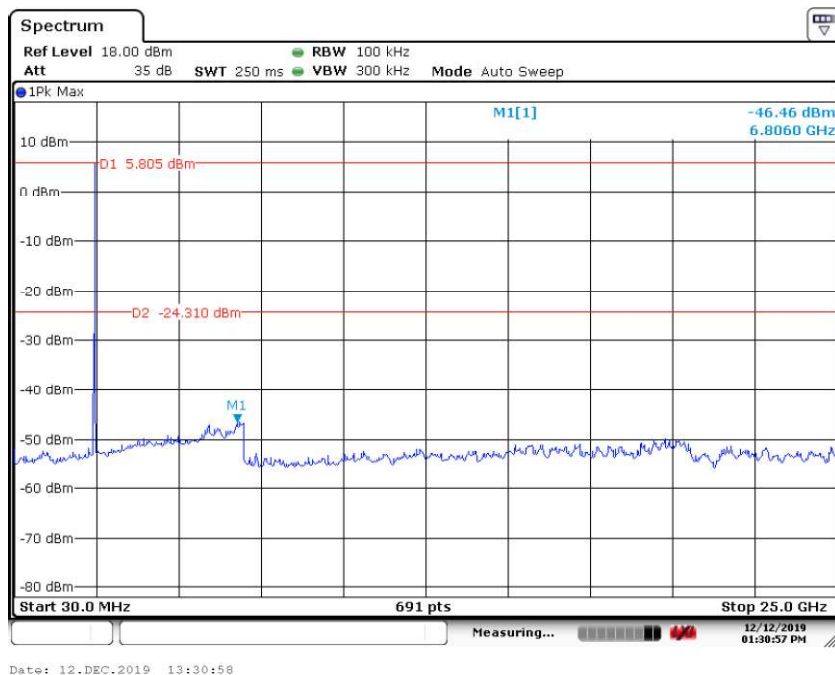
Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 29 von 54
Page 29 of 54

Mid Channel: 2437MHz



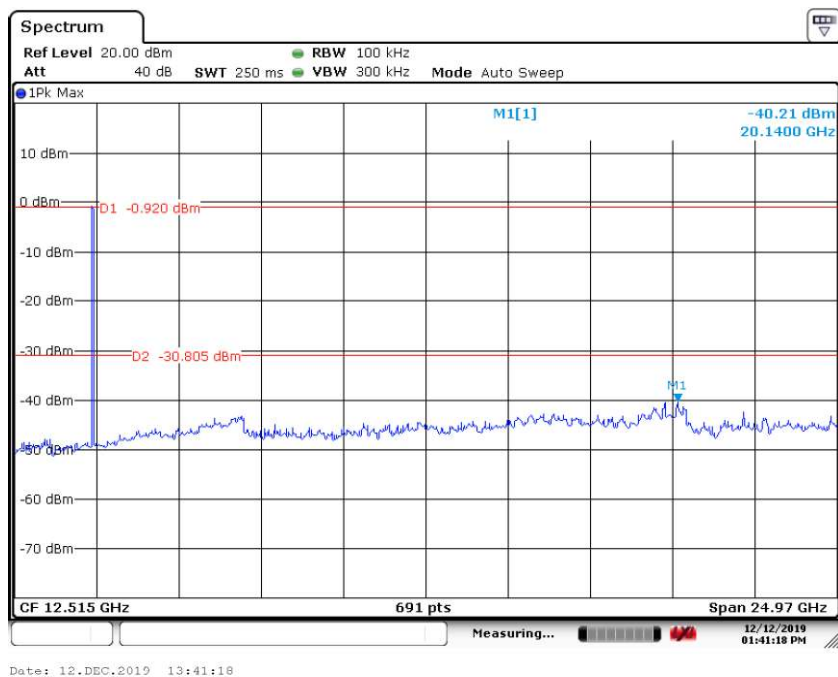
High Channel: 2462MHz



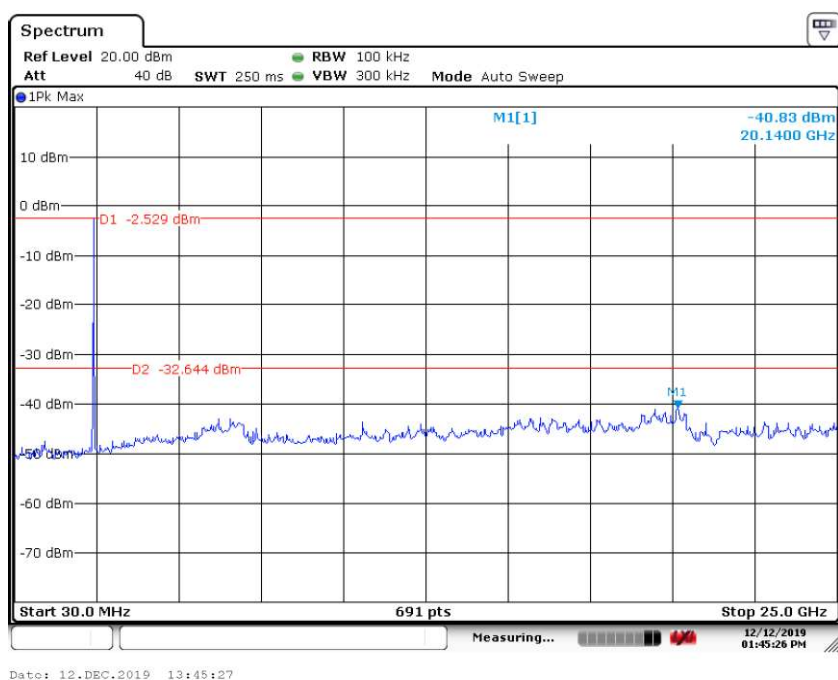
Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 30 von 54
Page 30 of 54

802.11g
Low Channel: 2412MHz



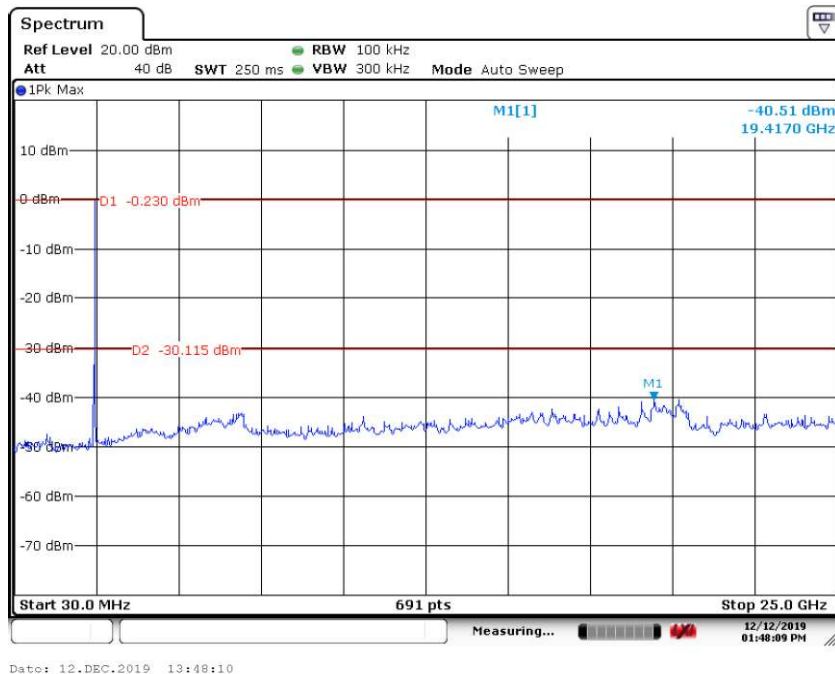
Mid Channel: 2437MHz



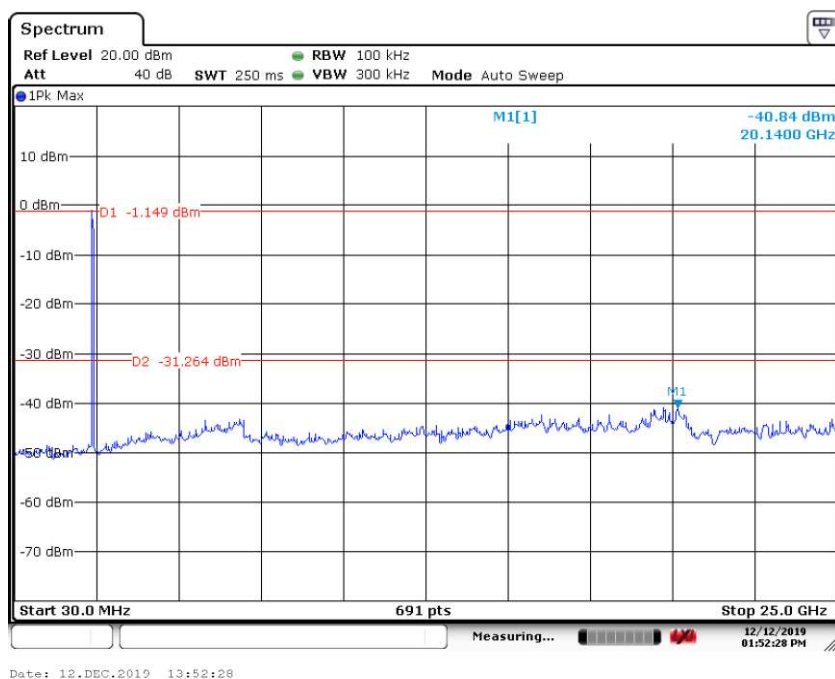
Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 31 von 54
Page 31 of 54

High Channel: 2462MHz



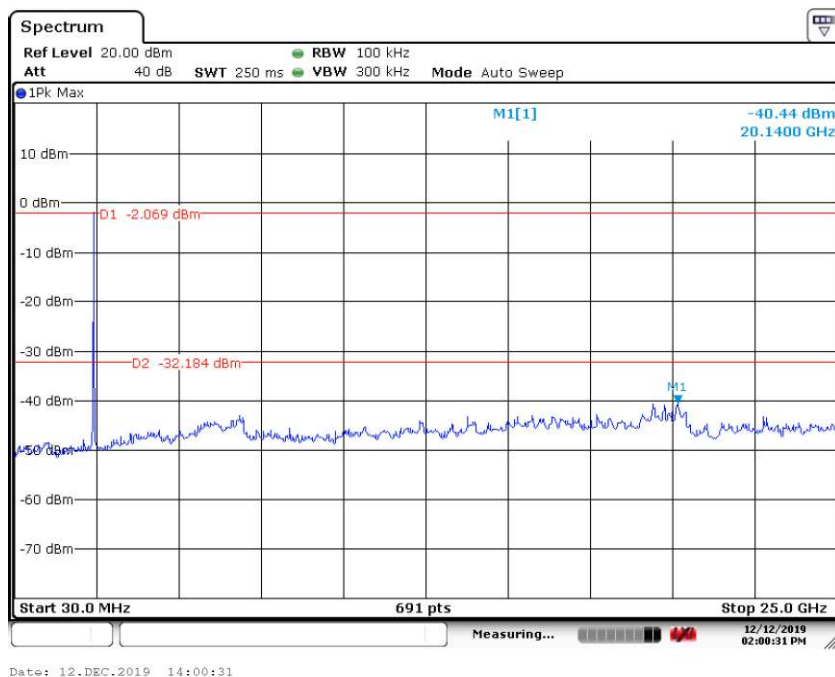
802.11n-HT20
Low Channel: 2412MHz



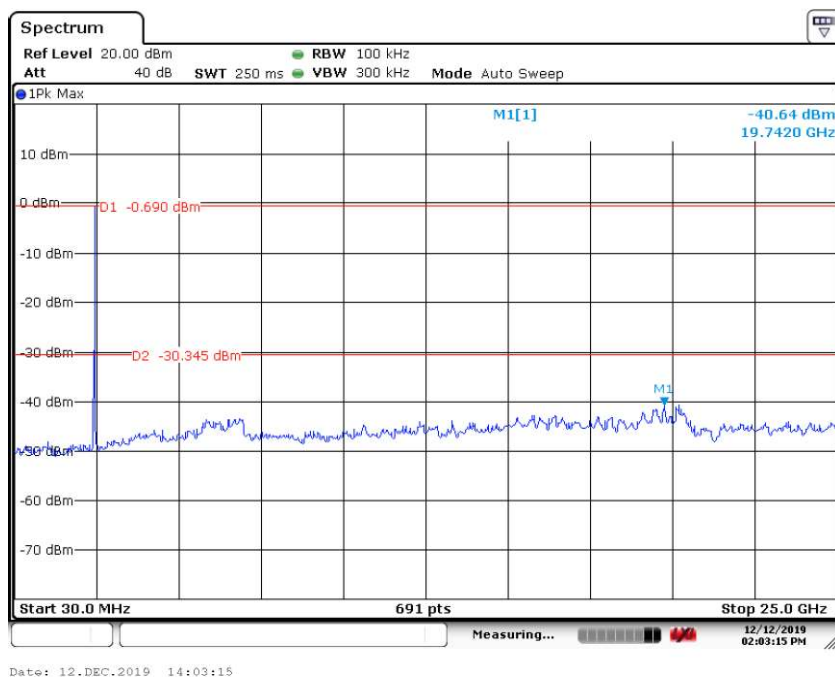
Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 32 von 54
Page 32 of 54

Mid Channel: 2437MHz



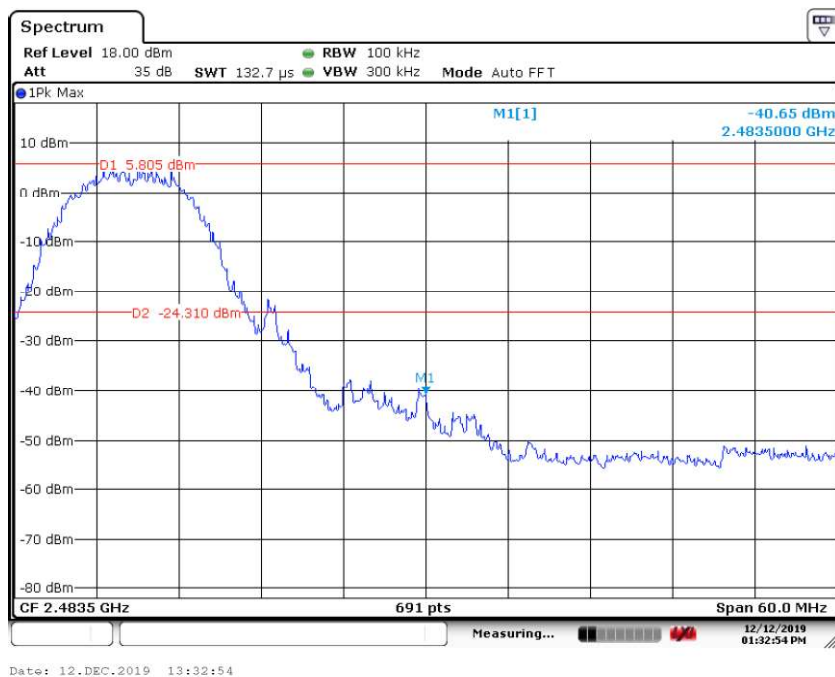
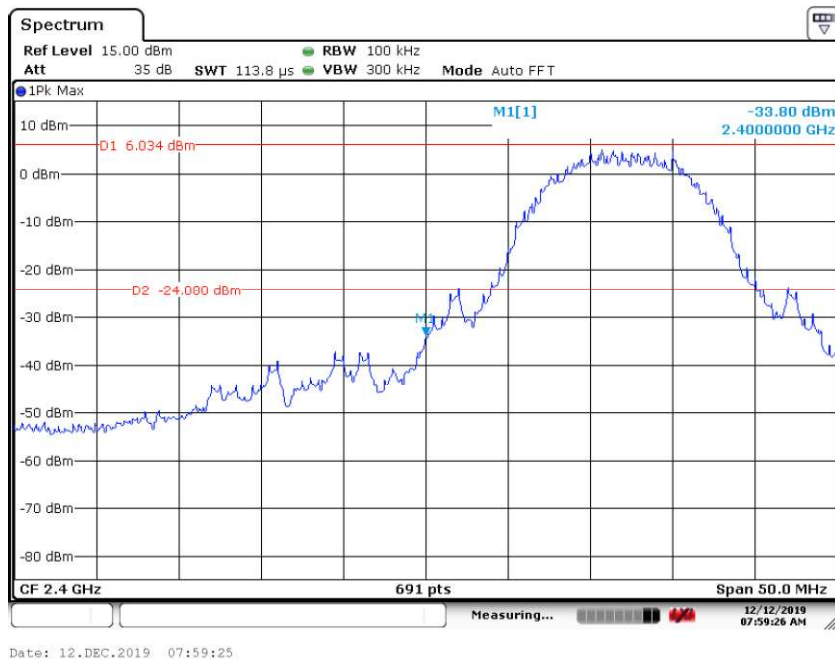
High Channel: 2462MHz



Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 33 von 54
Page 33 of 54

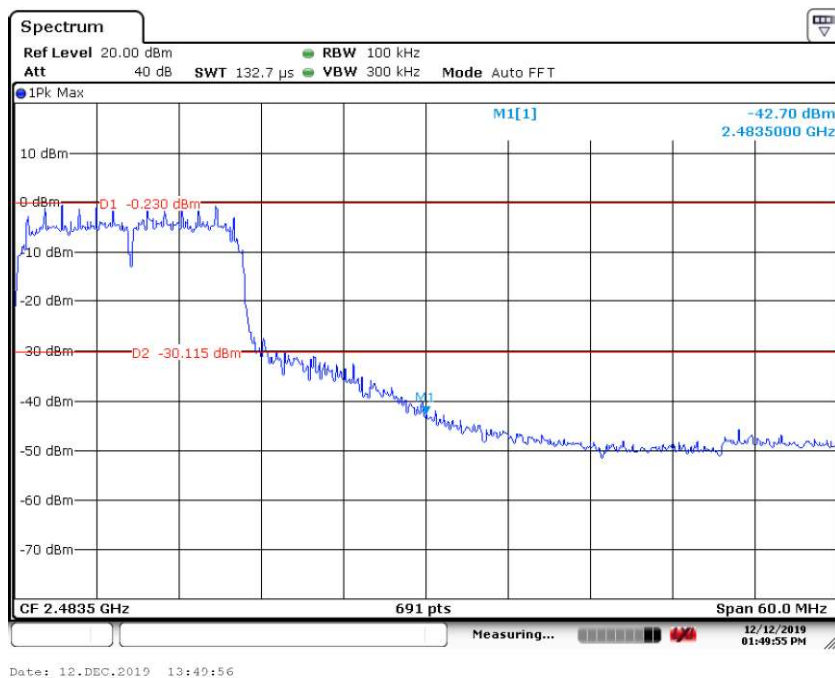
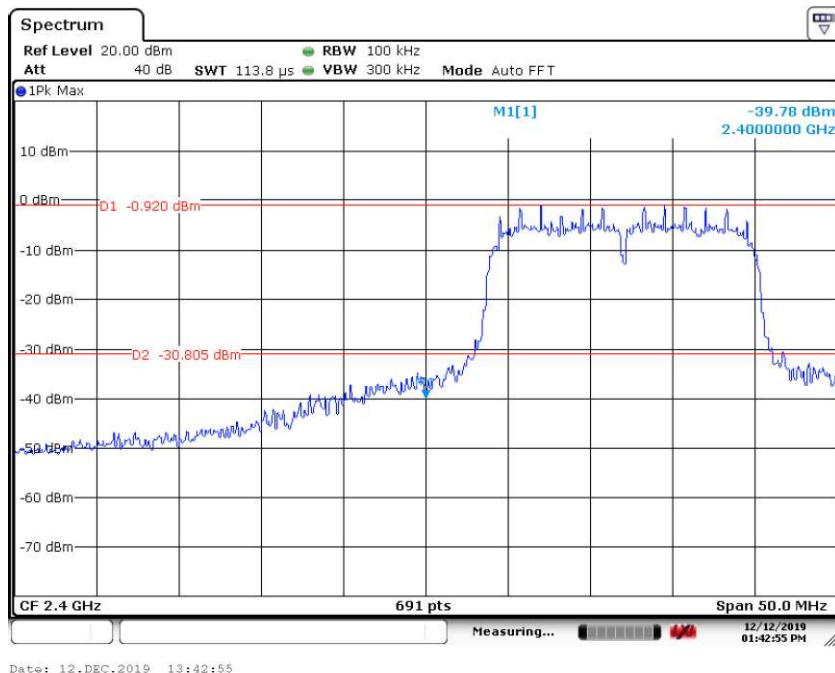
Band Edge
802.11b



Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 34 von 54
Page 34 of 54

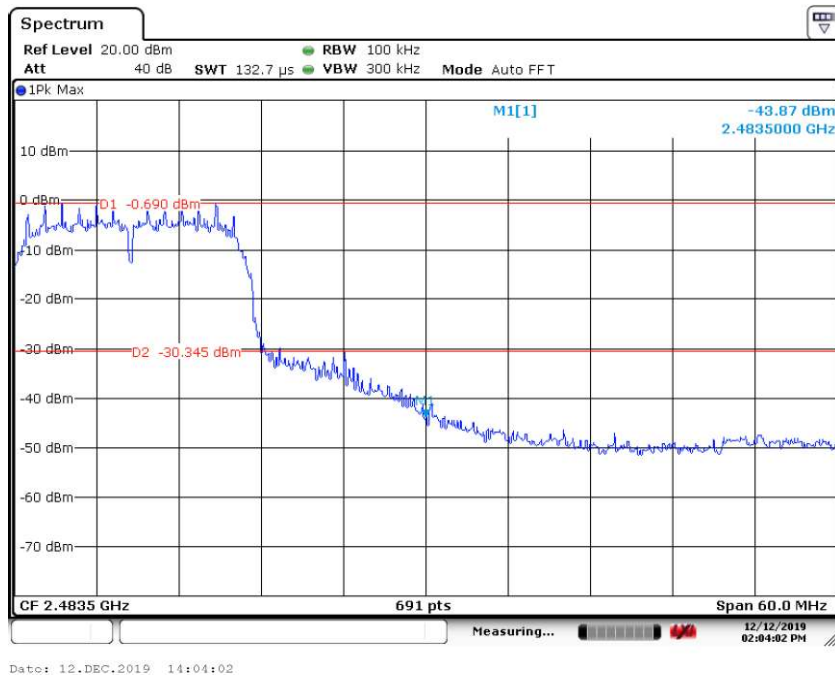
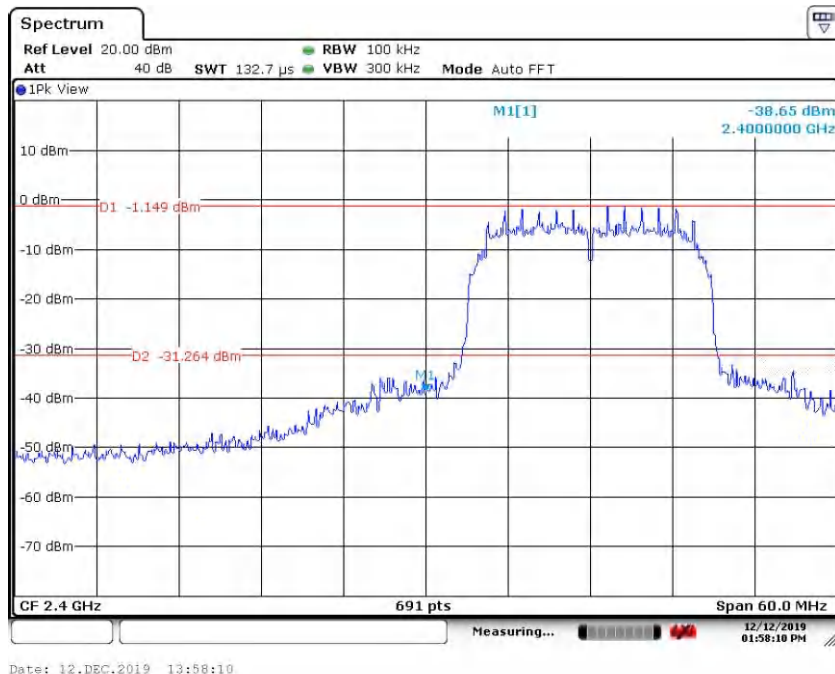
802.11g



Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 35 von 54
Page 35 of 54

802.11n-HT20



Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 36 von 54
Page 36 of 54

4.1.6 Radiated Spurious Emission, 30MHz - 1GHz

Result:

Pass

Test Specification

Test standard : FCC Part 15.247(d) & FCC Part 15.205

Basic standard : ANSI C63.10: 2013

Limits : Refer to 15.209(a) of FCC part 15.247(d)

Kind of test site : 3m Semi-anechoic Chamber

Test Setup

Date of testing : 2019.09.11

Input voltage : AC 120V, 60Hz

Operational mode : On, WIFI b/g/n-HT20

Test channel : Low, Mid, High

Temperature : 23°C

Relative humidity : 64%

Atmospheric pressure : 101 kPa

Remark:

Only the worst case spurious emissions configuration of the each mode were reported.

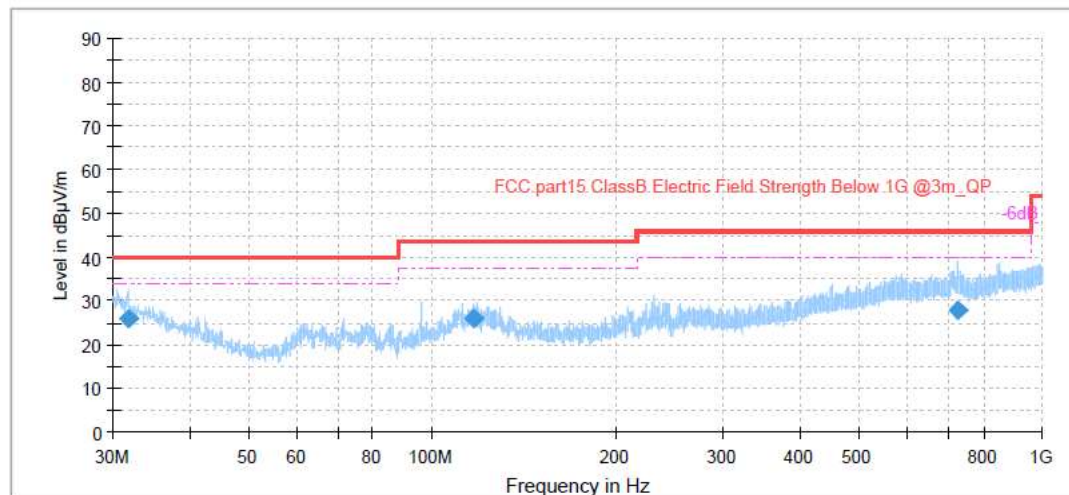
The measurement result is calculated based on the following formula by the test software:

Emission Level = Reading level + Correction

Figure 6: Test Results of Radiated Spurious Emissions, 30-1000MHz

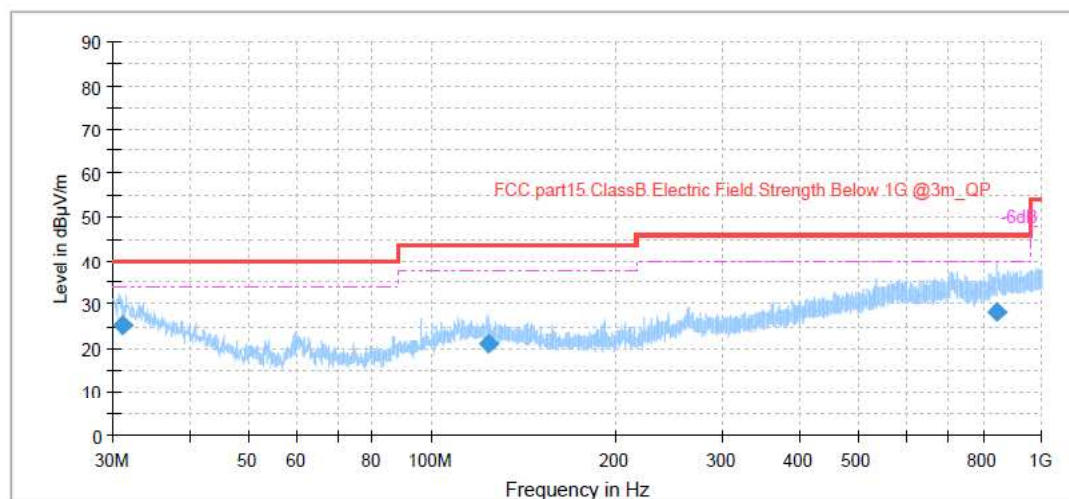
802.11b

Low Channel: 2412MHz



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.824444	25.93	40.00	14.07	1000.0	120.000	124.0	H	117.0	24.3
116.513333	26.01	43.50	17.49	1000.0	120.000	246.0	H	324.0	19.4
725.038889	28.02	46.00	17.98	1000.0	120.000	104.0	H	36.0	28.0



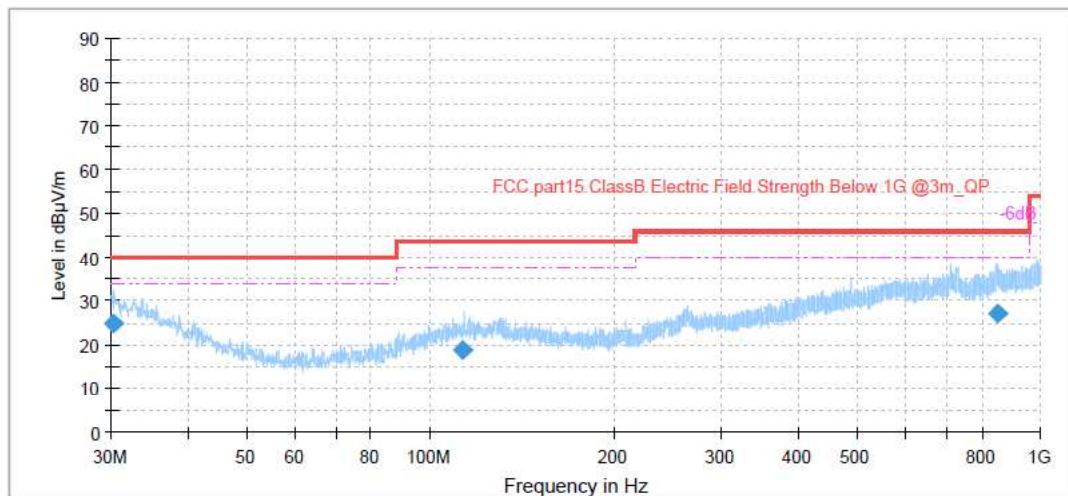
Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.110000	25.21	40.00	14.79	1000.0	120.000	189.0	V	320.0	24.7
123.614444	21.10	43.50	22.40	1000.0	120.000	238.0	V	112.0	19.2
844.687778	28.42	46.00	17.58	1000.0	120.000	111.0	V	70.0	29.5

Prüfbericht - Nr.: 50306743 001
Test Report No.:

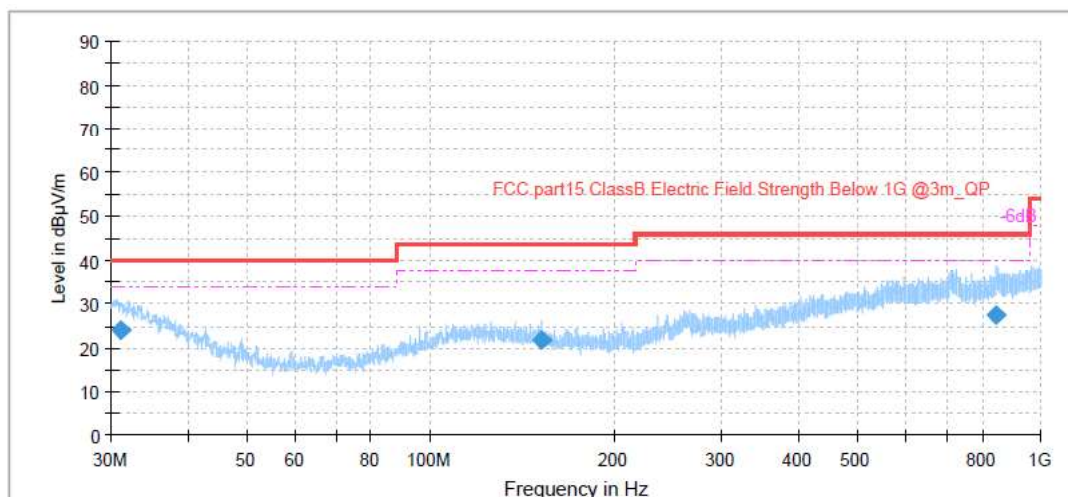
Seite 38 von 54
Page 38 of 54

Mid Channel: 2437MHz



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.200000	24.74	40.00	15.26	1000.0	120.000	193.0	H	182.0	25.2
113.200000	18.84	43.50	24.66	1000.0	120.000	188.0	H	166.0	19.2
846.951111	27.30	46.00	18.70	1000.0	120.000	157.0	H	177.0	29.4



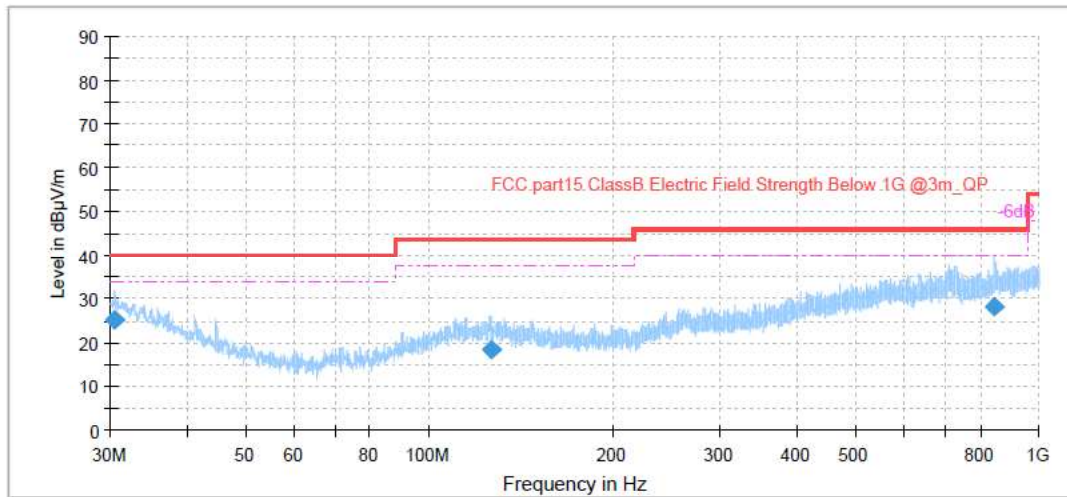
Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.177778	24.18	40.00	15.82	1000.0	120.000	196.0	V	155.0	24.7
151.661111	21.82	43.50	21.68	1000.0	120.000	127.0	V	186.0	17.5
844.901667	27.41	46.00	18.59	1000.0	120.000	113.0	V	262.0	29.5

Prüfbericht - Nr.: 50306743 001
Test Report No.:

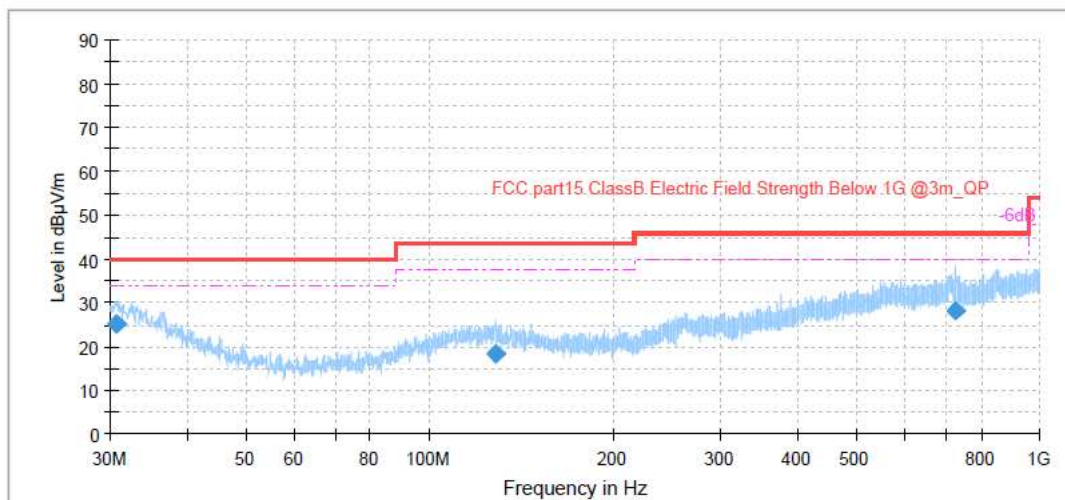
Seite 39 von 54
Page 39 of 54

High Channel: 2462MHz



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.491111	25.36	40.00	14.64	1000.0	120.000	127.0	H	267.0	25.0
125.942222	18.55	43.50	24.95	1000.0	120.000	127.0	H	120.0	19.1
845.303333	28.12	46.00	17.88	1000.0	120.000	150.0	H	22.0	29.4



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.691111	25.31	40.00	14.69	1000.0	120.000	146.0	V	316.0	24.9
128.516667	18.44	43.50	25.06	1000.0	120.000	114.0	V	62.0	19.0
728.207778	28.17	46.00	17.83	1000.0	120.000	123.0	V	29.0	28.0

Prüfbericht - Nr.: 50306743 001

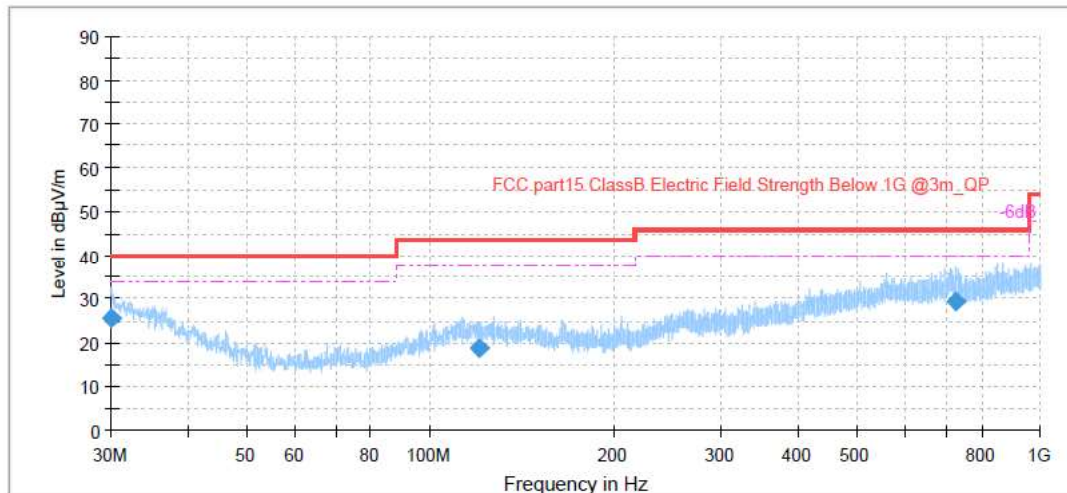
Test Report No.:

Seite 40 von 54

Page 40 of 54

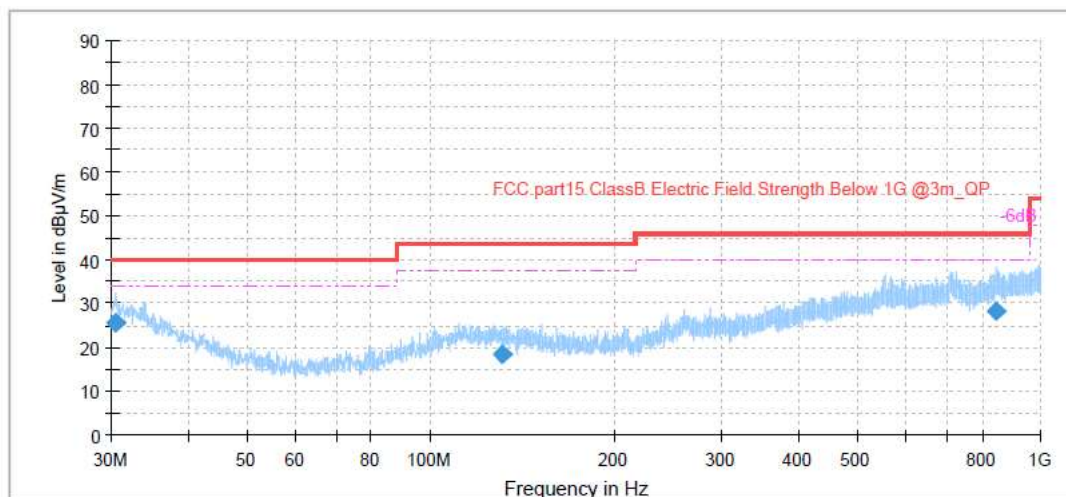
802.11g

Low Channel: 2412MHz



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.000000	25.72	40.00	14.28	1000.0	120.000	120.0	H	347.0	25.3
119.854444	18.75	43.50	24.75	1000.0	120.000	137.0	H	279.0	19.4
729.214444	29.20	46.00	16.80	1000.0	120.000	150.0	H	73.0	28.1



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.411111	25.49	40.00	14.51	1000.0	120.000	117.0	V	322.0	25.1
130.762778	18.47	43.50	25.03	1000.0	120.000	140.0	V	87.0	18.9
846.017778	28.09	46.00	17.91	1000.0	120.000	143.0	V	145.0	29.4

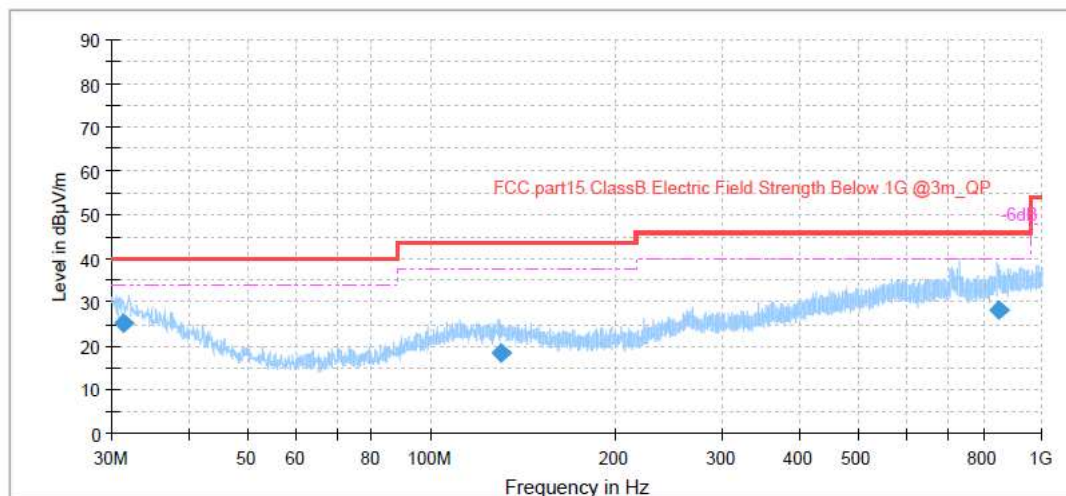
Prüfbericht - Nr.: 50306743 001

Test Report No.:

Seite 41 von 54

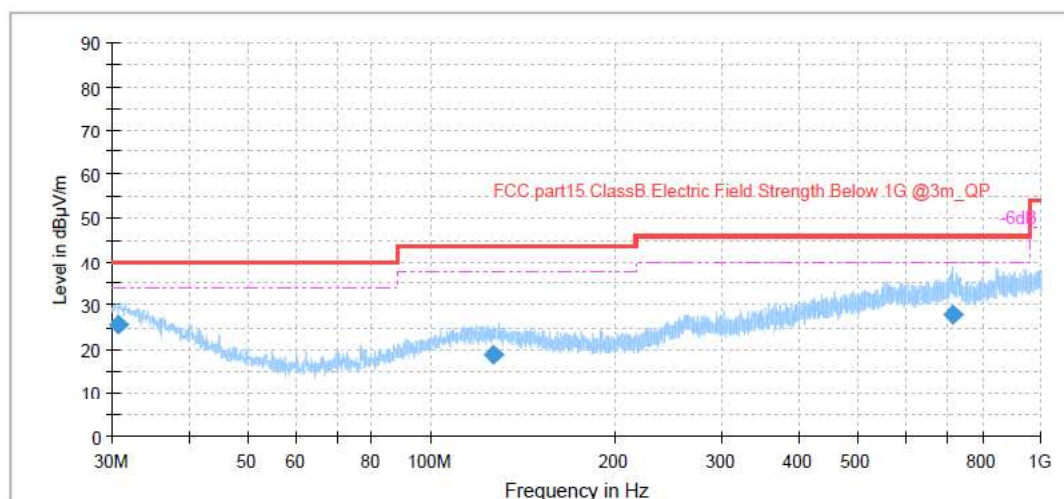
Page 41 of 54

Mid Channel: 2437MHz



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.391667	25.10	40.00	14.90	1000.0	120.000	222.0	H	327.0	24.6
129.617222	18.59	43.50	24.91	1000.0	120.000	139.0	H	328.0	18.9
848.753889	28.20	46.00	17.80	1000.0	120.000	150.0	H	247.0	29.4



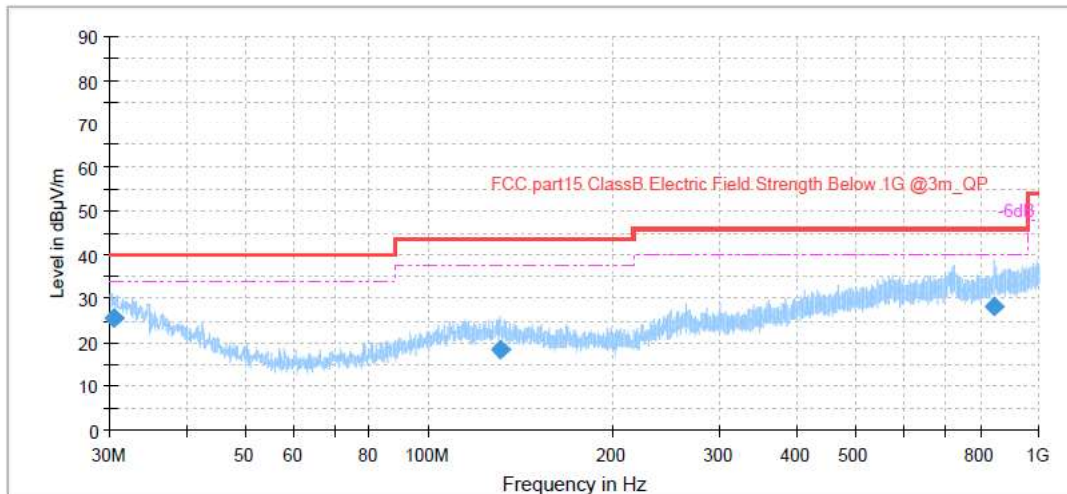
Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.602222	25.57	40.00	14.43	1000.0	120.000	250.0	V	134.0	25.0
126.119444	18.70	43.50	24.80	1000.0	120.000	120.0	V	285.0	19.1
717.035556	27.82	46.00	18.18	1000.0	120.000	158.0	V	176.0	27.8

Prüfbericht - Nr.: 50306743 001
Test Report No.:

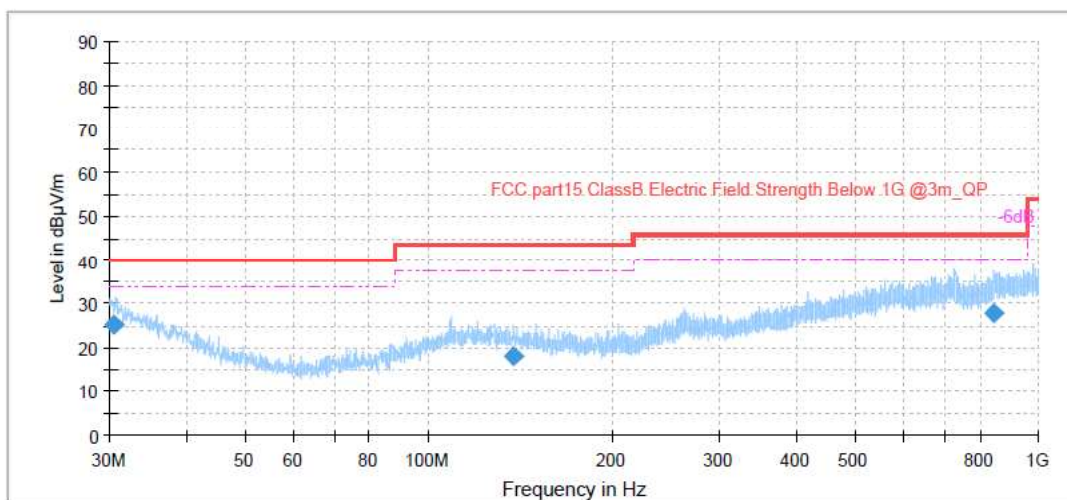
Seite 42 von 54
Page 42 of 54

High Channel: 2462MHz



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.440000	25.43	40.00	14.57	1000.0	120.000	104.0	H	46.0	25.1
131.315556	18.30	43.50	25.20	1000.0	120.000	150.0	H	12.0	18.8
844.957222	28.07	46.00	17.93	1000.0	120.000	150.0	H	271.0	29.4



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.400556	25.39	40.00	14.61	1000.0	120.000	133.0	V	196.0	25.1
137.260556	18.22	43.50	25.28	1000.0	120.000	146.0	V	20.0	18.5
845.803889	27.95	46.00	18.05	1000.0	120.000	135.0	V	270.0	29.4

Prüfbericht - Nr.: 50306743 001

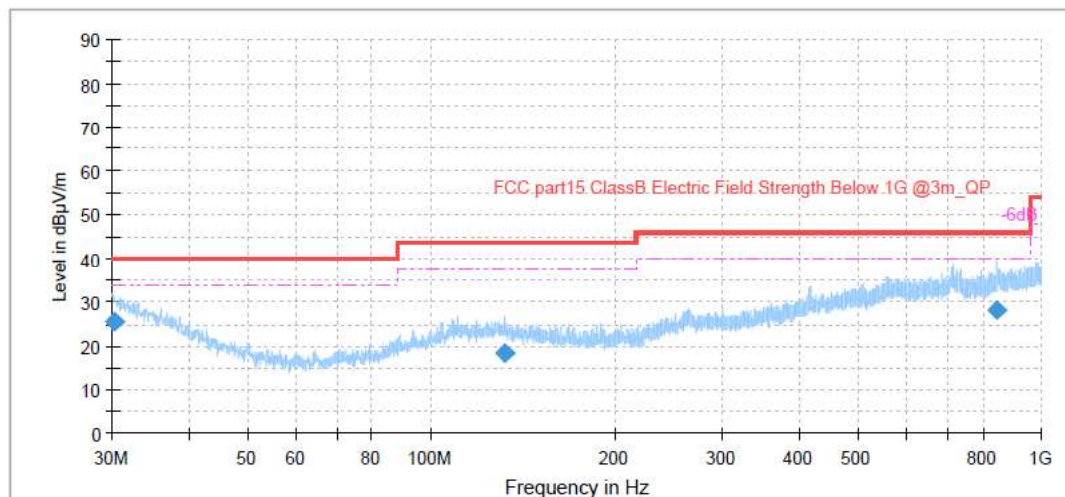
Test Report No.:

Seite 43 von 54

Page 43 of 54

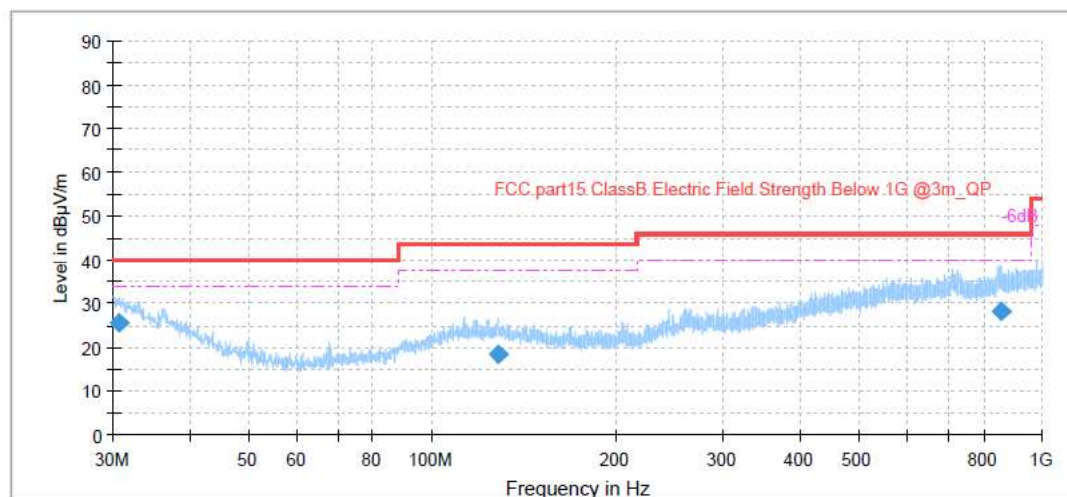
802.11n-HT20

Low Channel: 2412MHz



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.200000	25.76	40.00	14.24	1000.0	120.000	120.0	H	39.0	25.2
131.873333	18.39	43.50	25.11	1000.0	120.000	192.0	H	7.0	18.8
844.955556	28.27	46.00	17.73	1000.0	120.000	319.0	H	291.0	29.4



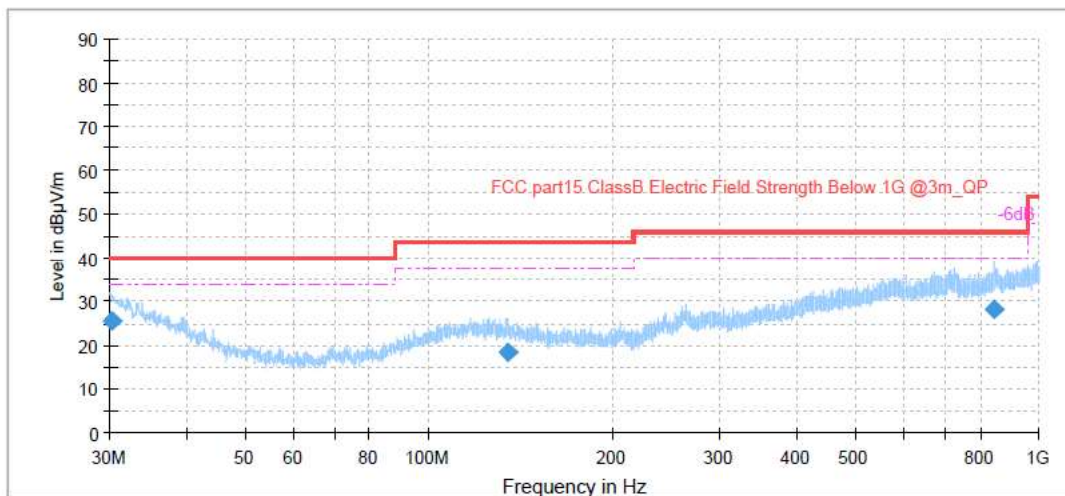
Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.626667	25.48	40.00	14.52	1000.0	120.000	136.0	V	130.0	25.0
128.071667	18.56	43.50	24.94	1000.0	120.000	139.0	V	319.0	19.0
854.302778	28.23	46.00	17.77	1000.0	120.000	267.0	V	229.0	29.3

Prüfbericht - Nr.: 50306743 001
Test Report No.:

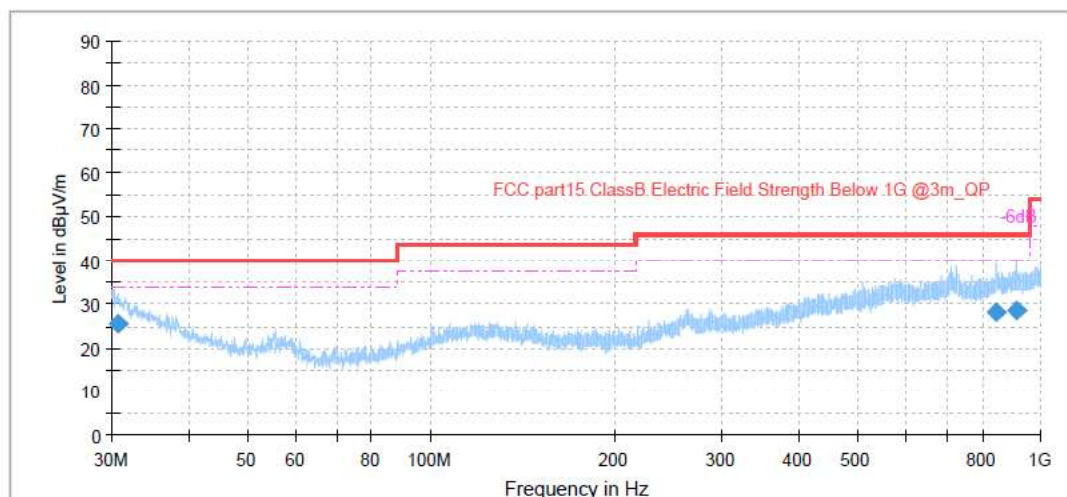
Seite 44 von 54
Page 44 of 54

Mid Channel: 2437MHz



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.197222	25.74	40.00	14.26	1000.0	120.000	124.0	H	1.0	25.2
135.087778	18.39	43.50	25.11	1000.0	120.000	150.0	H	98.0	18.7
844.981667	28.26	46.00	17.74	1000.0	120.000	350.0	H	263.0	29.4



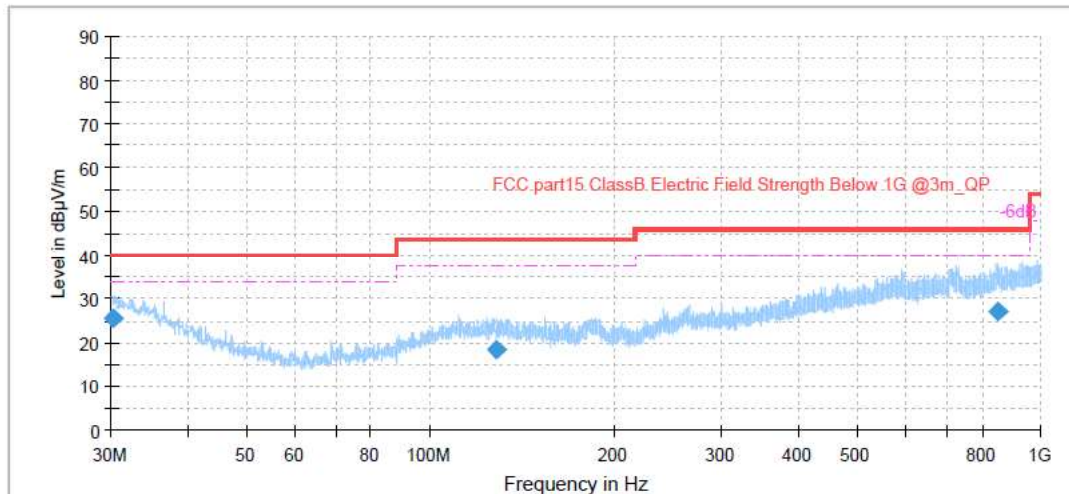
Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.558889	25.59	40.00	14.41	1000.0	120.000	350.0	V	307.0	25.0
845.065000	28.32	46.00	17.68	1000.0	120.000	274.0	V	327.0	29.4
914.825000	28.80	46.00	17.20	1000.0	120.000	223.0	V	-10.0	29.8

Prüfbericht - Nr.: 50306743 001
Test Report No.:

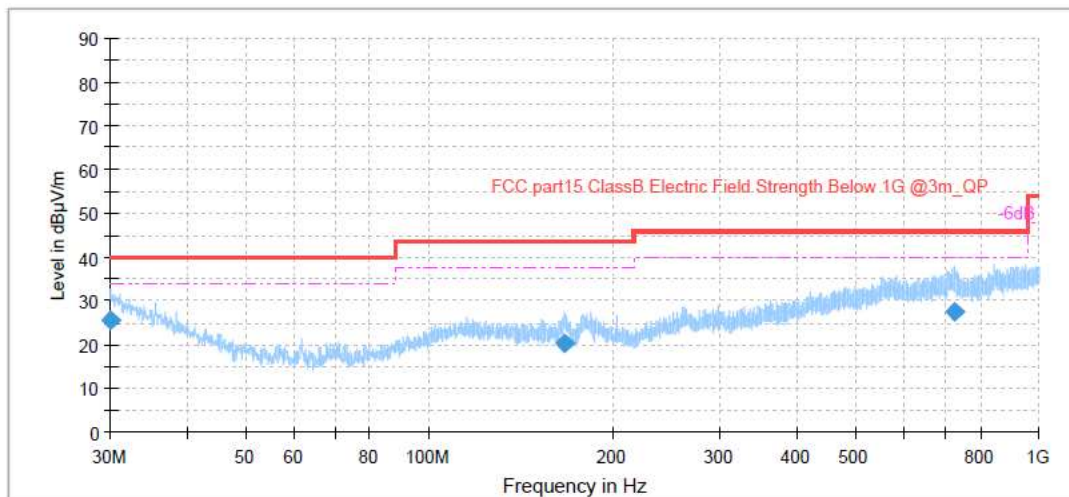
Seite 45 von 54
Page 45 of 54

High Channel: 2462MHz



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.185000	25.67	40.00	14.33	1000.0	120.000	245.0	H	157.0	25.2
128.235000	18.62	43.50	24.88	1000.0	120.000	104.0	H	141.0	19.0
847.719444	27.07	46.00	18.93	1000.0	120.000	146.0	H	157.0	29.4



Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.040000	25.73	40.00	14.27	1000.0	120.000	216.0	V	-3.0	25.3
167.033333	20.36	43.50	23.14	1000.0	120.000	100.0	V	259.0	16.9
729.158889	27.33	46.00	18.67	1000.0	120.000	150.0	V	309.0	28.1

Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 46 von 54
Page 46 of 54

4.1.7 Conducted Emission on AC Mains

Result:

Pass

Test Specification	
Test standard	: FCC Part 15.207(a)
Basic standard	: ANSI C63.10: 2013
Frequency range	0.15 – 30MHz
Limits	: FCC Part 15.207(a)
Kind of test site	: Shielded Room

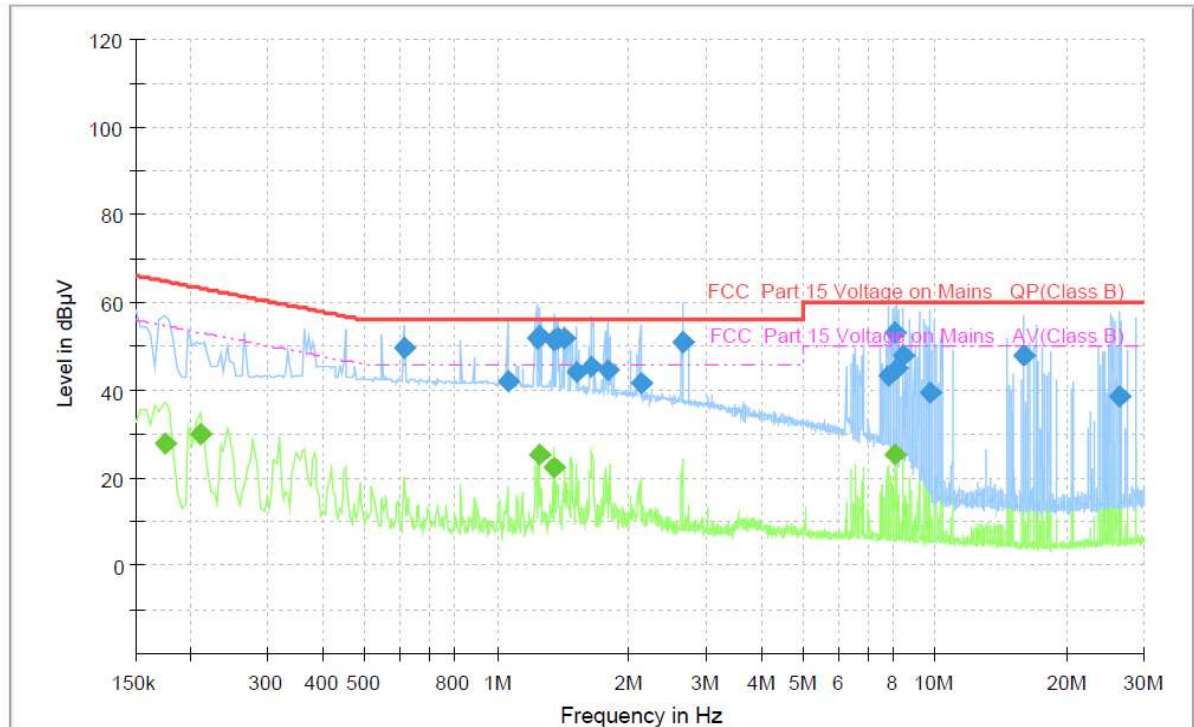
Test Setup

Date of testing	: 2019.09.24
Input voltage	: AC 120V, 60Hz
Operational mode	: On, WIFI b/g/n-HT20
Test channel	: Low, Mid, High
Temperature	: 23°C
Relative humidity	: 64%
Atmospheric pressure	: 101 kPa

Remark:

The measurement result is calculated based on the following formula by the test software:
Conducted Emission Level = Reading level + Correction

Figure 7: Test Results of Conducted Emission on AC Mains



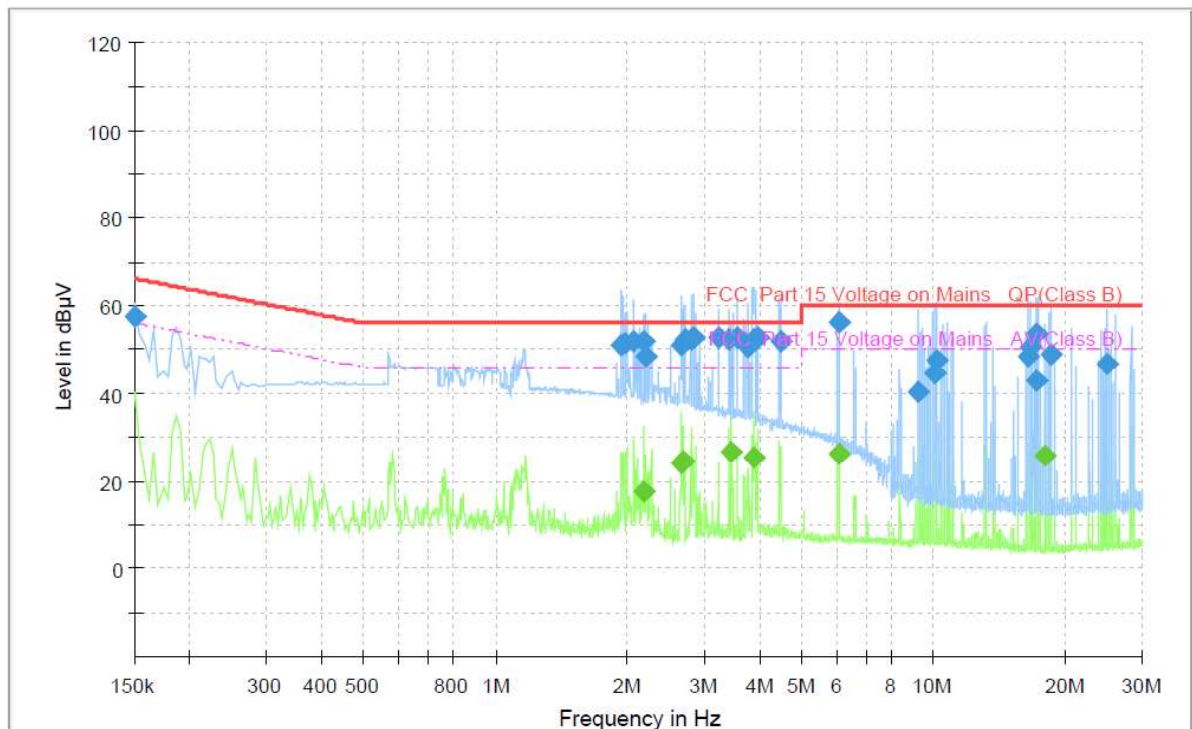
Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.174000	---	28.01	54.77	26.76	1000.0	9.000	L1	ON	9.8
0.210000	---	30.29	53.21	22.92	1000.0	9.000	L1	ON	9.9
0.614000	49.62	---	56.00	10.38	1000.0	9.000	L1	ON	9.9
1.058000	41.87	---	56.00	14.13	1000.0	9.000	L1	ON	10.0
1.230000	51.90	---	56.00	4.10	1000.0	9.000	L1	ON	10.0
1.250000	52.30	---	56.00	3.70	1000.0	9.000	L1	ON	10.0
1.250000	---	25.50	46.00	20.50	1000.0	9.000	L1	ON	10.0
1.350000	---	22.30	46.00	23.70	1000.0	9.000	L1	ON	10.0
1.350000	51.60	---	56.00	4.30	1000.0	9.000	L1	ON	10.0
1.374000	52.00	---	56.00	4.00	1000.0	9.000	L1	ON	10.0
1.430000	51.80	---	56.00	4.20	1000.0	9.000	L1	ON	10.0
1.518000	44.31	---	56.00	11.69	1000.0	9.000	L1	ON	10.0
1.646000	45.41	---	56.00	10.59	1000.0	9.000	L1	ON	10.0
1.782000	44.62	---	56.00	11.38	1000.0	9.000	L1	ON	10.0
2.122000	41.74	---	56.00	14.26	1000.0	9.000	L1	ON	10.0
2.650000	51.20	---	56.00	4.75	1000.0	9.000	L1	ON	10.0
7.790000	43.35	---	60.00	16.65	1000.0	9.000	L1	ON	10.2

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
8.058000	---	25.20	50.00	24.80	1000.0	9.000	L1	ON	10.2
8.058000	53.10	---	60.00	6.87	1000.0	9.000	L1	ON	10.2
8.210000	45.00	---	60.00	15.00	1000.0	9.000	L1	ON	10.2
8.482000	48.04	---	60.00	11.96	1000.0	9.000	L1	ON	10.2
9.718000	39.35	---	60.00	20.65	1000.0	9.000	L1	ON	10.2
15.894000	48.11	---	60.00	11.89	1000.0	9.000	L1	ON	10.3
26.238000	38.54	---	60.00	21.46	1000.0	9.000	L1	ON	10.3

Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 48 von 54
Page 48 of 54



Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.150000	57.65	---	66.00	8.35	1000.0	9.000	N	ON	9.8
1.942000	50.90	---	56.00	25.57	1000.0	9.000	N	ON	10.1
1.982000	51.50	---	56.00	18.52	1000.0	9.000	N	ON	10.1
2.070000	52.00	---	56.00	15.04	1000.0	9.000	N	ON	10.1
2.174000	51.85	---	56.00	4.15	1000.0	9.000	N	ON	10.1
2.178000	---	17.73	46.00	28.27	1000.0	9.000	N	ON	10.1
2.202000	48.29	---	56.00	7.71	1000.0	9.000	N	ON	10.1
2.646000	51.15	---	56.00	4.85	1000.0	9.000	N	ON	10.1
2.650000	---	23.91	46.00	22.09	1000.0	9.000	N	ON	10.1
2.674000	---	24.61	46.00	21.39	1000.0	9.000	N	ON	10.1
2.698000	52.20	---	56.00	3.80	1000.0	9.000	N	ON	10.1
2.818000	52.30	---	56.00	3.70	1000.0	9.000	N	ON	10.1
2.842000	52.70	---	56.00	3.30	1000.0	9.000	N	ON	10.1
3.230000	52.90	---	56.00	3.10	1000.0	9.000	N	ON	10.1
3.426000	52.30	---	56.00	3.70	1000.0	9.000	N	ON	10.1
3.462000	---	26.50	46.00	19.50	1000.0	9.000	N	ON	10.1
3.566000	52.70	---	56.00	3.30	1000.0	9.000	N	ON	10.2

Prüfbericht - Nr.: 50306743 001

Test Report No.:

Seite 49 von 54

Page 49 of 54

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
3.778000	50.76	---	56.00	5.24	1000.0	9.000	N	ON	10.2
3.878000	---	25.40	46.00	20.60	1000.0	9.000	N	ON	10.2
3.886000	52.39	---	56.00	3.61	1000.0	9.000	N	ON	10.2
3.966000	52.80	---	56.00	3.20	1000.0	9.000	N	ON	10.2
4.474000	51.80	---	56.00	4.20	1000.0	9.000	N	ON	10.2
6.070000	---	26.30	50.00	23.70	1000.0	9.000	N	ON	10.2
6.074000	56.20	---	60.00	3.80	1000.0	9.000	N	ON	10.2
9.194000	40.20	---	60.00	19.80	1000.0	9.000	N	ON	10.3
10.082000	44.85	---	60.00	15.15	1000.0	9.000	N	ON	10.3
10.126000	47.64	---	60.00	12.36	1000.0	9.000	N	ON	10.3
16.410000	48.55	---	60.00	11.45	1000.0	9.000	N	ON	10.4
16.566000	50.67	---	60.00	9.33	1000.0	9.000	N	ON	10.4
17.110000	53.60	---	60.00	6.40	1000.0	9.000	N	ON	10.4
17.278000	42.90	---	60.00	27.10	1000.0	9.000	N	ON	10.4
17.954000	---	25.81	50.00	24.19	1000.0	9.000	N	ON	10.4
18.462000	49.00	---	60.00	11.00	1000.0	9.000	N	ON	10.4
24.910000	46.90	---	60.00	13.10	1000.0	9.000	N	ON	10.4

Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 50 von 54
Page 50 of 54

5 Photographs of the Test Set-Up

Photograph 1: Set-up for Radiated Spurious Emission, 30MHz - 1GHz

Photograph 2: Set-up for Conducted Emission on AC Mains

Prüfbericht - Nr.: 50306743 001

Test Report No.:

Seite 51 von 54

Page 51 of 54

Photograph 3: Overview of the EUT

Prüfbericht - Nr.: 50306743 001

Test Report No.:

Seite 52 von 54

Page 52 of 54

Photographs 4: PCBs of the EUT

Prüfbericht - Nr.: 50306743 001
Test Report No.:

Seite 53 von 54
Page 53 of 54

6 List of Tables

Table 1: List of Test and Measurement Equipment	4
Table 2: Test result of 6dB Bandwidth,	9
Table 3: Test result of Maximum Conducted Output Power	15
Table 4: Test result of Power Spectral Density	22

7 List of Figures

Figure 1: 6dB Bandwidth Measurement	10
Figure 2: Duty Cycle.....	16
Figure 3: Maximum Conducted Output Power	17
Figure 4: Power Spectral Density	23
Figure 5: Conducted Spurious Emissions	28
Figure 6: Test Results of Radiated Spurious Emissions, 30-1000MHz	37
Figure 7: Test Results of Conducted Emission on AC Mains.....	47

8 List of Photographs

Photograph 1: Set-up for Radiated Spurious Emission, 30MHz - 1GHz	50
Photograph 2: Set-up for Conducted Emission on AC Mains.....	50
Photograph 3: Overview of the EUT.....	45
Photograph 4: PCBs of the EUT	46