Test report

according to ISO/IEC 17025:2017

FCC
(Federal Communications Commission)
Test Firm Registration Number: 768032
Designation Number DE0022

ISED
(Inovation, Science and Economic Development)
CAB identifier: DE0012
ISED#: 6155A

Electromagnetic compatibility

Intentional Radiators

D-PL-17379-01-00
D-PL-17379-01-02
D-PL-17379-01-03

TESTED IN GERMANY

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Test report no.: **20/01-0031**

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Location of test facility:

STC Germany GmbH
Ohmstrasse 1
84160 Frontenhausen
Germany

1. Client information

Name:	**Vestel Elektronik Sanayi ve Ticaret A.Ş.**
Address:	**Organize Sanayi Bolgesi 45030, Yunusemre/MANISA/Turkey**
Name of contact:	Mr. Andac Pamuk
Telephone:	+90 236 2332582
Fax:	+90 236 2332584
E-mail:	Andac.pamuk@vestel.com.tr

2. Equipment under test (EUT)

2.1 Identification of the EUT

Equipment:	WIFI+BT Combo Module
Model:	17WFM25
Brand name:	-/-
Serial no.:	-/-
Manufacturer:	Vestel Elektronik San ve Tic. A.S., Organize Sanayi Bölgesi, Vestel City, High-End, 45030 MANISA, TURKEY
Country of origin:	TURKEY
Power rating:	4.75 V – 5.25 V nominal 5 V ⎓ via USB
Highest frequency generated or used in the device or on which the device operates or tunes (MHz):	5.825 GHz
Date Sample Received:	16.01.2020
Tests were performed:	05.03.2020 – 27.09.2021

2.2 Additional information about the EUT:

The EUT can also operate as 5 GHz Wifi module, but not simultaneously to the 2.4 GHz RF-function.
The 5 GHz is not documented in this Report.

To duplicate parts of this test report needs the written confirmation of the test laboratory.

The test results relate only to the above mentioned test sample(s).

3. Description of the Equipment under test and test conditions

FCC-ID:	2AVQS-17WFM25			
IC:	25888-17WFM25			
HVIN:	080419R4			
Firmware version:	V0.5.0.0, Wi-Fi Component: V1.1.0			
Software to control EUT:	MT7662 QA tool (V1.0.3.24)			
Power:	nominal 5 V ⎓, +/- 5 % via USB			
Cables:	USB cable 100 cm Cable to test adaptor 30 cm			
Approx. Size (l x w x h):	(70 x 25 x 4.5) mm			
Test conditions:	The "WIFI+BT Combo Module – 17WFM25" (= equipment under test – EUT) had been tested, where applicable, in the following modes: (1) 802.11b: Tx mode BW 20MHz CCK 1MBps 2412 MHz (2) 802.11b: Tx mode BW 20MHz CCK 1MBps 2437 MHz (3) 802.11b: Tx mode BW 20MHz CCK 1MBps 2462 MHz (4) 802.11g: Tx mode BW 20MHz OFDM 6MBps 2412 MHz (5) 802.11g: Tx mode BW 20MHz OFDM 6MBps 2437 MHz (6) 802.11g: Tx mode BW 20MHz OFDM 6MBps 2462 MHz (7) 802.11n: Tx mode BW 20MHz HT MixMode 6.5MBps 2412 MHz (8) 802.11n: Tx mode BW 20MHz HT MixMode 6.5MBps 2437 MHz (9) 802.11n: Tx mode BW 20MHz HT MixMode 6.5MBps 2462MHz (10) 802.11n: Tx mode BW 40MHz HT MixMode 6.5MBps 2422 MHz (11) 802.11n: Tx mode BW 40MHz HT MixMode 6.5MBps 2437 MHz (12) 802.11n: Tx mode BW 40MHz HT MixMode 6.5MBps 2452 MHz with an active WLAN connection as well as controlled by a test software with maximum RF-output power and different data rate in order to find the worst case.			
RF Module Model Number:	17WFM25			
Frequency range:	2.400 GHz – 2.483,5 GHz			
Type of modulation:	802.11 b	802.11 g	802.11 n [20]	802.11 n [40]
Operating frequencies [MHz]:	2412 - 2462	2412 - 2462	2412 - 2462	2422 - 2452
6 dB Bandwidth [MHz]:	9.55	15.15	16.30	35.13
Emission classification:	14M1G1D	16M5D1D	17M6D1D	36M3D1D
Transmission protocol:	CCK	OFDM	OFDM (HT Greenfield)	OFDM (HT Greenfield)
Number of channels:	1 - 11	1 - 11	1 - 11	3 - 9
Spurious Emissions:	52.79 dBµV/m @ 3m	50.03 dBµV/m @ 3m	47.91 dBµV/m @ 3m	48.20 dBµV/m @ 3m
Max. conducted RF output Power (both ant.) [dBm / mW]:	17.37 dBm 54.58 mW	14.98 dBm 31.48 mW	16.94 dBm 49.38 mW	14.38 dBm 27.43 mW
TX Power setting:	1C	1C	1C	19
Duty Cycle:	≥98%	≥ 98%	≥ 98%	≥ 98%
Module Tranmission Type:	WLAN (1TX, 1RX) / WLAN (2TX, 2RX)			
Transmission protocol Specification:	CCK OFDM OFDM (HT Greenfield)		MCS=0; 1 MBps - MCS = 11; 11 MBps MCS=0; 6 MBps - MCS = 7; 54 MBps MCS=0; 6.5 MBps - MCS = 9; 26 MBps	
Environmental conditions during tests:	Ambient temperature Relative humitity Atmospheric pressure		20 °C 40 % 962 mbar	
Antenna specification:	Model: Printed PCB Antennas Antenna 0 Gain: max. 3.4 dBi Antenna 1 Gain: max 2.12 dBi Type: ☐ External (with accessible antenna socket) ☒ Internal (integrated, PCB antenna)			

	Model: External Antennas instead of PCB Antenna 0 Antenna type 1: Jinchan JCW601, Gain: max. 3.0 dBi Antenna type 2: Taoglas WS.01.B.305151,Gain: max 4.12 dBi Type: ☒ External (with accessible antenna socket) ☐ Internal (integrated, PCB antenna)

Test standard:	- e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart C §15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz - RSS-247 issue 02 February 2017 Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

Channel List

2.4 GHz Band

Frequency Allocation for 802.11b/g/n

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

20 MHz bandwith systems, use Channel 1 – Channel 11 / TX Power setting: 1C

40 MHz bandwith systems, use Channel 3 – Channel 9 / TX Power setting: 19

The EUT has two antennas which can be used for transmitting and receiving simultaneously as 2TX and 2RX

The EUT can also operate as 5 GHz Wifi module, but not simultaneously to the 2.4 GHz RF-function.

4. Performed measurements and results

The complete list of measurements required in e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart C §15.247 is given below.

Standard:	**Standard:**	**Test Method:**		**Test requirements:** applicable:		fulfilled:	
§ 15.203	RSS-Gen issue 5	ANSI 63.10 Section 14	Antenna requirement	☒	☐	☒	☐
§ 15.207	RSS-Gen issue 5	ANSI 63.10 Section 6.2	AC Mains Conducted Emissions	☒	☐	☒	☐
§ 15.209	RSS-Gen issue 5	ANSI 63.10 Section 6.3 - 6.6	Radiated Emissions	☒	☐	☒	☐
§ 15.247	RSS-247 issue 2	ANSI 63.10 Section 11.8.1	6 dB DTS Bandwidth	☒	☐	☒	☐
§ 15.247	RSS-247 issue 2	ANSI 63.10 Section 11.9.2	Output Power of Fundamental Emissions	☒	☐	☒	☐
§ 15.247	RSS-247 issue 2	ANSI 63.10 Section 11.10.3	Maximum Power Spectral Density	☒	☐	☒	☐
§ 15.247	RSS-247 issue 2	ANSI 63.10 Section 11.13.2	Band Edges Measurement Out-of-Band Emission	☒	☐	☒	☐
	RSS-Gen issue 5	ANSI 63.10 Section 6.9.3	99% Power Bandwidth	☒	☐	☒	☐

All required / applicable tests according to the following standards were performed under Ref-No. 20/01-0031.

- e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart C §15.247 with test Method according to ANSI C63.10-2013

-RSS-247 issue 02 February 2017 Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

- e-CFR data is current as of February 06, 2020

Remark: -/-

5. Antenna requirement

Applied standards
-e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart B, § 15.203 Conducted limits

Test conditions and configuration of EUT
The EUT was configured and operated with conditions as mentioned under “Test conditions” in clause 3 above.

Module has on board printed antennas with the given gain values below. It can support also external antenna option with UF.L micro coax RF socket (with BOM option). So, there are three possible configuration for the antennas.

1) Onboard PCB Antennas Ant 0 + Ant 1

2) Antenna port 0 use external Antenna type 1, Antenna port 1 use onboard Antenna 1

3) Antenna port 0 use external Antenna type 2, Antenna port 1 use onboard Antenna 1

External and oboard Antennas:

Antenna	Type	Gain (2.4 GHz) (dBi)
PCB Onboard	Ant 0	3.4
PCB Onboard	Ant 1	2.12
JC-JCW601	Type 1	3
Taoglas_WS.01.B.305151	Type 2	4.12

Requirements:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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 provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Usage with PCB antennas There is no external antenna, the antenna gain max =3.4dBi
User is unable to remove or change the Antenna

Usage with external antennas Only Antennas which are provided by the manufacturer are allowed to install. The antenna gain max =4.12dBi
User is not alowed to change the Antenna
However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

6. AC Mains conducted emissions

Applied standards
-e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart C, § 15.207 Conducted limits
-RSS-Gen issue 05 section 7.2

Test site
Measurements of conducted emission from EUT was made in the shielded chamber (DC - 10GHz) located in the test facility.

Test equipment and test set up
Test equipment used for conducted measurements on Mains as given in clause Test equipment of this report.
Test setup used for conducted measurements on Mains as given in clause Test setups of this report.

Detector function selection and bandwidth
In conducted emissions measurement CISPR quasi-peak- and average-detector were used.
The bandwidth of the detector of instrument is 10 kHz over the frequency range of 150 kHz to 30 MHz.

Frequency range to be scanned
For conducted emission measurements, the spectrum in the range of 150 kHz to 30 MHz was investigated.

Test conditions and configuration of EUT
The EUT was configured and operated with conditions as mentioned under “Test conditions” in clause 3 above.

All modes are investigated by operating the EUT in a range of typical modes of operation, with typical cable positions, and with a typical system equipment configuration and arrangement. For each mode of operation and for each ac power current-carrying conductor, cable manipulation are performed within the range of likely configurations. The highest values measured are shown in the table below. The corresponding configuration is shown in the “Photo(s) of test setup”.
The EUT was placed on a 80 cm high non metallic table. Measurements were performed on the AC terminals of the Host AC-Adaptor, on neutral (N)- and live (L1)-wire had been performed.

Requirements

Frequency Range [MHz]	Quasi-Peak Limits [dBµV]	Average Limits [dBµV]
0.15 - 0.5	66 to 56 Note 1	56 to 46 Note 1
0.5 - 5.0	56	46
5.0 - 30.0	60	50
Note 1: The level decreases linearly with the logarithm of the frequency		

Measurement

Measruement performened on 17.03.2020

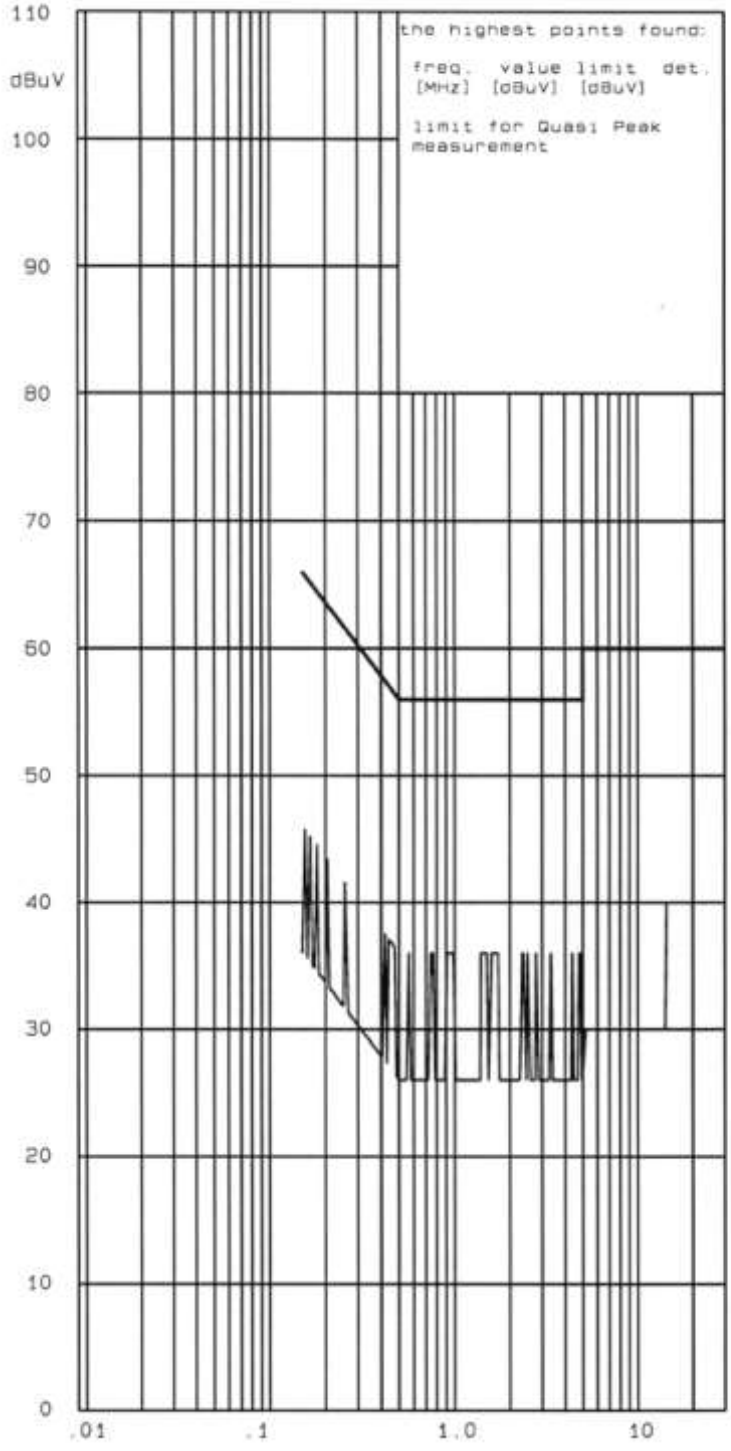
As worst cases the mode No.: 4 with conditions as mentioned under “Test conditions” in clause 3 was found and documented in this report.

I T 1 / 2

Interference Voltage 150 KHz - 30 MHz

acc. FCC Part 15.207 / RSS-Gen

Cabin 1



Ref.-No.: 20/01-0031

Product: Trans.-/Rec.-System

Sample: 02

Date: 17 Mar 2020

Operator: bl

Test equipment:

Rohde & Schwarz ESHS 30

Rohde & Schwarz ESH 2-Z5

Connected sets:

Host PC (stc)

Operating mode:

Tx ANT0+1
802.11 g20 / OFDM
Power: 1C / CH.01 (2412MHz)
Tested on N

RFI suppression parts:

* two dB safety margin for type approval recommended

Result: pass [X] fail [ ]

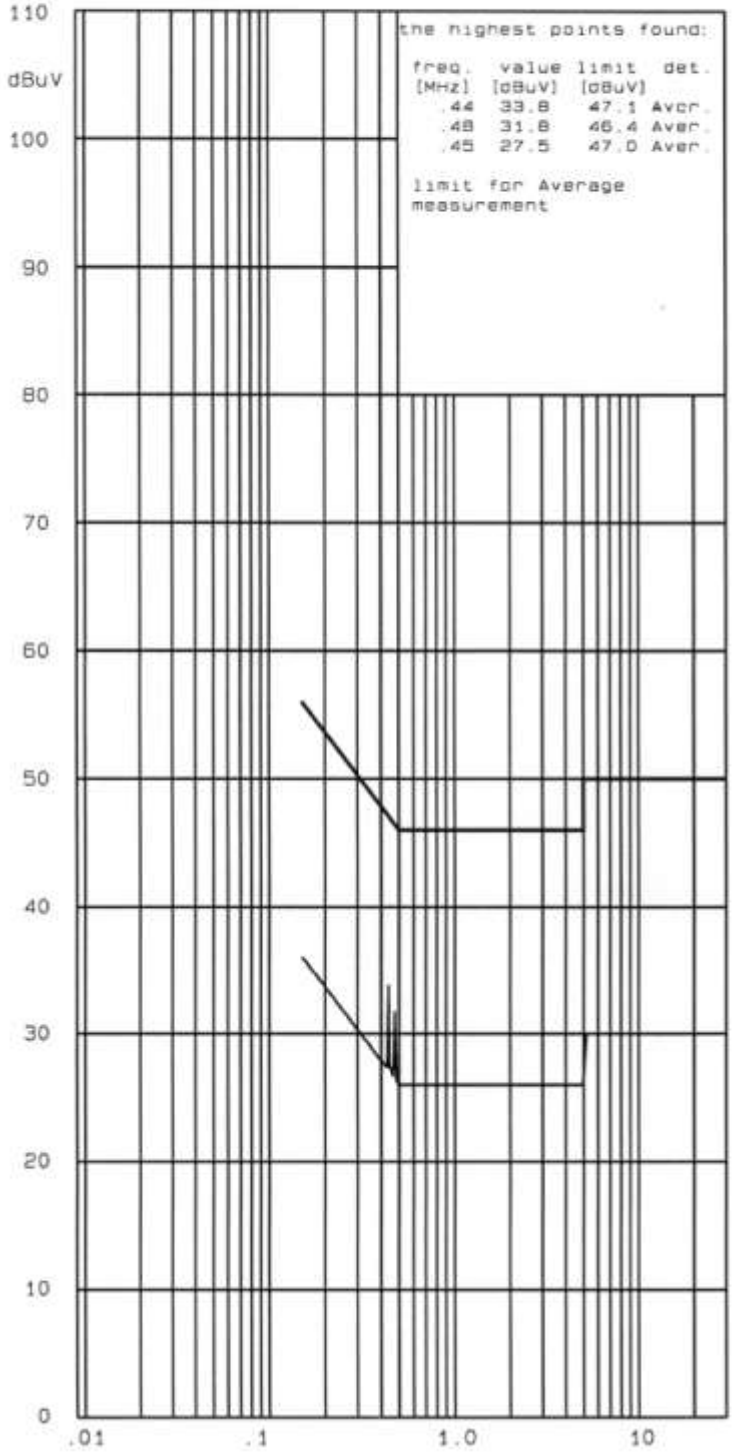
STC Germany GmbH

I T 1 / 2

Interference Voltage 150 KHz - 30 MHz

acc. FCC Part 15.207 / RSS-Gen

Cabin 1



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Product: Trans.-/Rec.-System

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Date: 17 Mar 2020

Operator: bl

Test equipment:

Rohde & Schwarz ESHS 30

Rohde & Schwarz ESH 2-Z5

Connected sets:

Host PC (stc)

Operating mode:

Tx ANT0+1
802.11 g20 / OFDM
Power: 1C / CH.01 (2412MHz)
Tested on N

RFI suppression parts:

* two dB safety margin for type approval recommended

Result: pass [X] fail [ ]

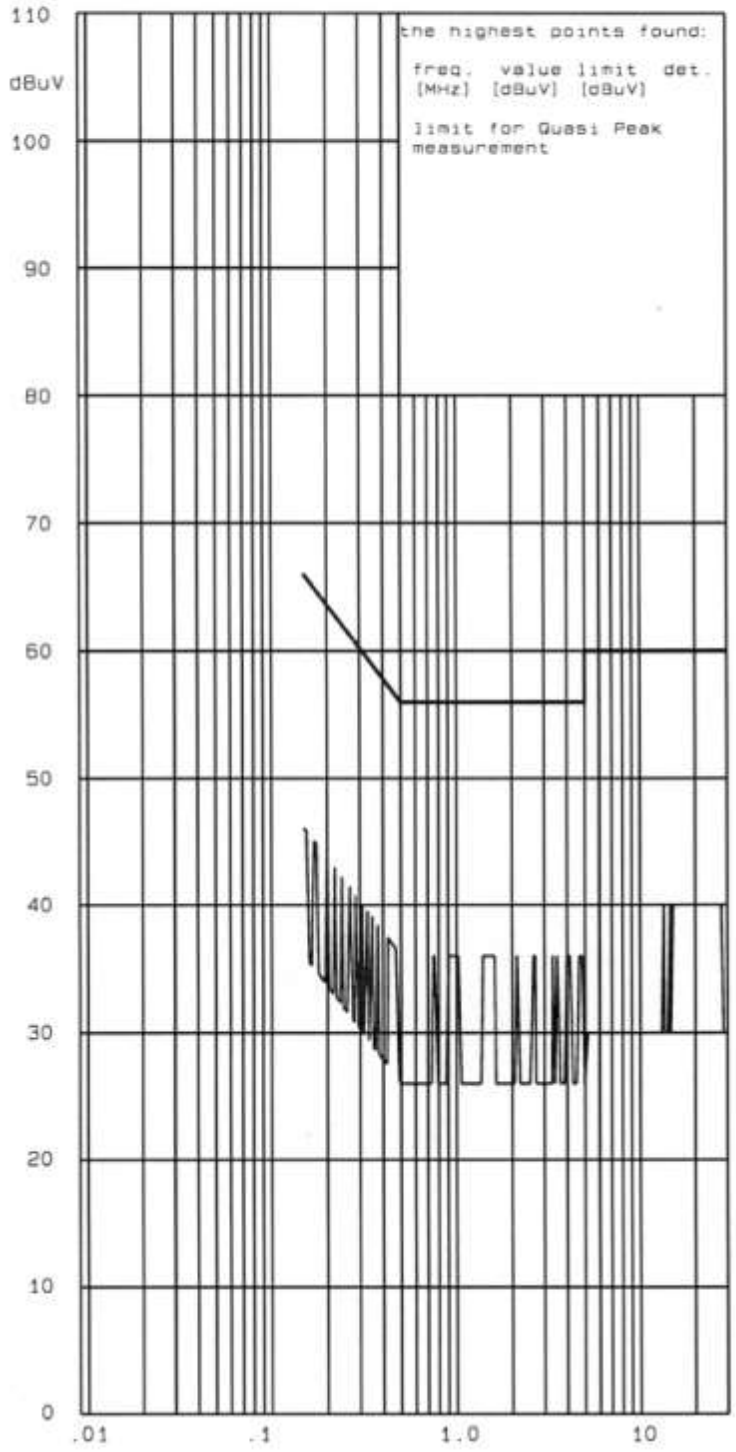
STC Germany GmbH

I T 1 / 2

Interference Voltage 150 KHz - 30 MHz

acc. FCC Part 15.207 / RSS-Gen

Cabin 1



Ref.-No.: 20/01-0031

Product: Trans.-/Rec.-System

Sample: 02

Date: 17 Mar 2020

Operator: bl

Test equipment:

Rohde & Schwarz ESHS 30

Rohde & Schwarz ESH 2-Z5

Connected sets:

Host PC (stc)

Operating mode:

Tx ANT0+1
802.11 g20 / OFDM
Power: 1C / CH.01 (2412MHz)
Tested on L1

RFI suppression parts:

* two dB safety margin for type approval recommended

Result: pass [X] fail [ ]

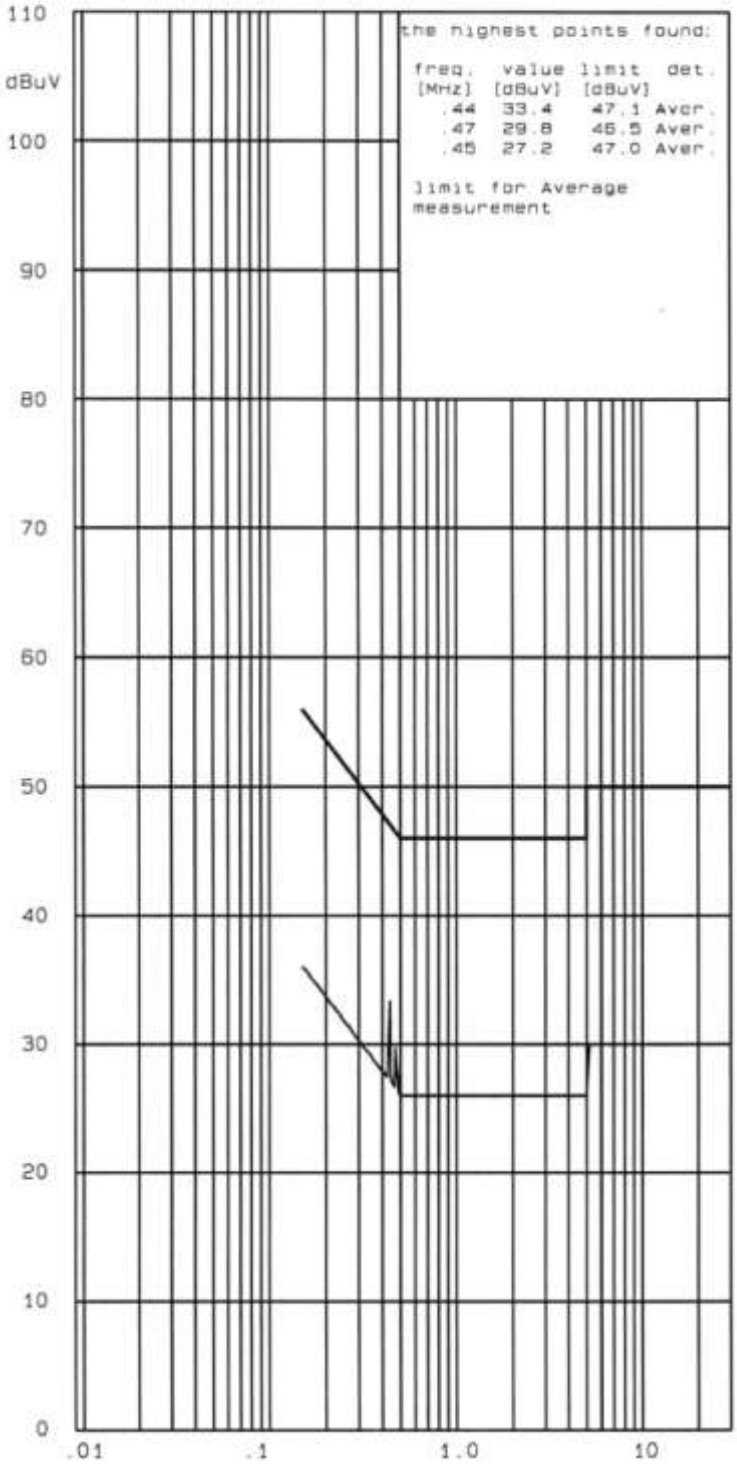
STC Germany GmbH

I T 1 / 2

Interference Voltage 150 KHz - 30 MHz

acc. FCC Part 15.207 / RSS-Gen

Cabin 1



Ref.-No.: 20/01-0031

Product: Trans.-/Rec.-System

Sample: 02

Date: 17 Mar 2020

Operator: bl

Test equipment:

Rohde & Schwarz ESHS 30

Rohde & Schwarz ESH 2-Z5

Connected sets:

Host PC (stc)

Operating mode:

Tx ANT0+1
802.11 g20 / OFDM
Power: 1C / CH.01 (2412MHz)
Tested on L1

RFI suppression parts:

* two dB safety margin for type approval recommended

Result: pass [X] fail [ ]

STC Germany GmbH

Remarks:
Composition of the measurement value:

$$\mathbf{M_{Value} = M_{Rec} + C_{Loss} + LISN_{cor}}$$

M_{Value} = Measurement Value
M_{Rec} = Reading value of test receiver
C_{Loss} = Cable loss between Receiver and LISN
$LISN_{cor}$ = LISN correction factor.

Sample calculation:

40.8 dBµV = 40.1 dBµV + 0.3 dB + 0.4 dB

Results

From the measurement data obtained, the tested sample was considered to have **COMPLIED** with the requirements for the **Conducted Emission**.

7. Radiated emission measurements

Test site
Measurement of radiated emissions from EUT was made in the semi-anechoic chamber SAC3 (DC to 40 GHz) located in the test facility.

Test equipment and test set up
Test equipment used for radiated measurements as given in clause Test equipment of this report.
Test setup used for radiated measurements as given in clause Test setups of this report.

Detector function selection and bandwidth
In radiated emissions measurement, an EMI test receiver that have CISPR detectors was used.

Frequency range	Resolution Bandwidth
9KHz – 150kHz (Quasi Peak & Average* Detector)	200Hz
150KHz – 30MHz (Quasi Peak & Average* Detector)	9kHz
30MHz – 1GHz (Quasi Peak Detector)	120kHz
Above 1GHz (Peak & Average Detector)	1MHz

*Average Detector only in specify frequency range.

Antennas
Measurements were made using a calibrated loop antenna in the range 9 kHz – 30 MHz, as well as a calibrated bilog antenna in the range of 30 to 1000 MHz to determine the emission characteristics of the EUT. Measurements were also made for both horizontal and vertical polarization.
The horizontal distance between the receiving antenna and the EUT was 3 meters.
In the range of 1 GHz to 26 GHz measurements were made using a calibrated horn antenna to determine the emission characteristics of the EUT. Measurements were also made for both horizontal and vertical polarization. The horizontal distance between the receiving antenna and the EUT was 3 meters.

Frequency range to be scanned
For radiated emissions measurements, the spectrum in the range of 9kHz MHz to 40GHz was investigated as the highest frequency generated in the EUT is 5.825 GHz.

Test conditions and configuration of EUT

The EUT was configured and operated with conditions as mentioned under “Test conditions” in clause 3 above.

During test the EUT was operated as specified in the user manual of the EUT. For frequencies below 1000 MHz the EUT was placed on a 80 cm and for frequencies above 1000 MHz the RF Transmitter modul was placed on a 150 cm high non metallic table placed on the turntable. The EUT was rotated and the antenna height was varied between 1 m to 4 m to find the maximum RF energy generated from EUT. The procedure according to ANSI C63.10:2013 is used and all modes are investigated by operating the EUT in a range of typical modes of operation, with typical cable positions, and with a typical system equipment configuration and arrangement. For each mode of operation, cable manipulation are performed within the range of likely configurations. The highest values measured are shown in the table below.

As worst cases the mode No. 3 and 4 with conditions as mentioned under “Test conditions” in clause 3 were found and documented in this report

Remarks:
-Correction factor included antenna factor and cable attenuation.
-In the frequency range 1 GHz – 7 GHz the Band Reject Filter 2,4 GHz (ID11243) was used to attenuate the fundamental emission.

Applied standards
-e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart C, § 15.209 Radiated emission limits
-RSS-Gen issue 05 section 8.9

Requirements

acc. e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart C, § 15.209 Radiated emission limits

Frequency MHz	Limits [µV/m] Quasi-peak	Limits [dBµV/m] Quasi-peak	Limits [µV/m] Average	Limits [dBµV/m] Average	Test distance [m]
0.009 – 0.090	-/-	-/-	2400/F (kHz)	48.5 – 28.5	300
0.090 - 0.110	2400/F (kHz)	28.5 – 26.8	-/-	-/-	300
0.110 – 0.490	-/-	-/-	2400/F (kHz)	26.8 – 13.8	300
0.490 - 1.705	24000/F (kHz)	33.8 – 23.0	-/-	-/-	30
1.705 - 30.0	30	29.5	-/-	-/-	30

acc. RSS-Gen issue 05 section 8.9

Frequency MHz	Limits [µA/m] Quasi-peak	Limits [dBµA/m] Quasi-peak	Limits [µA/m] Average	Limits [dBµA/m] Average	Test distance [m]
0.009 – 0.090	-/-	-/-	6.37/F (kHz)	-3 – -23.0	300
0.090 - 0.110	6.37/F (kHz)	-23.0 – -24.7	-/-	-/-	300
0.110 – 0.490	-/-	-/-	6.37/F (kHz)	-24.7 – -37.7	300
0.490 - 1.705	63.7/F (kHz)	-17.7 – -28.5	-/-	-/-	30
1.705 - 30.0	0.08	-22	-/-	-/-	30

acc. e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart C, § 15.209 Radiated emission limits and RSS-Gen issue 05 section 8.9

Frequency MHz	Limits [µV/m] Quasi-peak	Limits [dBµV/m] Quasi-peak	Limits [µV/m] Average	Limits [dBµV/m] Average	Test distance [m]
30 - 88	100	40	-/-	-/-	3
88 - 216	150	43.5	-/-	-/-	3
216 - 960	200	46	-/-	-/-	3
960 - 1000	500	54	-/-	-/-	3
Above 1000	-/-	-/-	500	54	3

Measurements

The Measurement was performed on: 16.03.2020 and 17.09.2021

Result 9 kHz – 30 MHz

In the frequency range 9 kHz – 30 MHz the EUT had been scanned in a distance of 3 m and
the Limit were corrected to the test distance of 3 m using a factor with 40 dB/decade acc. to § 15.31 (f)(2).

Result 9 kHz – 30 MHz

Operation Mode: Mode No.: 3 with 802.11b 20MHz CH11

TESTED IN GERMANY

IT 3/4

Interference radiation (9kHz – 30MHz)

acc.FCC Subpart C § 15.209

STC

Ref.-No.: 20/01-0031

Product: Transmitting/Receiving System

Sample: 02

Date: 16.03.2020

Operator: BI

Remarks:

pass fail

Result: ☒ ☐

Operation mode: Tx ANT0+1; 802.11 b20; CCK; Power 1C; CH11 (2462MHz)

Position X (9kHz - 150kHz)

Position: X									
		Detector QP							
Frequ. [MHz]	**Level [dBµV/m]**	**Margin to Limit [dB]**	**Limit [dBµV/m]**	**Result**					
9kHz - 150kHz	-/-	>20	-/-	**pass**					

TESTED IN GERMANY

IT 3/4

Interference radiation (9kHz – 30MHz)

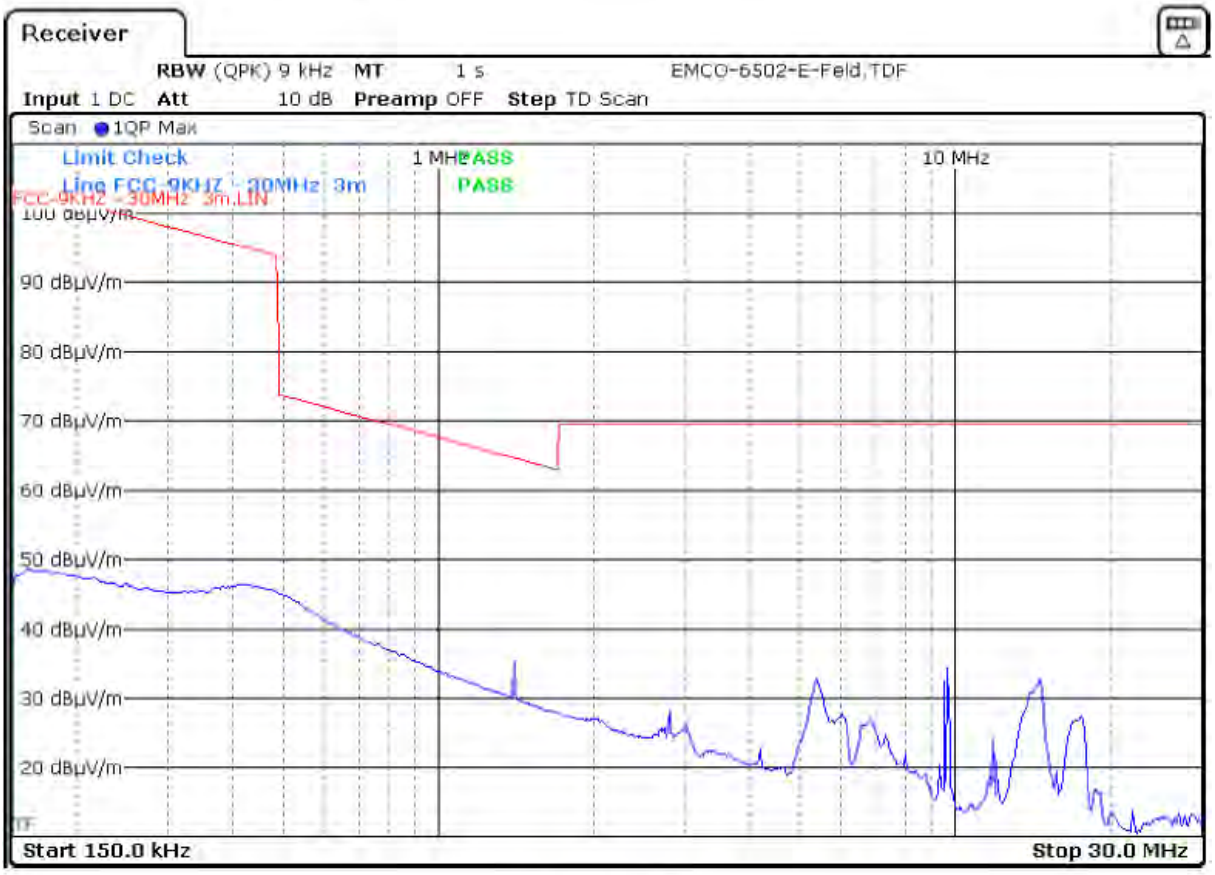
acc.FCC Subpart C § 15.209

STC

Ref.-No.: 20/01-0031

Operation mode: Tx ANT0+1; 802.11 b20; CCK; Power 1C; CH11 (2462MHz)

Position X (150kHz – 30MHz)



Position: X									
		Detector QP							
Frequ. [MHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result					
150kHz-30MHz	-/-	>20	-/-	pass					

Summery result for frequency range 9 kHz - 30 MHz to show combliance with RSS-Gen limits:

Function	Freq.	Measured Value @ 3m	Conversion to magnetic field[Note 1]		Limit @ 3m		Margin	Result
	[MHz]	[dBµV/m]	[dBµA/m]	[µA/m]	[dBµA/m]	[µA/m]	[dB]	
Transmitting	0.009 – 0.490	< 50.0	<- 1.5	-/-	77 - 42.3	-/-	>20	Pass
	0.490 – 1.705	< 47.0	< -4.5	-/-	22.3 - 11.5	-/-	>20	Pass
	1.705 - 30	< 38.0	< -13.5	-/-	18	-/-	>20	Pass

Note 1: Converstion E-field to H-Field:
x [dBµV/m] – 51.5 = y [dBµA/m]

Converstion [dBµA/m] in [µA/m]
10 ^ (y [dBµA/m] / 20) = z [µA/m]

Remarks:
Composition of the measurement value (Freq.-range < 30 MHz):

$$\mathbf{M_{Value} = M_{Rec} + C_{Loss} + AF_{Rec}}$$

M_{Value} = Measurement Value
M_{Rec} = Reading value of test receiver
C_{Loss} = Cable loss between Receiver and Antenna
AF_{Rec} = Antenna factor.

Sample calculation:

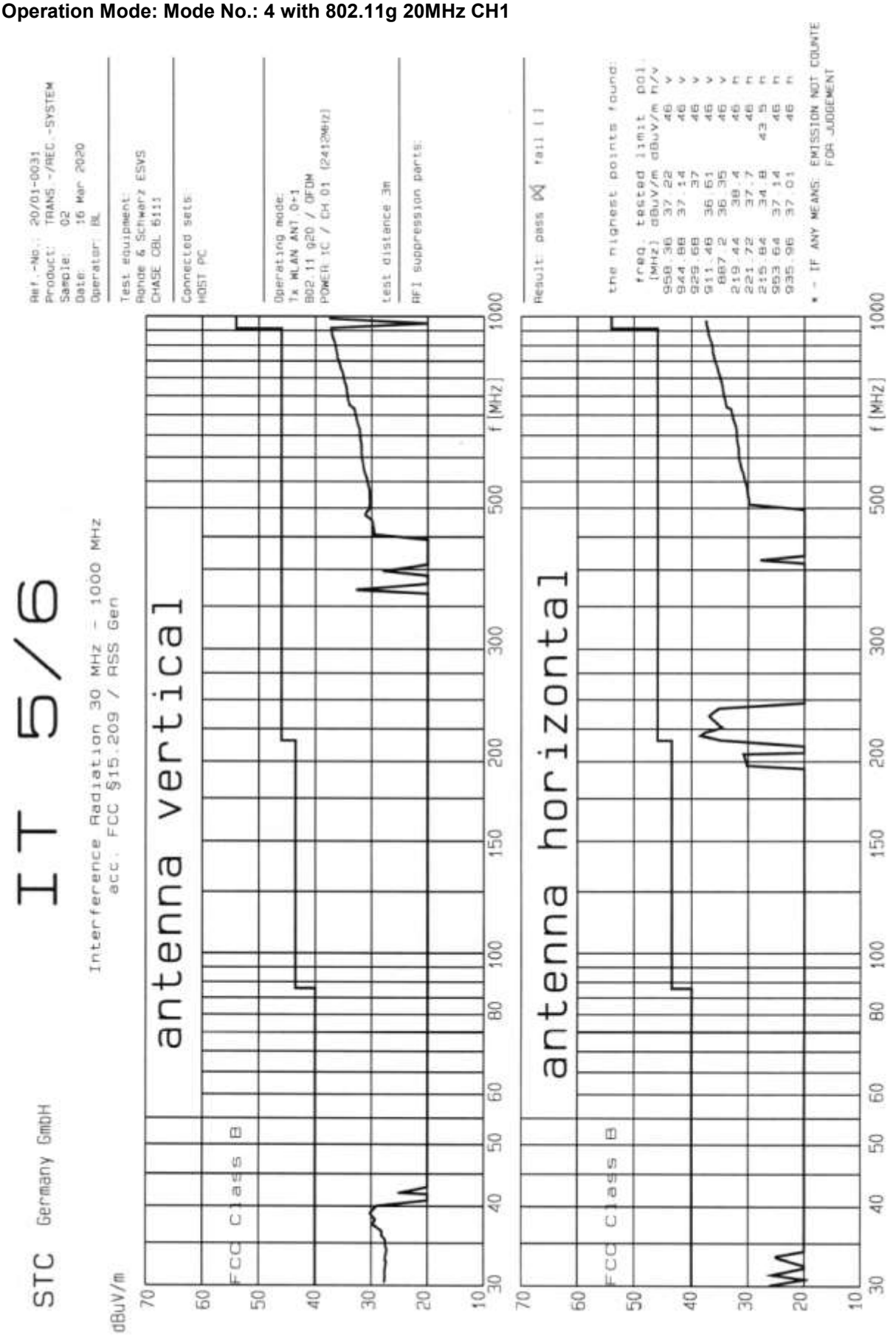
38.2 dBµV = 18.3 dBµV + 0.1 dB + 19.8 dB

All emissions in the frequency range 9 kHz – 30 MHz are at least 20 dB below the relevant limit.

Mode 3 (Channel 11) is worst case (represents also other modes and channels)

Result 30 MHz – 1000 MHz

Operation Mode: Mode No.: 4 with 802.11g 20MHz CH1



Remarks:
Composition of the measurement value (Freq.-range 30 MHz – 1000 MHz):

$$\mathbf{M_{Value} = M_{Rec} + C_{Loss} + AF_{Rec}}$$

M_{Value} = Measurement Value
M_{Rec} = Reading value of test receiver
C_{Loss} = Cable loss between Receiver and Antenna
AF_{Rec} = Antenna factor.

Sample calculation:

38.7 dBµV = 18.3 dBµV + 0.6 dB + 19.8 dB

Result 1 GHz – 7 GHz

Mode No.: 3 with 802.11n 20MHz CH11 internal antenna 0+1

TESTED IN GERMANY

IT 5/6

Interference radiation

acc. to FCC § 15.209 / RSS-Gen

STC

Ref.-No.: 20/01-0031

Product: Transmitting/Receiving System

Sample: 02

Date: 16.03.2020

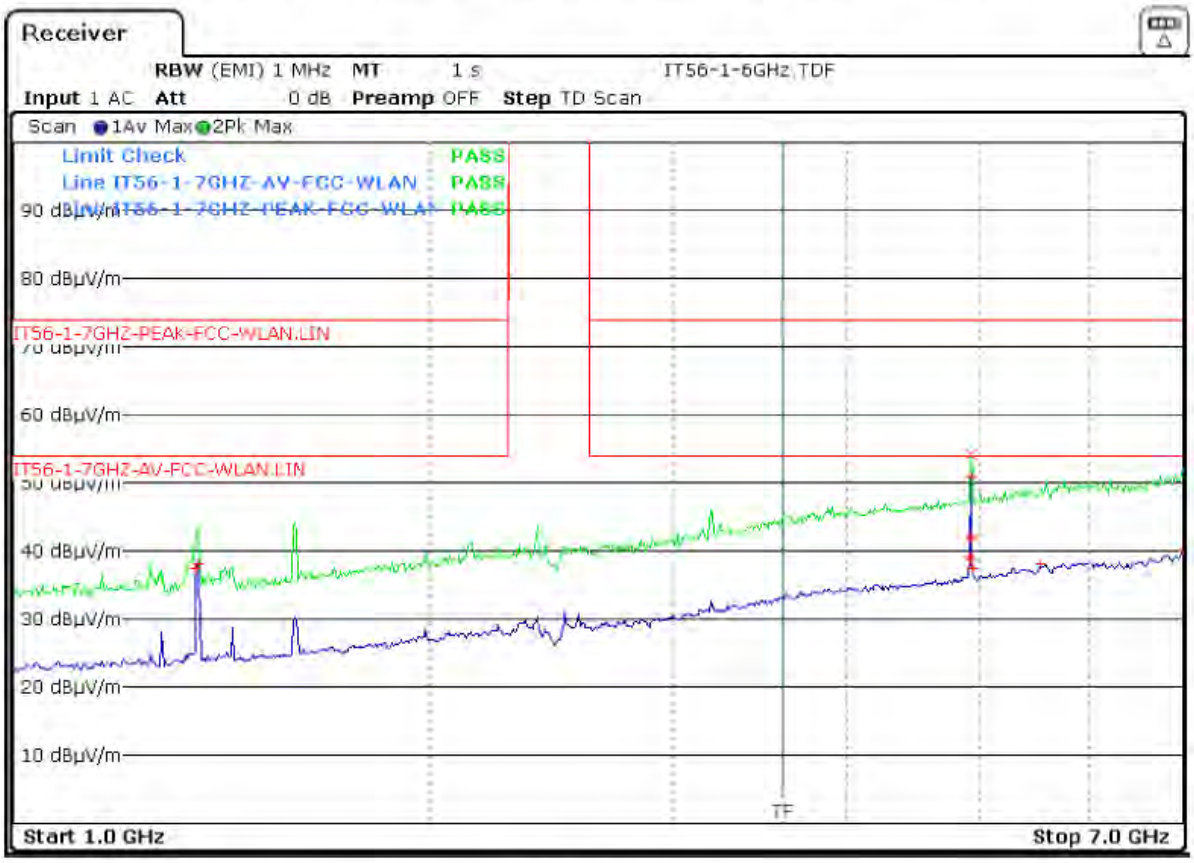
Operator: BI

Remarks:

pass ☒ fail ☐

Result:

Operation mode: Tx CH.11 (2462MHz); Mode: 802.11 b20; CCK; Power: 1C; ANT.0+1



Polarisation: V									
Detector Average					Detector Peak				
Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result	Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result
4,9240	50,96	-3,04	54,00	pass	4,9240	54,15	-19,85	74,00	pass
4,9210	42,17	-11,83	54,00	pass					
4,9270	41,73	-12,27	54,00	pass					
6,9990	39,98	-14,02	54,00	pass					
4,9130	39,16	-14,84	54,00	pass					
4,9160	38,80	-15,20	54,00	pass					

TESTED IN GERMANY

IT 5/6

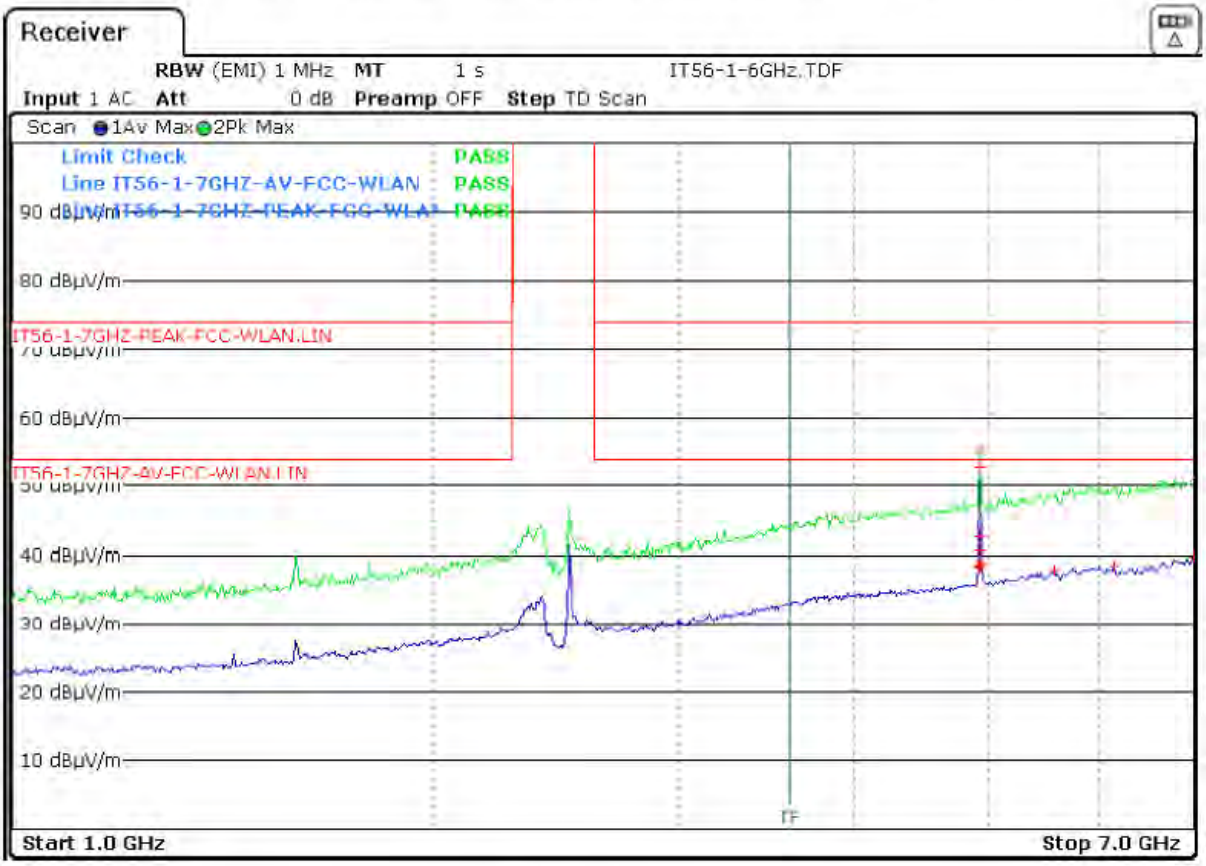
Interference radiation

acc. to FCC § 15.209 / RSS-Gen

STC

Ref.-No.: 20/01-0031

Operation mode: Tx CH.11 (2462MHz); Mode: 802.11 b20; CCK; Power: 1C; ANT.0+1



Polarisation: H									
Detector Average					Detector Peak				
Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result	Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result
4,9240	52,79	-1,21	54,00	pass	4,9240	55,45	-18,55	74,00	pass
4,9210	42,51	-11,49	54,00	pass					
4,9270	40,56	-13,44	54,00	pass					
6,9998	39,74	-14,26	54,00	pass					
4,9350	38,86	-15,14	54,00	pass					
6,1448	38,56	-15,44	54,00	pass					

Result 1 GHz – 7 GHz

Mode No.: 12 with 802.11n 40MHz CH09 external antenna typ 1 (Jinchan JCW601)

TESTED IN GERMANY

IT 5/6

Interference radiation

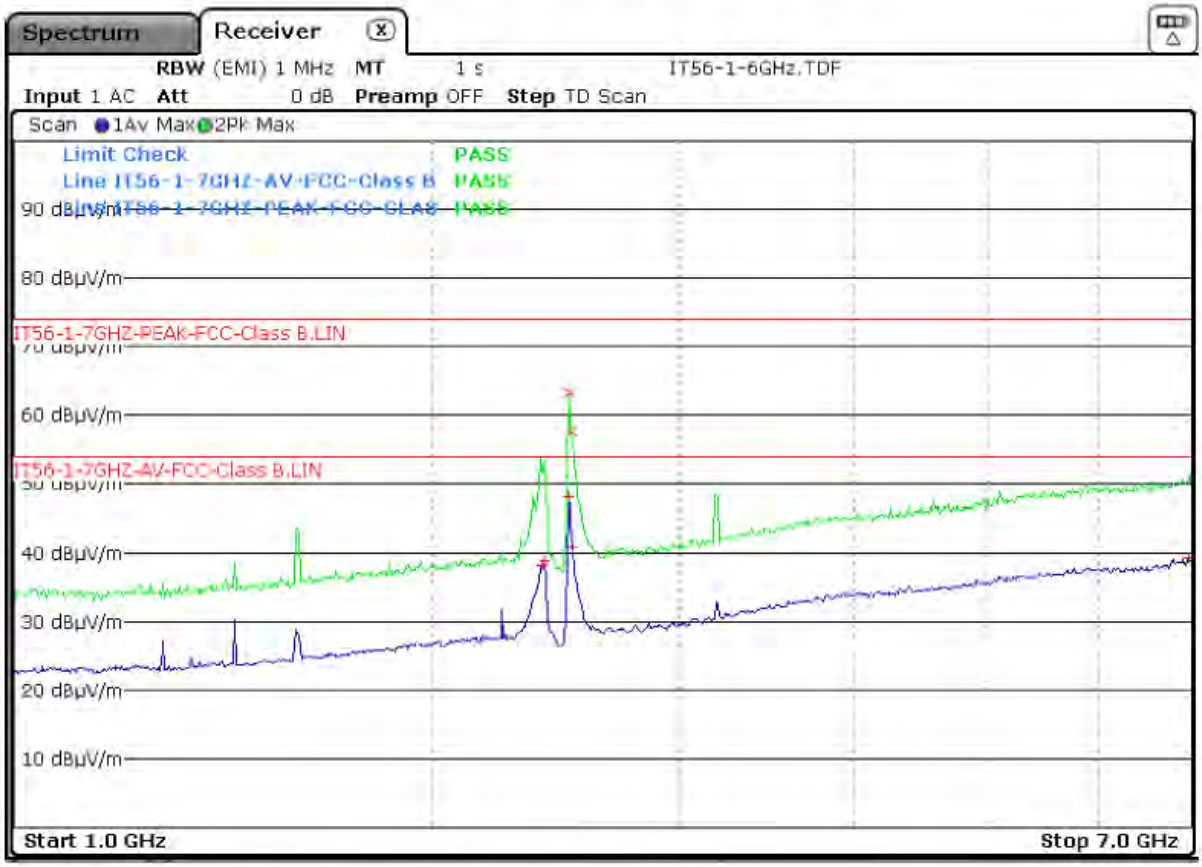
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.:	20/01-0031
Product:	Transmitting / Receiving System
Sample:	01
Date:	02.08.2021
Operator:	Ro
Remarks:	Antenna 1 (Jinchan JCW601), Power setting 1C

pass ☒ fail ☐ Result:

Operation mode: WLAN 802.11n, CH.09, HT: Greenfield, BW= 40 MHz



Polarisation: V									
Detector Average					Detector Peak				
Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result	Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result
2,4983	47,96	-6,04	54,00	pass	2,4980	63,27	-10,73	74,00	pass
2,5185	40,81	-13,19	54,00	pass	2,5143	57,61	-16,39	74,00	pass
6,9583	39,32	-14,68	54,00	pass	2,4020	52,41	-17,59	70,00	pass
2,4048	39,00	-15,00	54,00	pass					
2,3890	38,34	-15,66	54,00	pass					

TESTED IN GERMANY

IT 5/6

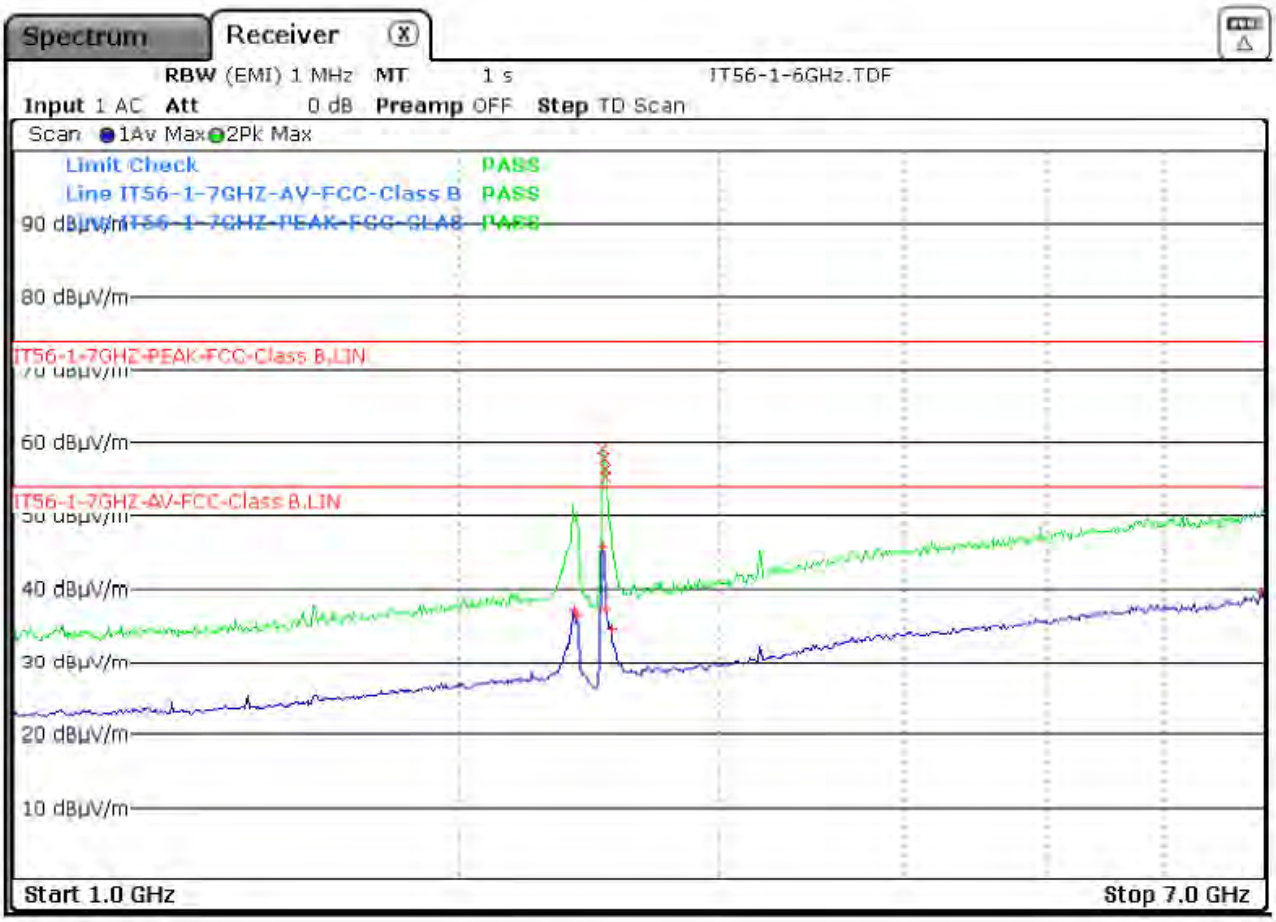
Interference radiation

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operation mode: WLAN 802.11n, CH.09, HT: Greenfield, BW= 40 MHz



Polarisation: H									
Detector Average					Detector Peak				
Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result	Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result
2,4983	47,96	-6,04	54,00	pass	2,4983	59,07	-14,93	74,00	pass
2,4980	45,69	-8,31	54,00	pass	2,5070	57,78	-16,22	74,00	pass
6,9583	39,49	-14,51	54,00	pass	2,4020	52,41	-17,59	70,00	pass
2,5148	37,34	-16,66	54,00	pass	2,5148	56,25	-17,75	74,00	pass
2,3888	37,11	-16,89	54,00	pass	2,5095	55,14	-18,86	74,00	pass
2,4040	36,55	-17,45	54,00	pass					

Result 1 GHz – 7 GHz

Mode No.: 12 with 802.11n 40MHz CH09 external antenna typ 2 (Taoglas WS.01.B.305151)

TESTED IN GERMANY

IT 5/6

Interference radiation

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Product: Transmitting / Receiving System

Sample: 01

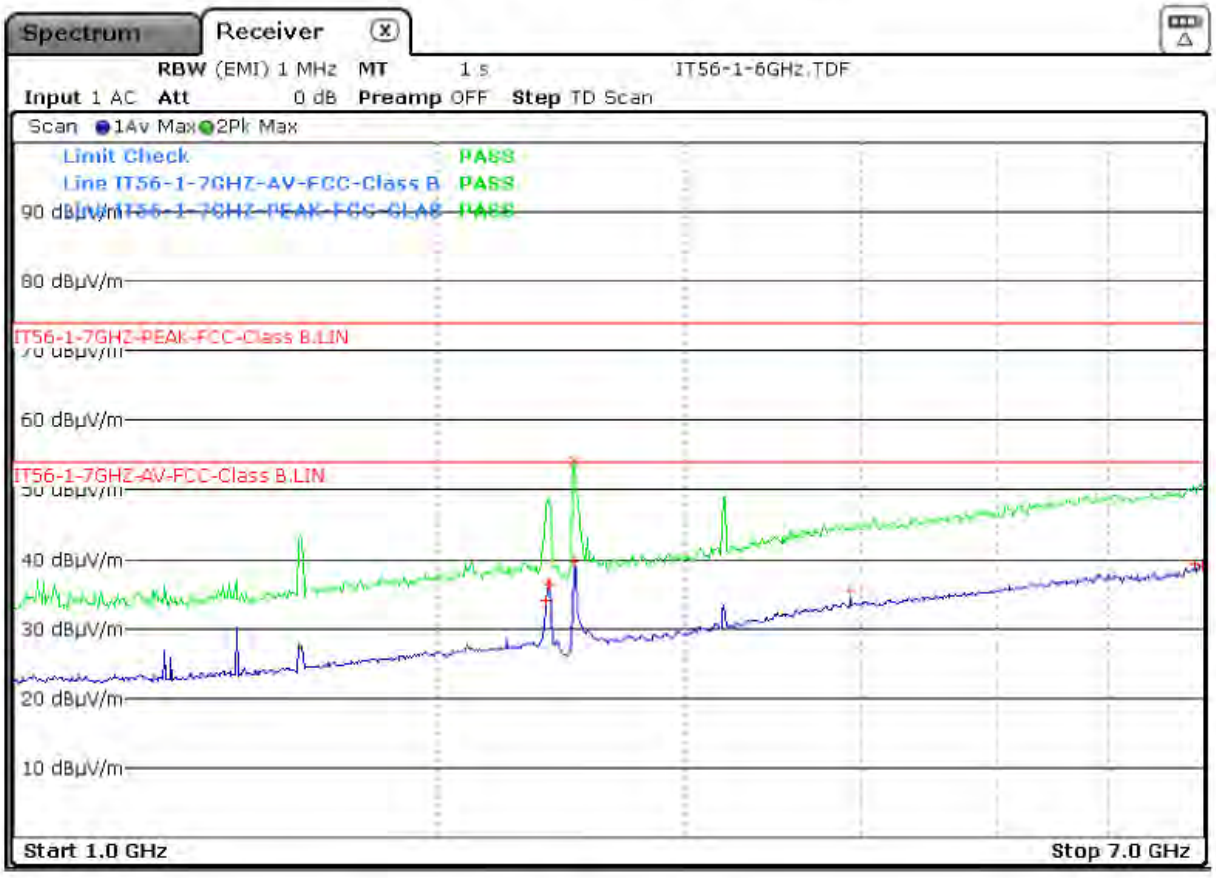
Date: 02.08.2021

Operator: Ro

Remarks: Antenna 2 (Taoglas WS.01.B.305151), Power setting 1C

	pass	fail
Result:	☒	☐

Operation mode: WLAN 802.11n, CH.09, HT: Greenfield, BW= 40 MHz



Polarisation: V									
Detector Average					Detector Peak				
Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result	Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result
2,4983	47,96	-6,04	54,00	pass	2,4980	54,20	-19,80	74,00	pass
2,4980	45,69	-8,31	54,00	pass					
6,9583	39,49	-14,51	54,00	pass					
2,5148	37,34	-16,66	54,00	pass					
2,3888	37,11	-16,89	54,00	pass					

TESTED IN GERMANY

IT 5/6

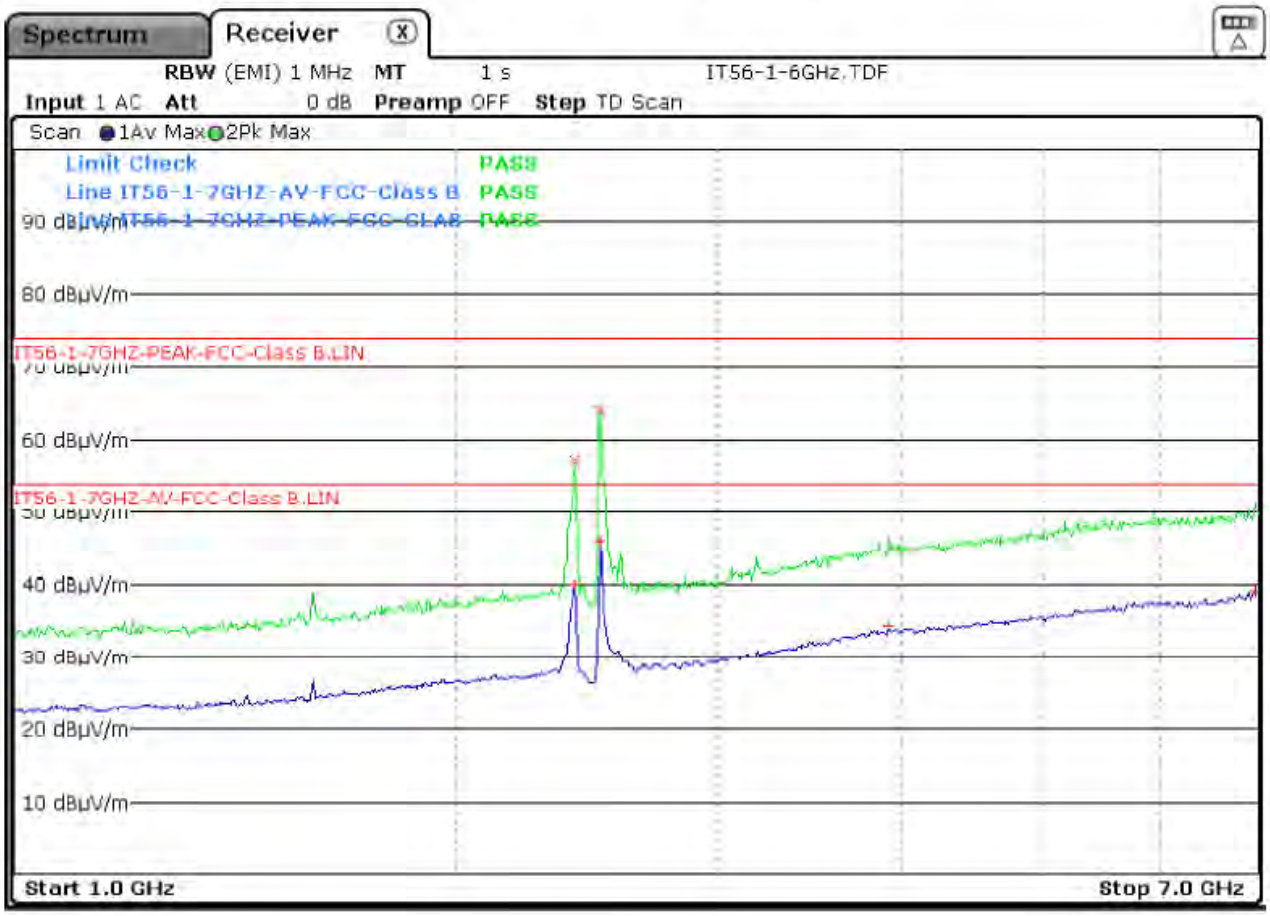
Interference radiation

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operation mode: WLAN 802.11n, CH.09, HT: Greenfield, BW= 40 MHz



Polarisation: H									
Detector Average					Detector Peak				
Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result	Frequ. [GHz]	Level [dBµV/m]	Margin to Limit [dB]	Limit [dBµV/m]	Result
2,4980	45,91	-8,09	54,00	pass	2,4980	63,96	-10,04	74,00	pass
2,4040	40,08	-13,92	54,00	pass	2,4058	57,22	-16,78	74,00	pass
6,9688	39,16	-14,84	54,00	pass					
3,9233	34,44	-19,56	54,00	pass					

Remarks:
Composition of the measurement value (Freq.-range 1 GHz – 7 GHz):

$$\mathbf{M_{Value} = M_{Rec} + C_{Loss} + AF_{Rec} - G_{Amp}}$$

M_{Value} = Measurement Value
M_{Rec} = Reading value of test receiver
C_{Loss} = Cable loss between Receiver and Antenna
AF_{Rec} = Antenna factor.
G_{Amp} = Gain Amplifier

Sample calculation:

39.7 dBµV = 53.01 dBµV + 0.9 dB + 24.19 dB -38.4 dB

Result 7GHz – 40GHz

All emissions in the frequency range 7 GHz – 40 GHz are at least 20 dB below the relevant limit

Mode 12 (Channel 09) is worst case (represents also other modes and channels)

From the measurement data obtained, the tested sample was considered to have COMPLIED with the requirements for the Radiated Emissions.

8. Operation within the band 902-928 MHz, 2400-2483,5 MHz and 5725-5850 MHz

Applied standards
-e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart C §15.247
-RSS-247 issue 2

8.1. 6 dB DTS Bandwidth Measurement

Applied standards
-e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart C §15.247 (a) (2)
-RSS-247 issue 2 Section 5.2 (a)

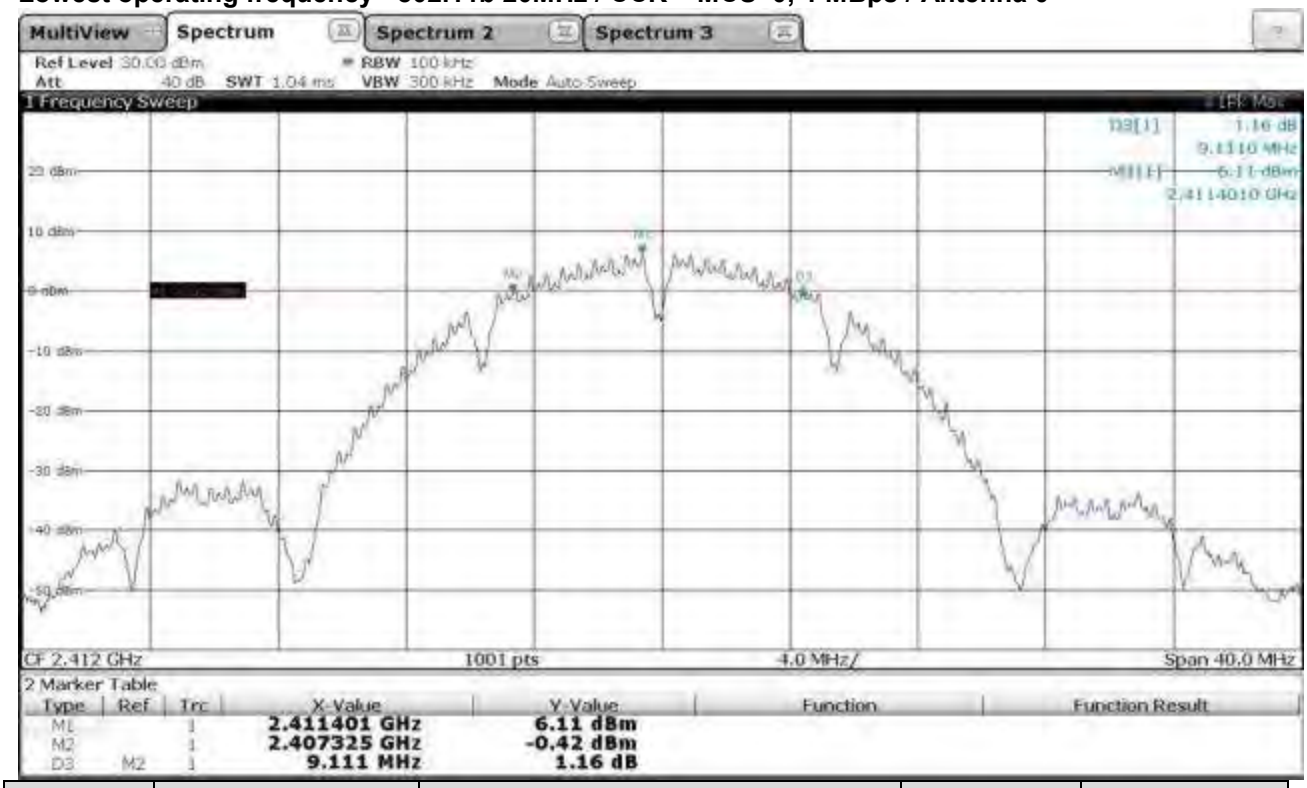
Limit
The minimum 6 dB bandwidth shall be at least 500 kHz.

Test equipment and test set up
Test equipment used for conducted measurements as given in clause Test equipment of this report.
Test setup used for conducted measurements as given in clause Test setups of this report.

Description
Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

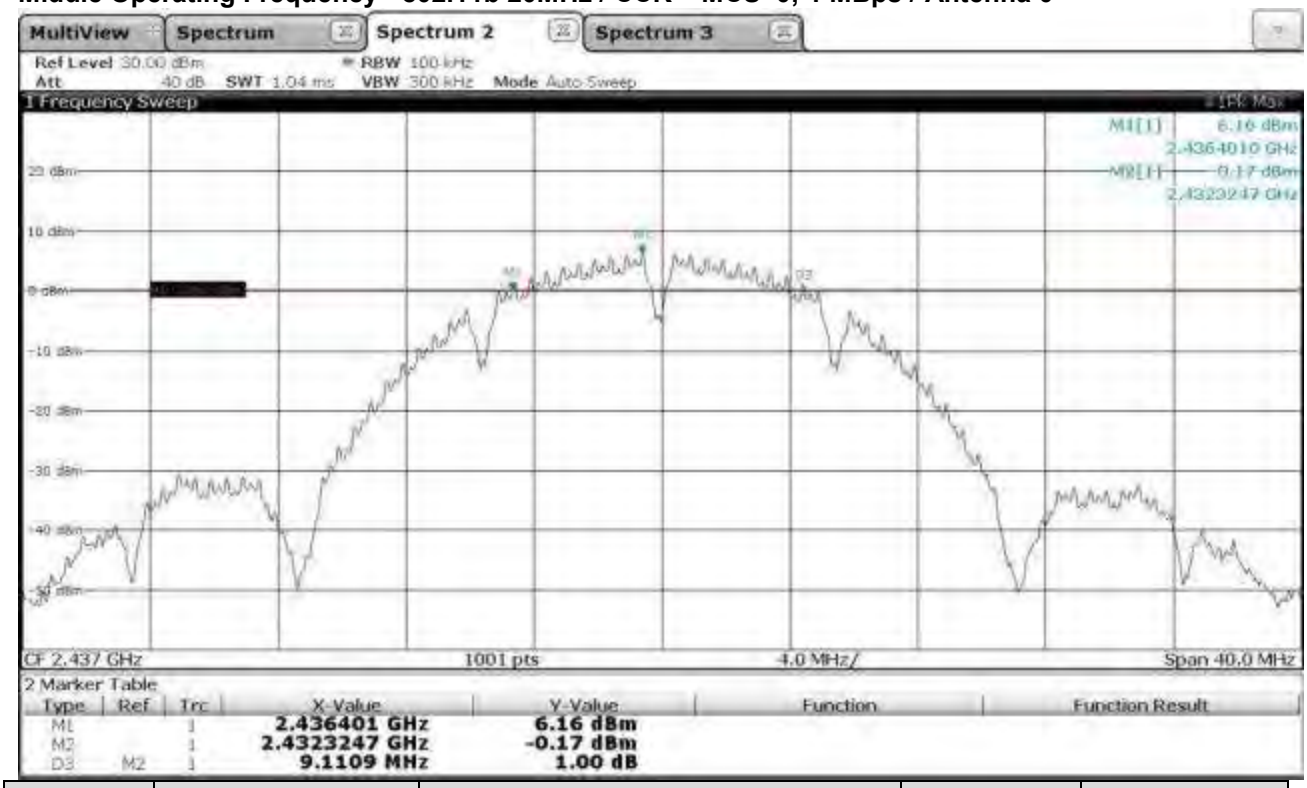
The Measurement was performed on: 06.03.2020 and 09.03.2020

Lowest operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 0



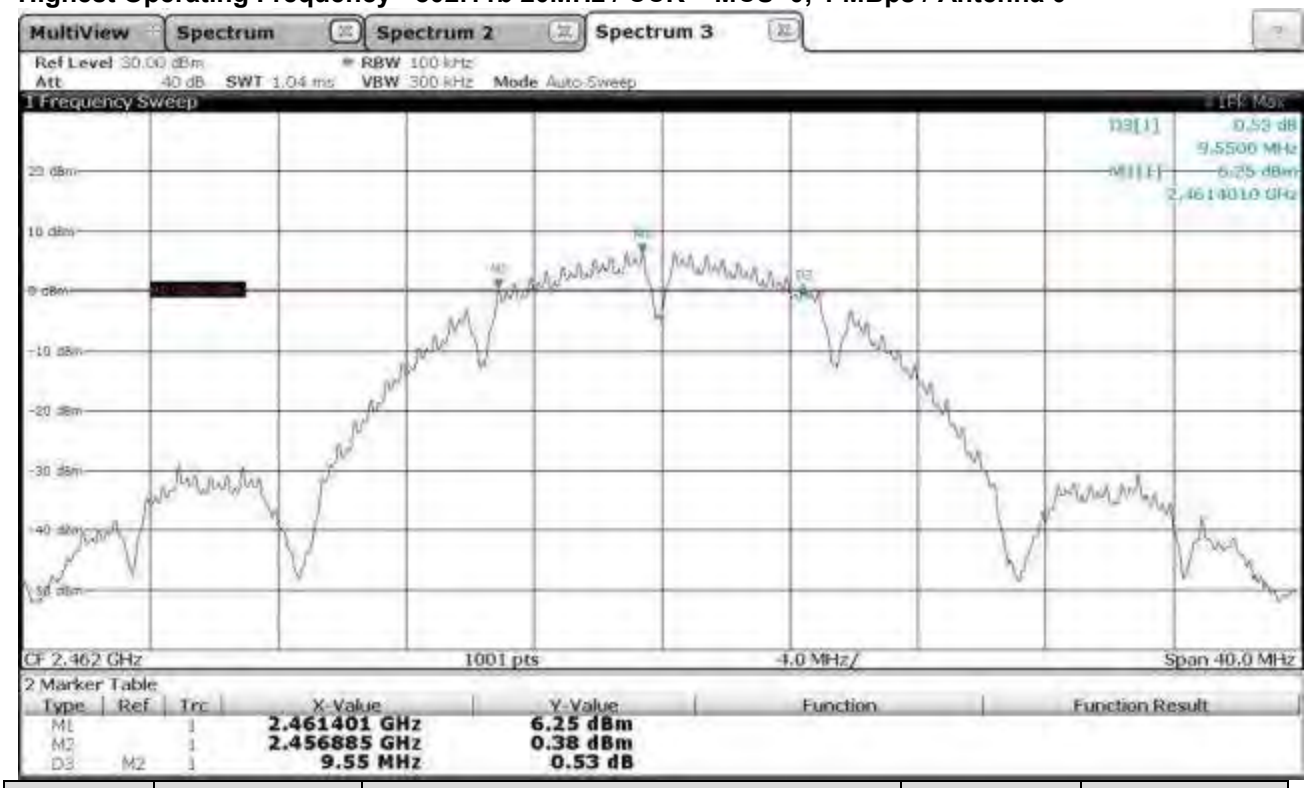
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
1	2412	9.111	0.5	Pass

Middle Operating Frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 0



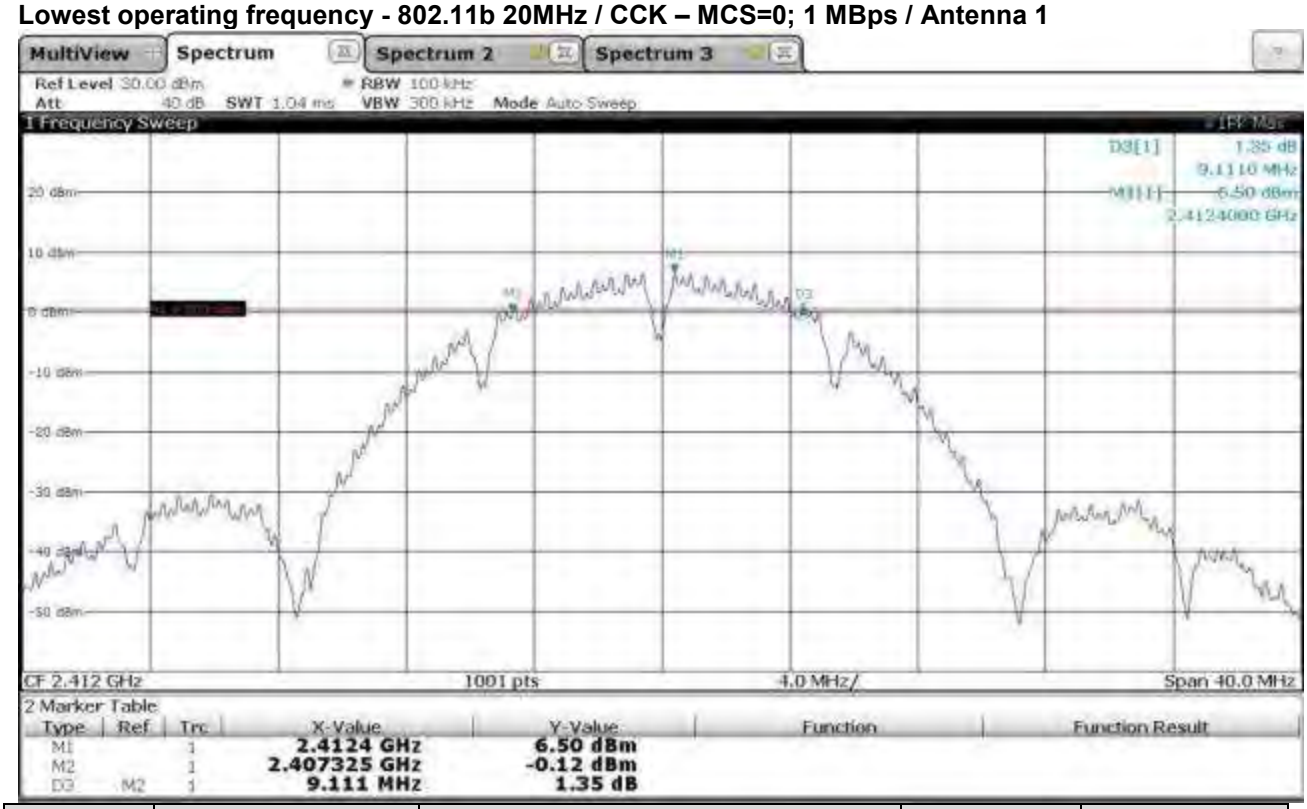
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
6	2437	9.1109	0.5	Pass

Highest Operating Frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 0



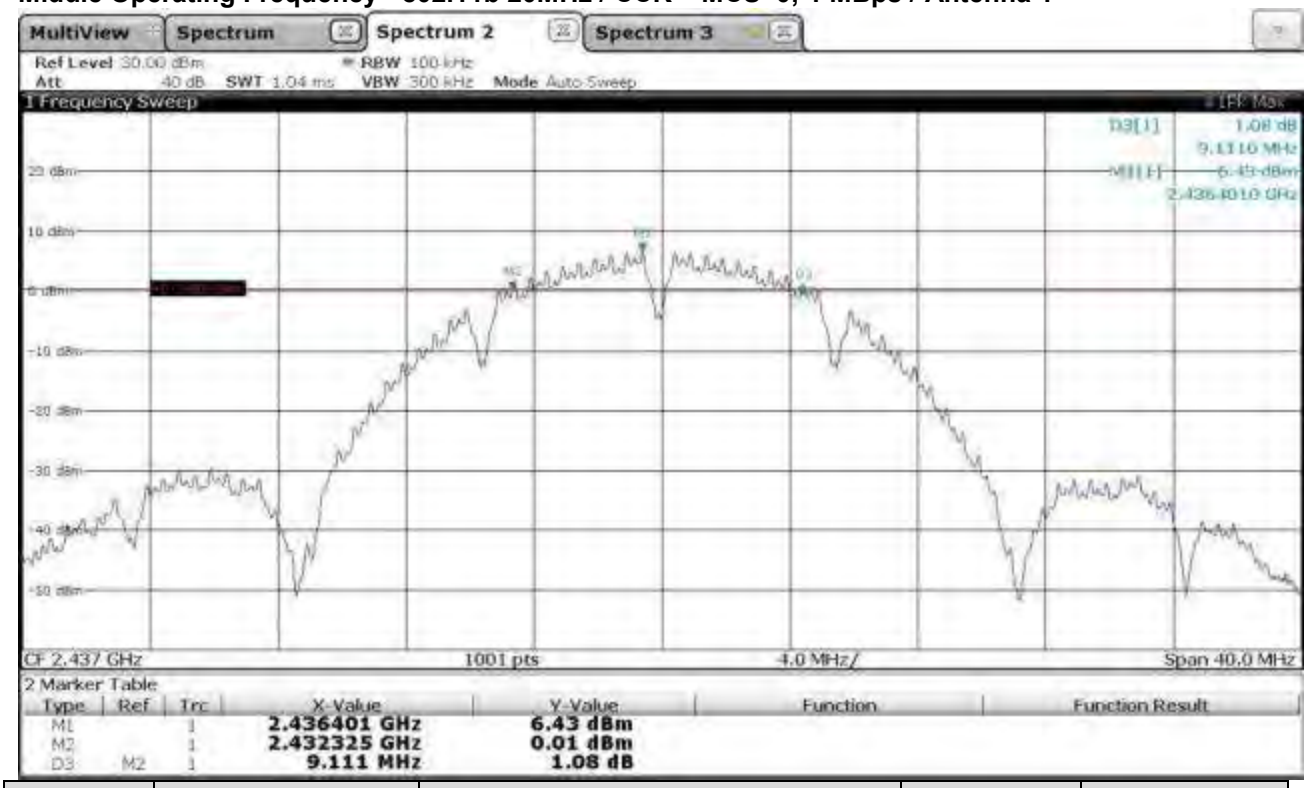
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
11	2462	9.55	0.5	Pass

Lowest operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 1



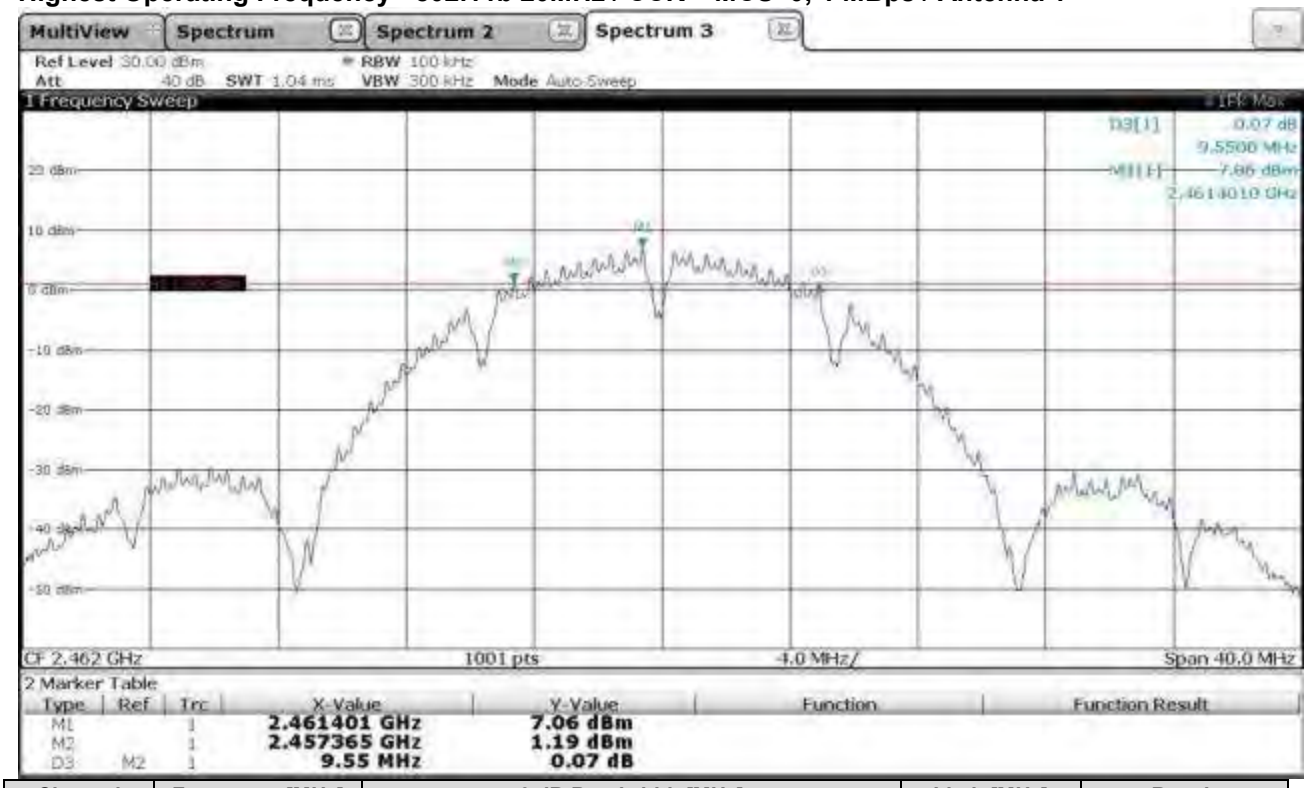
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
1	2412	9.111	0.5	Pass

Middle Operating Frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 1



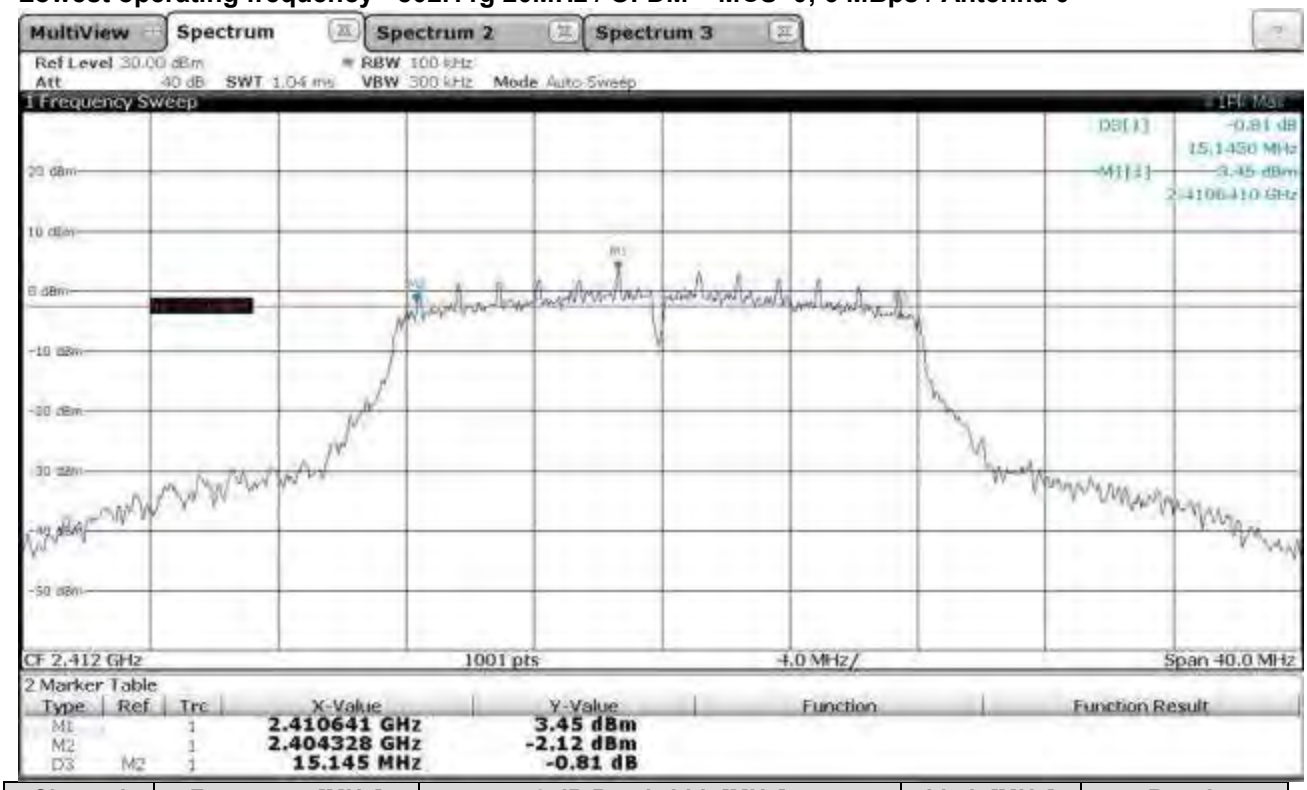
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
6	2437	9.111	0.5	Pass

Highest Operating Frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 1



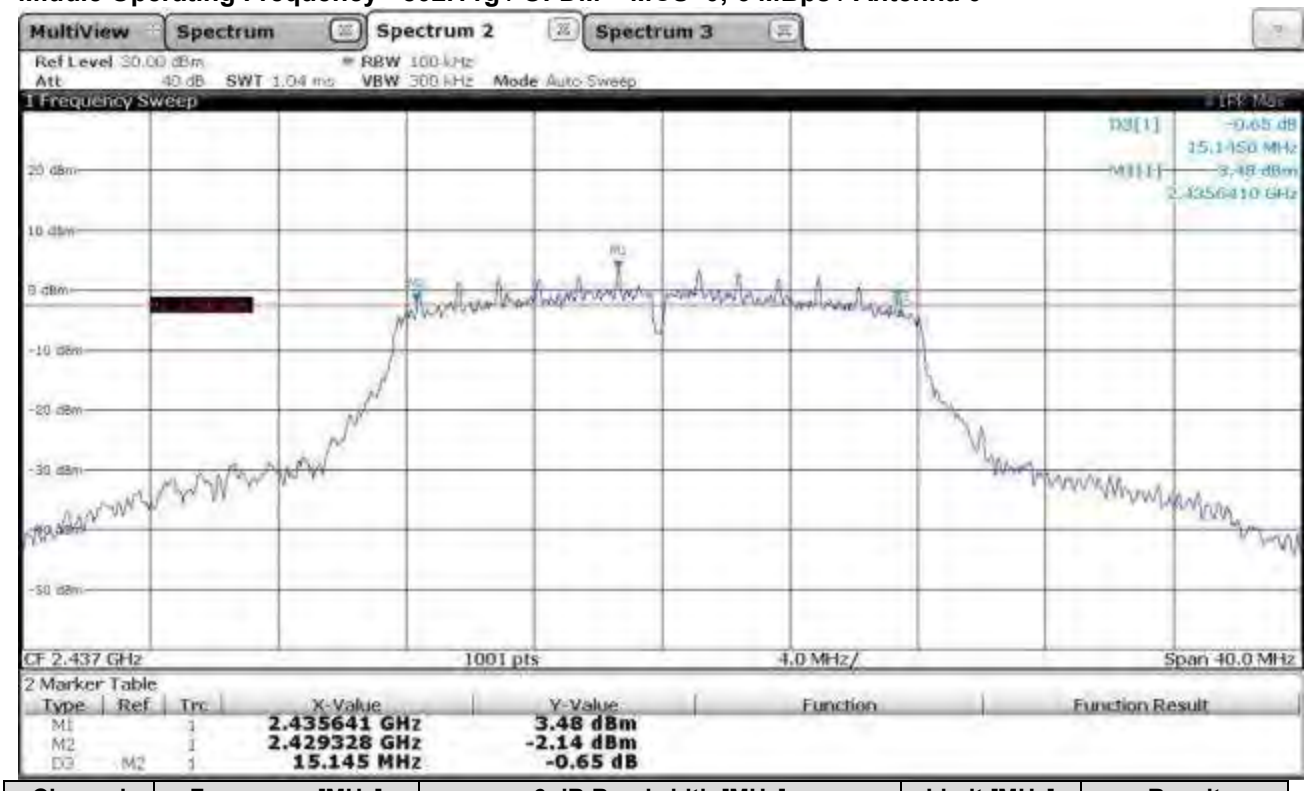
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
11	2462	9.55	0.5	Pass

Lowest operating frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 0



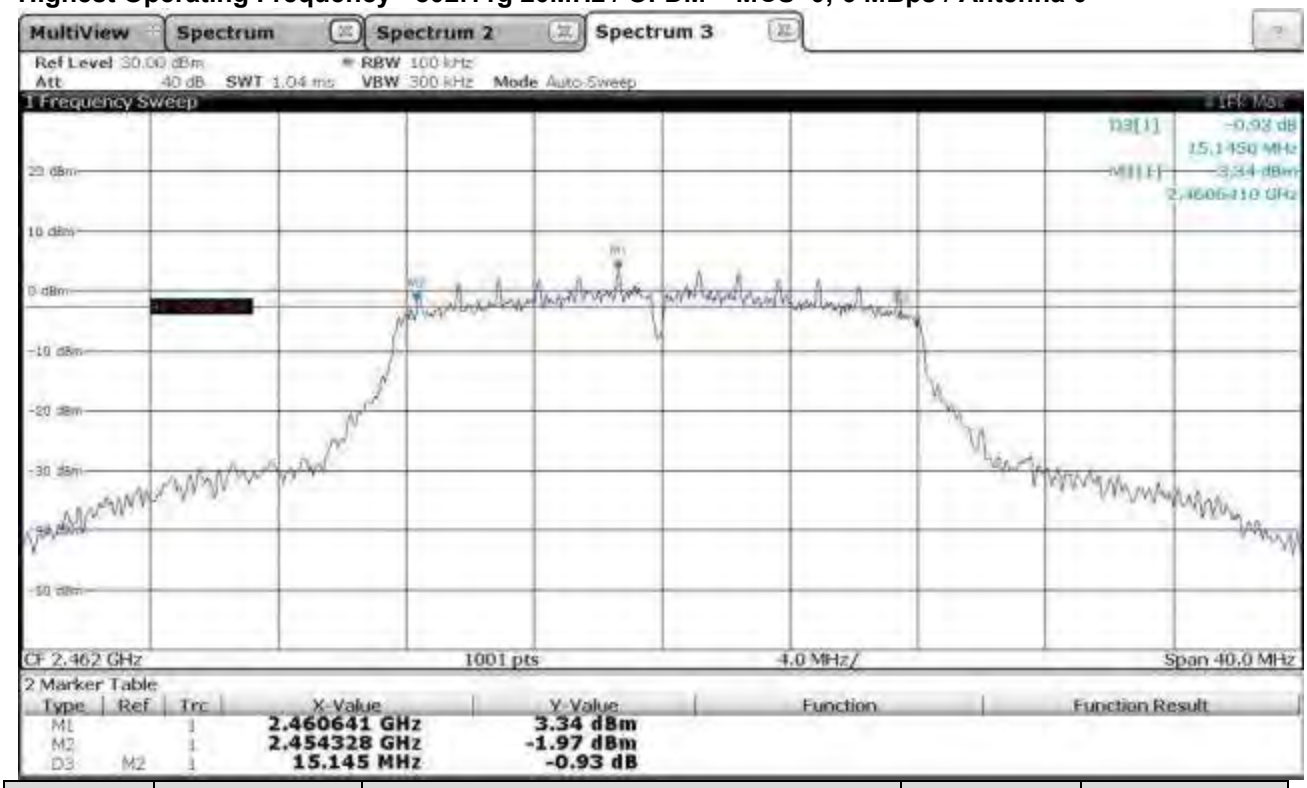
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
1	2412	15.145	0.5	Pass

Middle Operating Frequency - 802.11g / OFDM – MCS=0; 6 MBps / Antenna 0



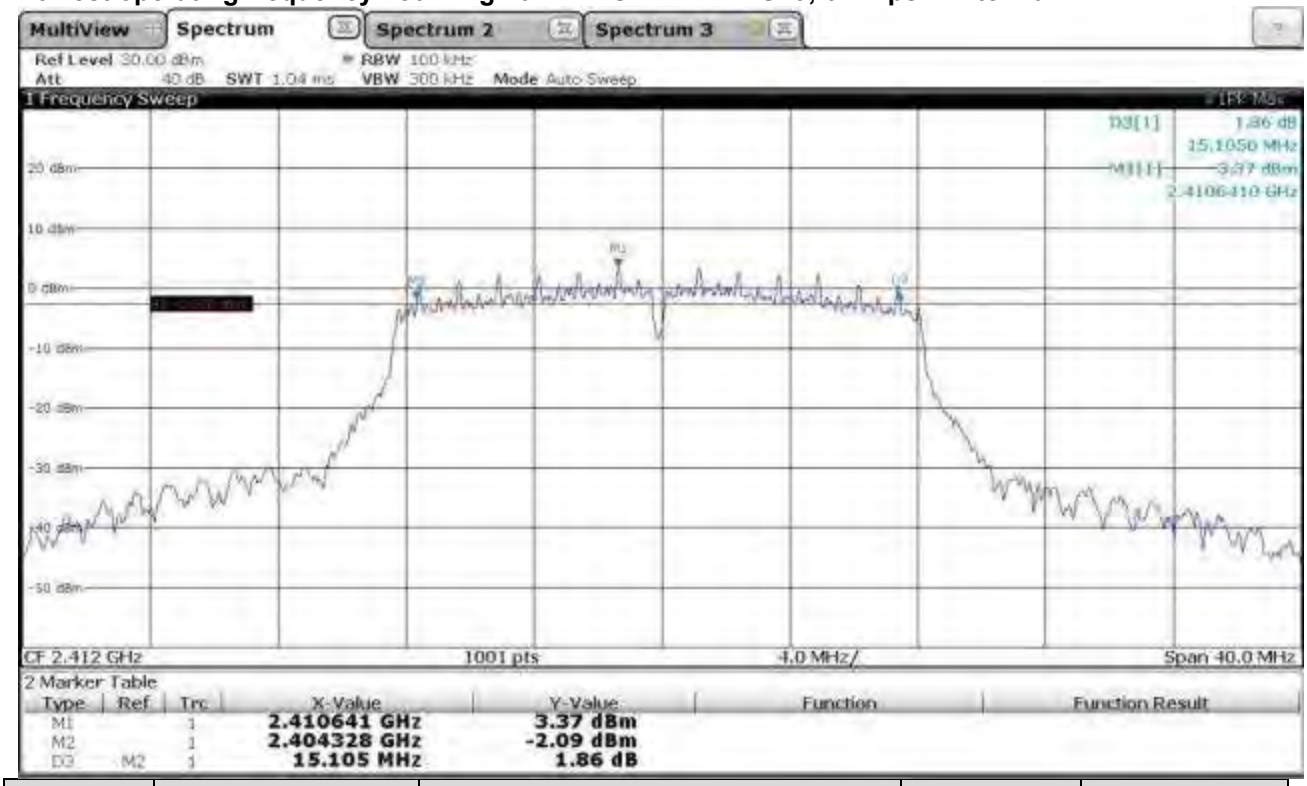
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
6	2437	15.145	0.5	Pass

Highest Operating Frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 0



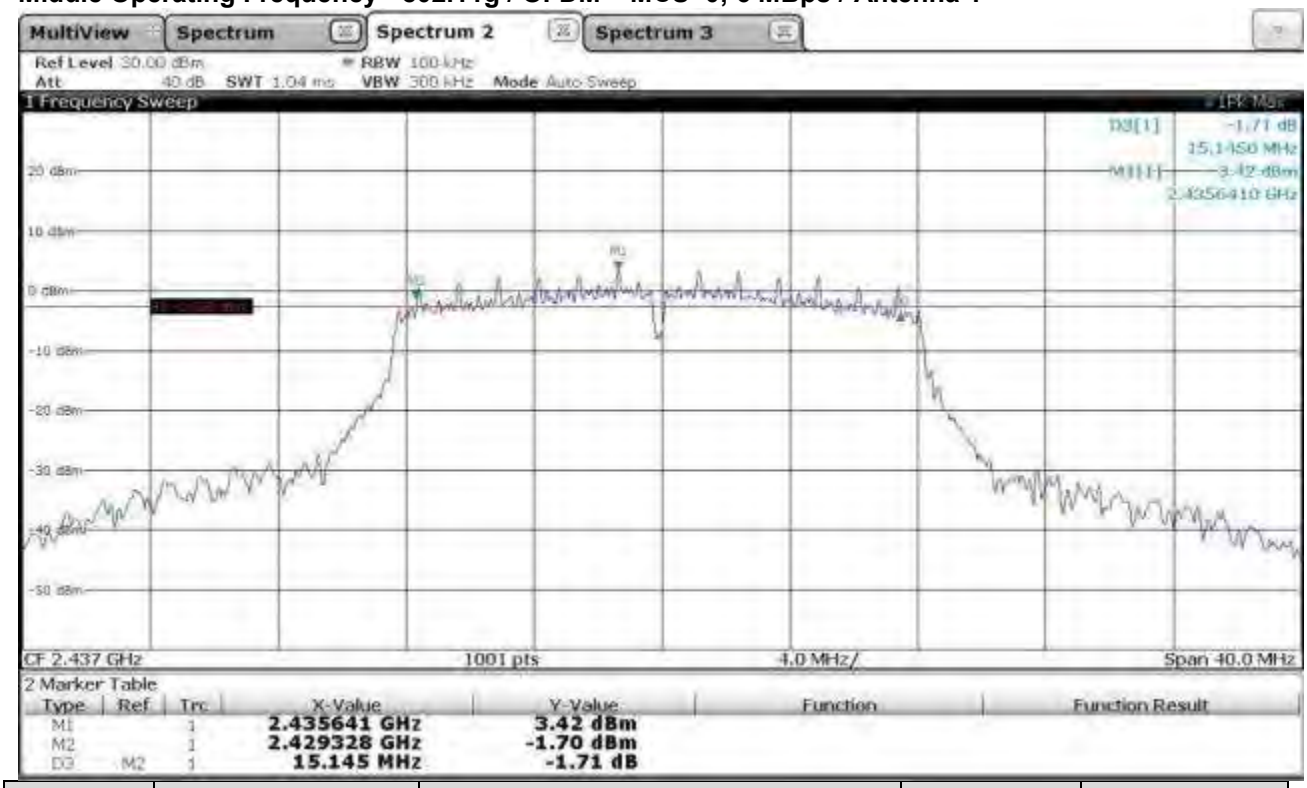
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
11	2462	15.145	0.5	Pass

Lowest operating frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 1



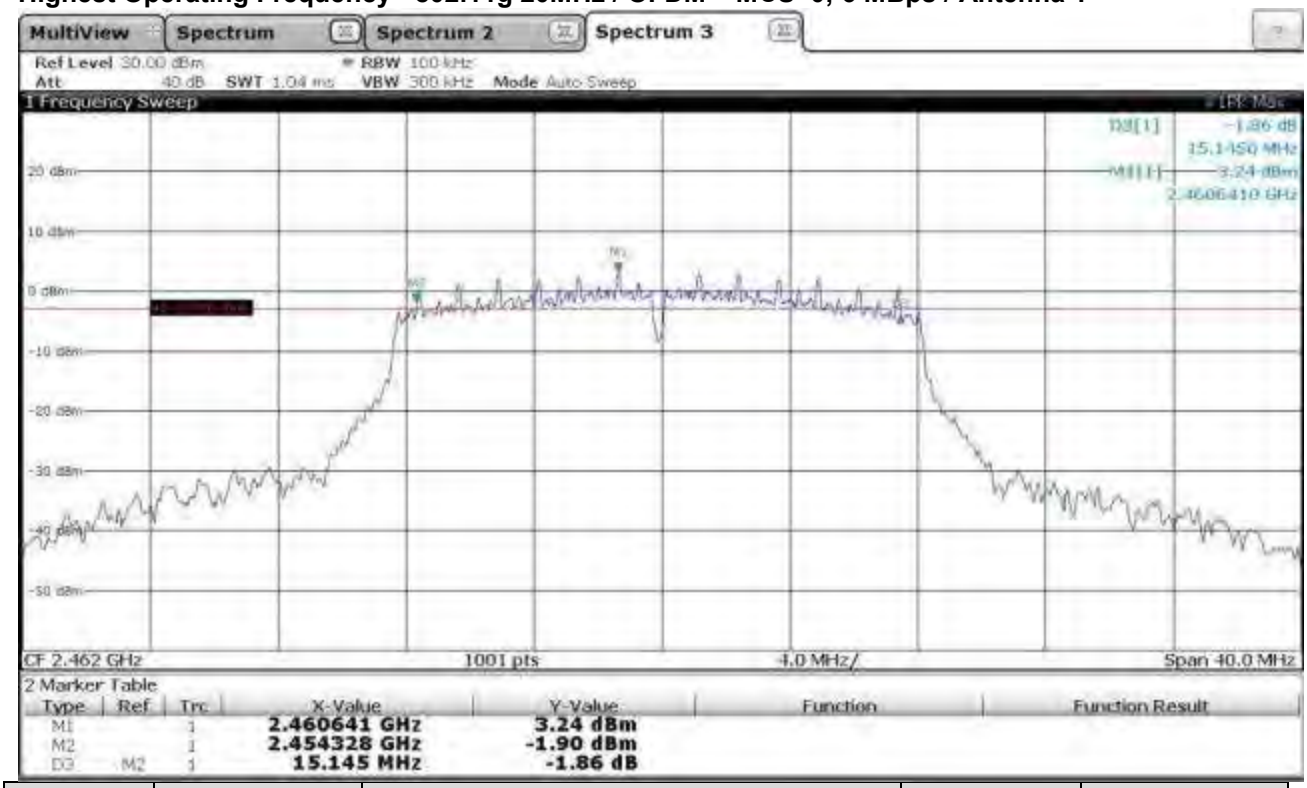
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
1	2412	15.105	0.5	Pass

Middle Operating Frequency - 802.11g / OFDM – MCS=0; 6 MBps / Antenna 1



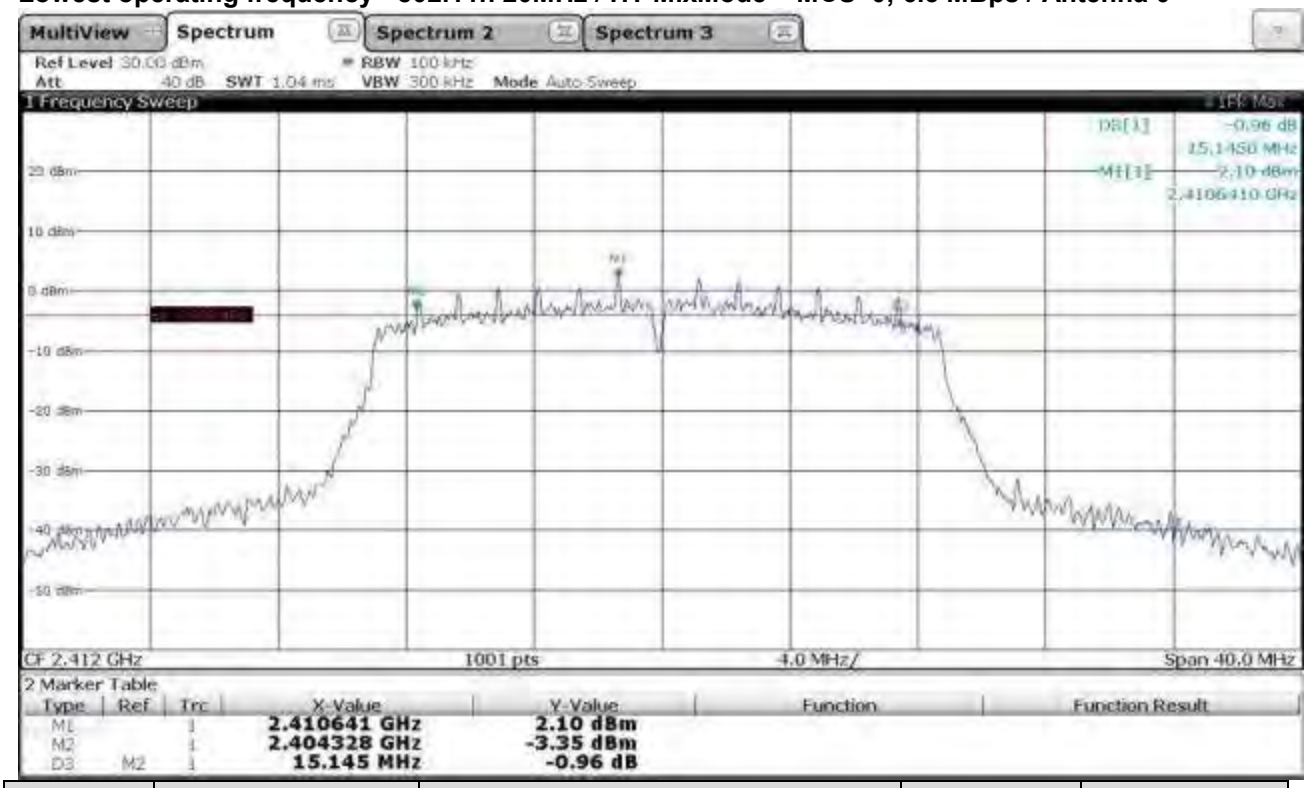
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
6	2437	15.145	0.5	Pass

Highest Operating Frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 1



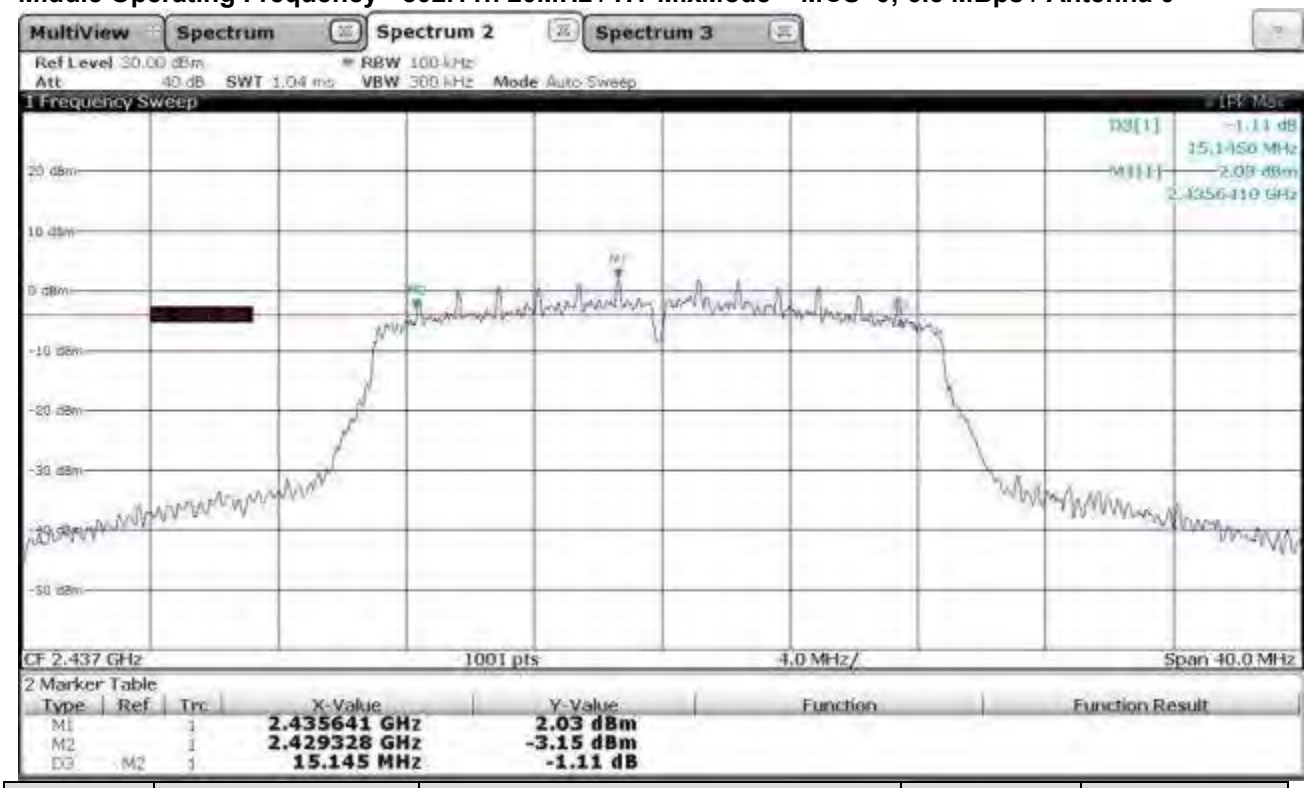
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
11	2462	15.145	0.5	Pass

Lowest operating frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0



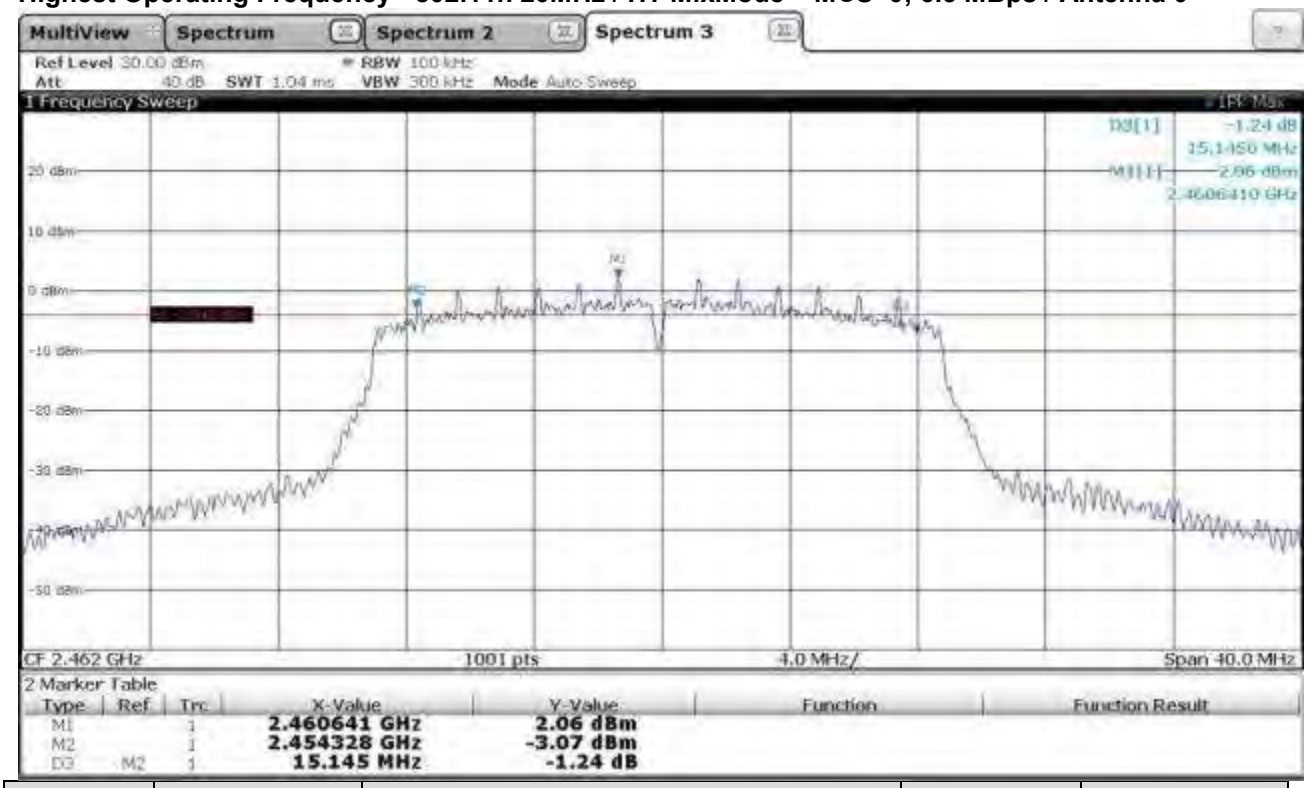
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
1	2412	15.145	0.5	Pass

Middle Operating Frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0



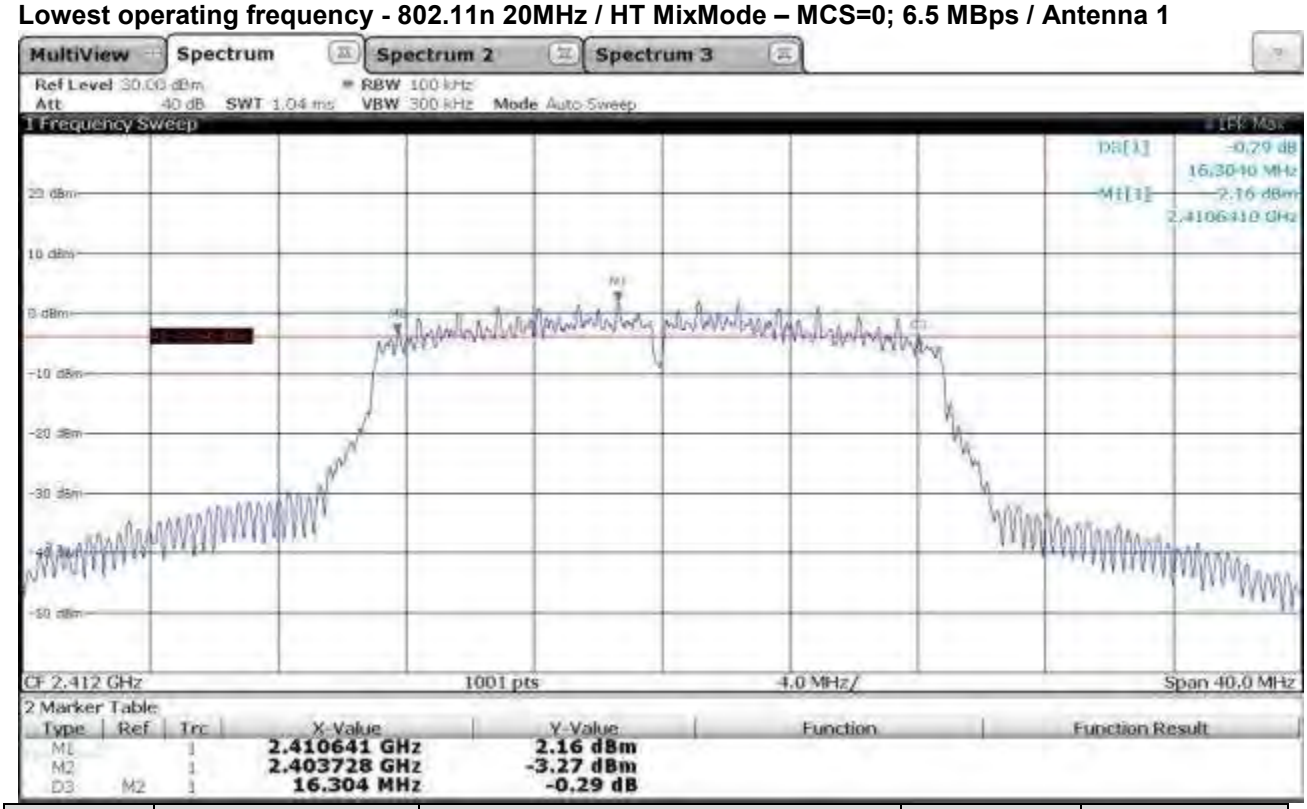
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
6	2437	15.145	0.5	Pass

Highest Operating Frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0



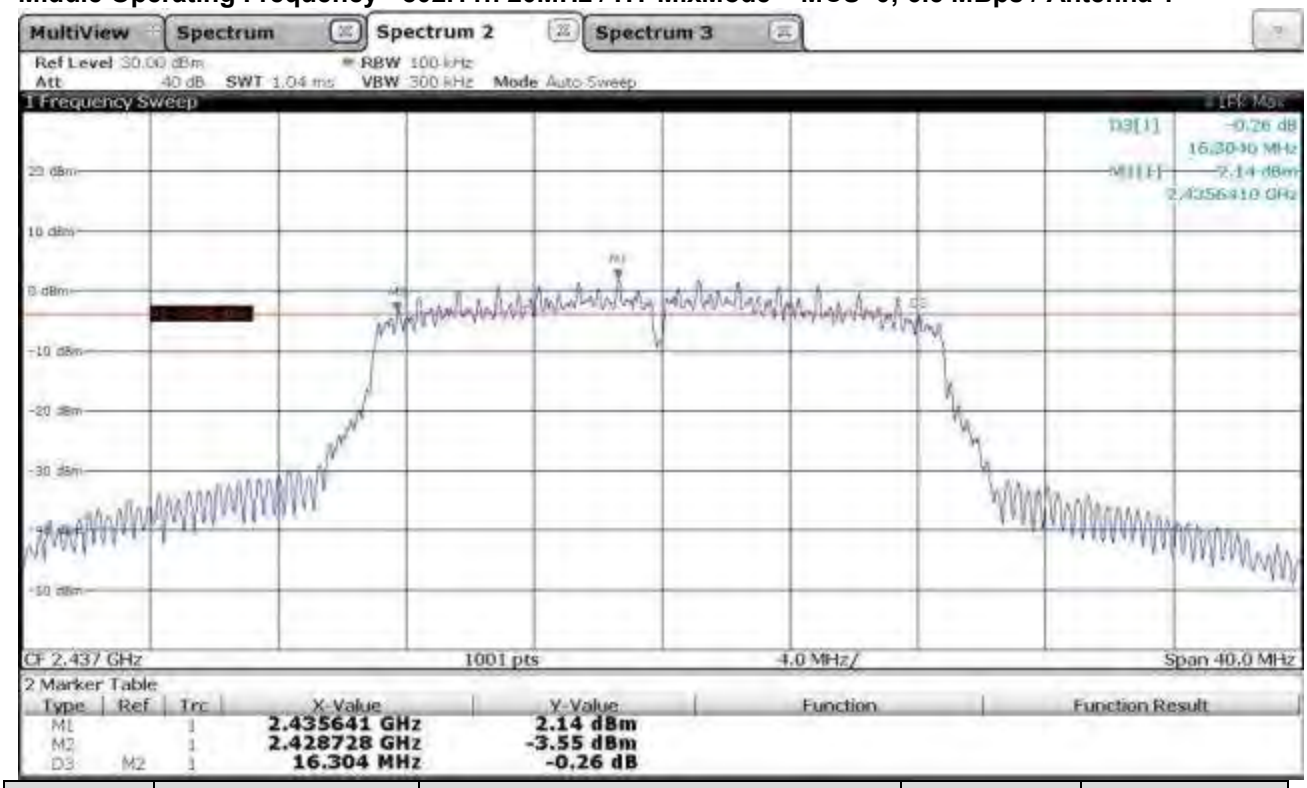
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
11	2462	15.145	0.5	Pass

Lowest operating frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1



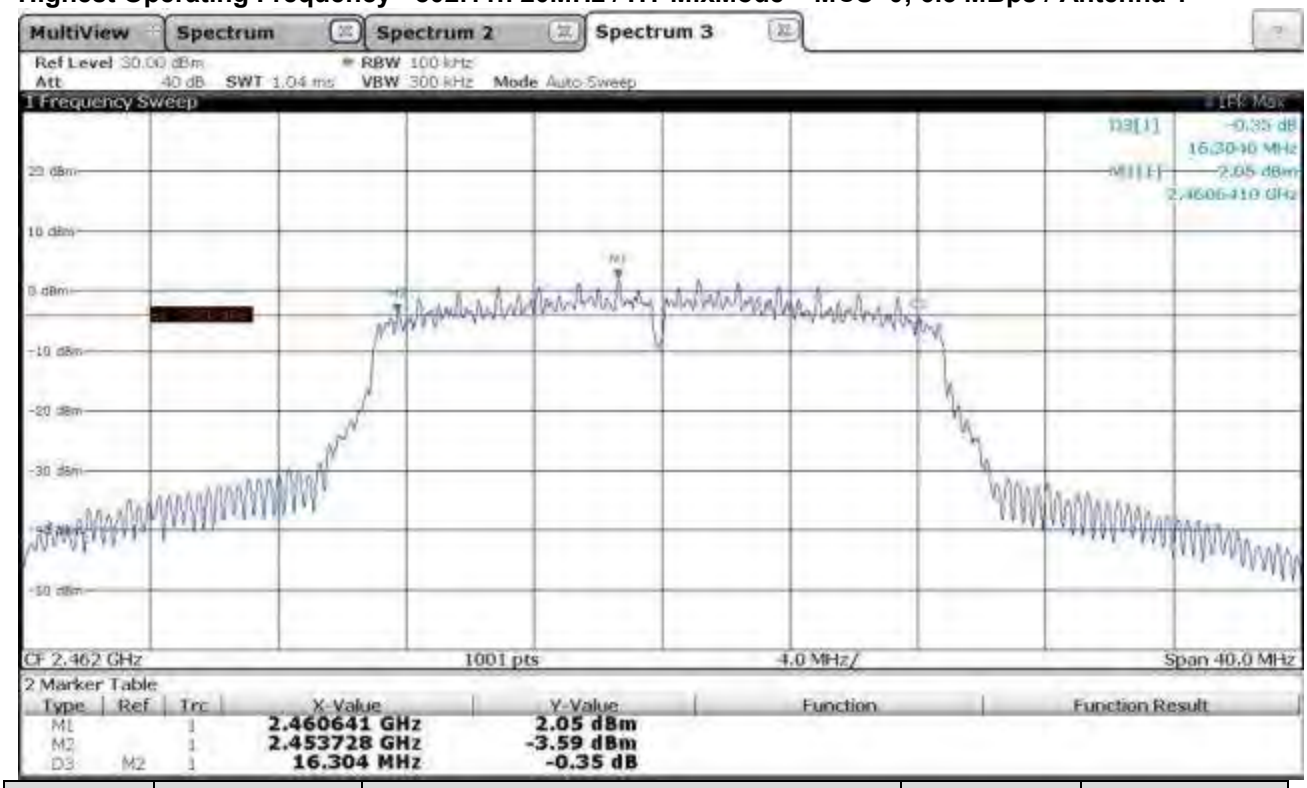
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
1	2412	16.304	0.5	Pass

Middle Operating Frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1



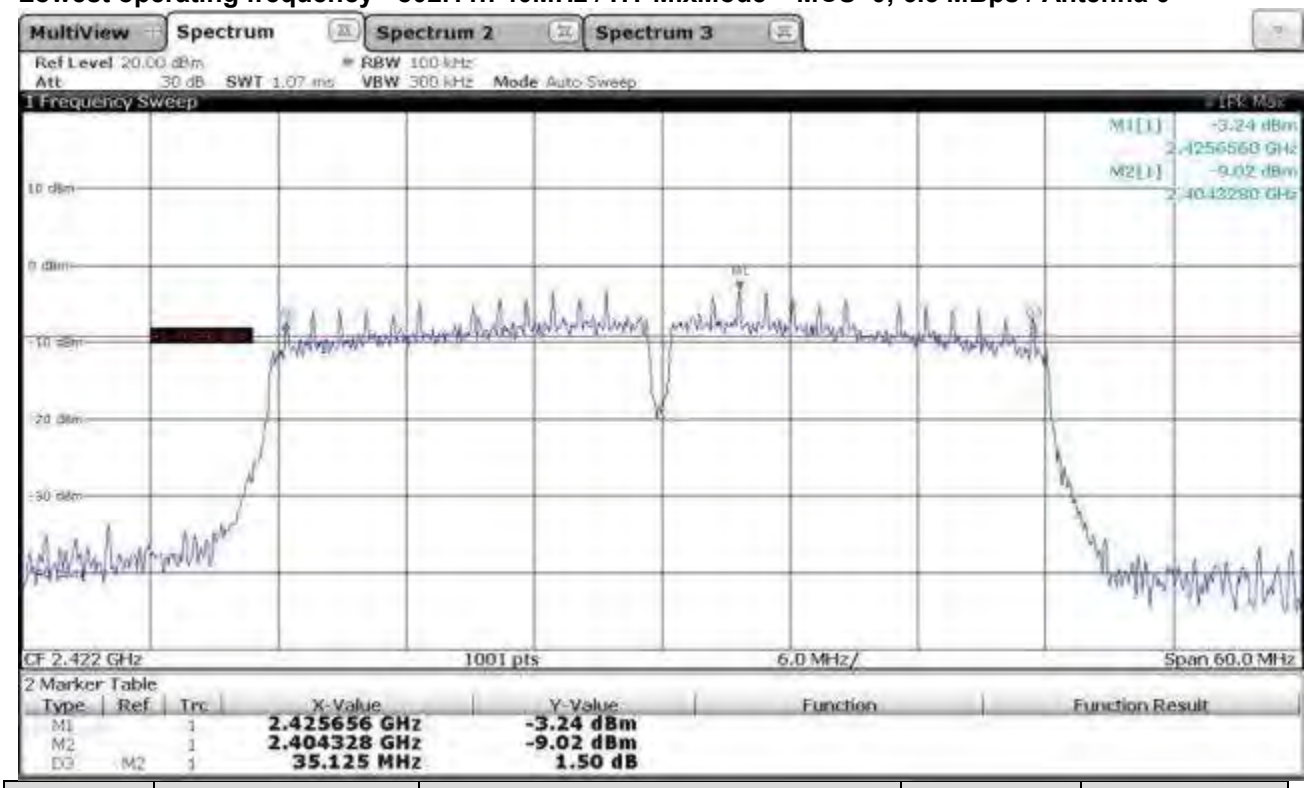
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
6	2437	16.304	0.5	Pass

Highest Operating Frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1



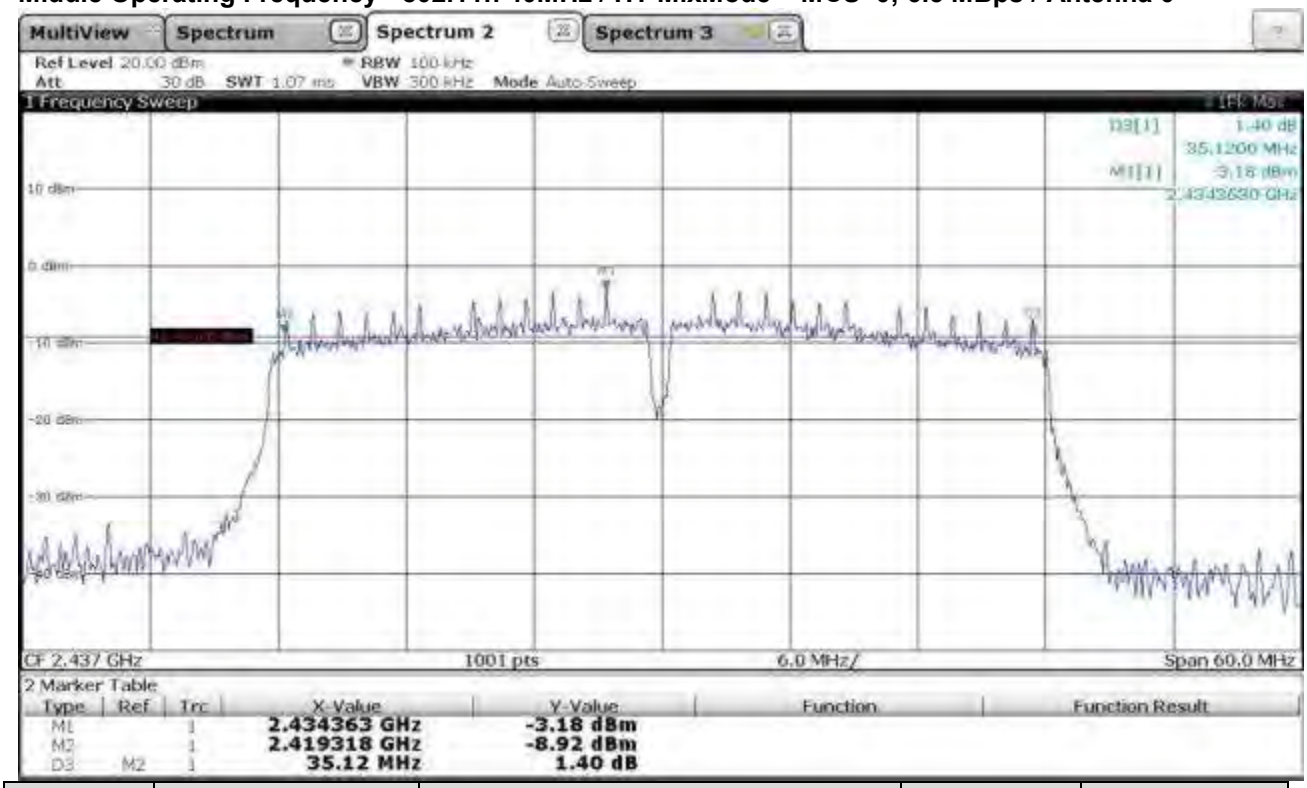
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
11	2462	16.304	0.5	Pass

Lowest operating frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0



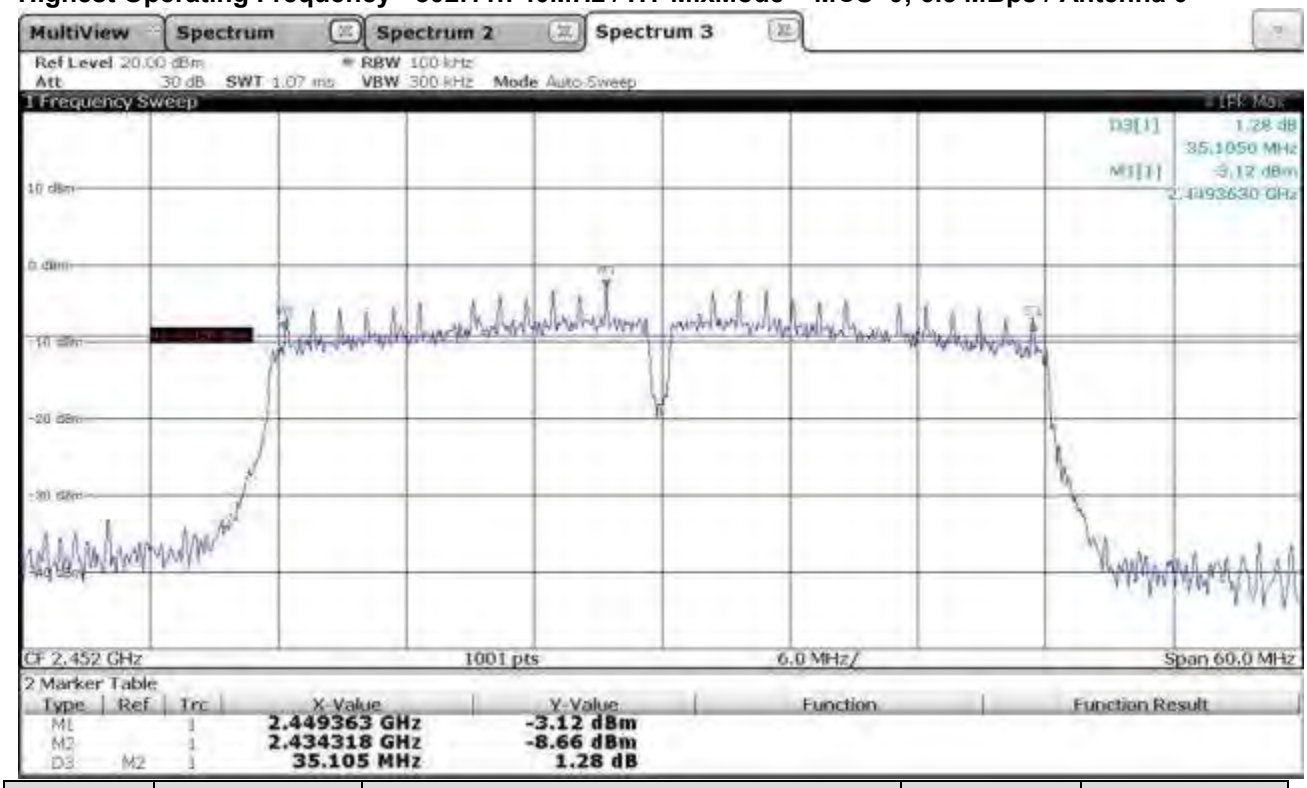
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
3	2422	35.125	0.5	Pass

Middle Operating Frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0



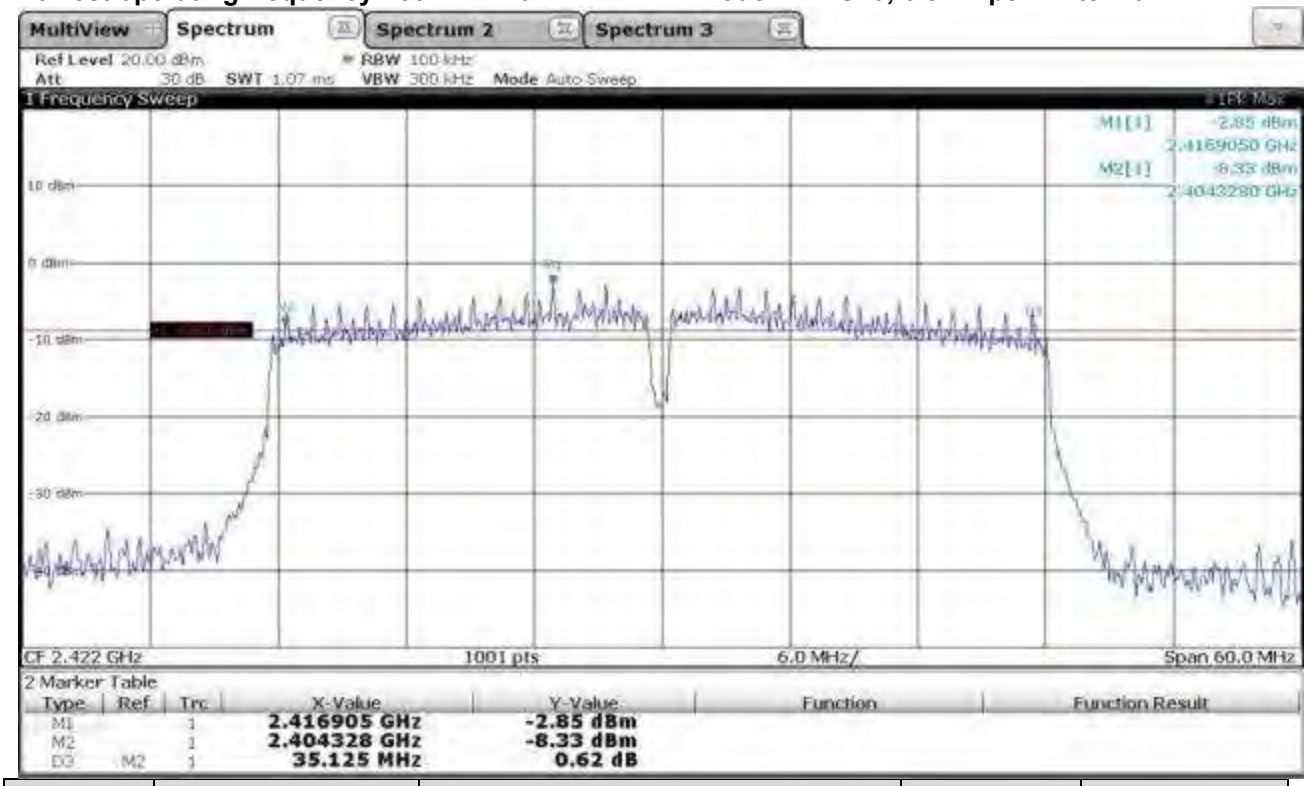
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
6	2437	35.12	0.5	Pass

Highest Operating Frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0



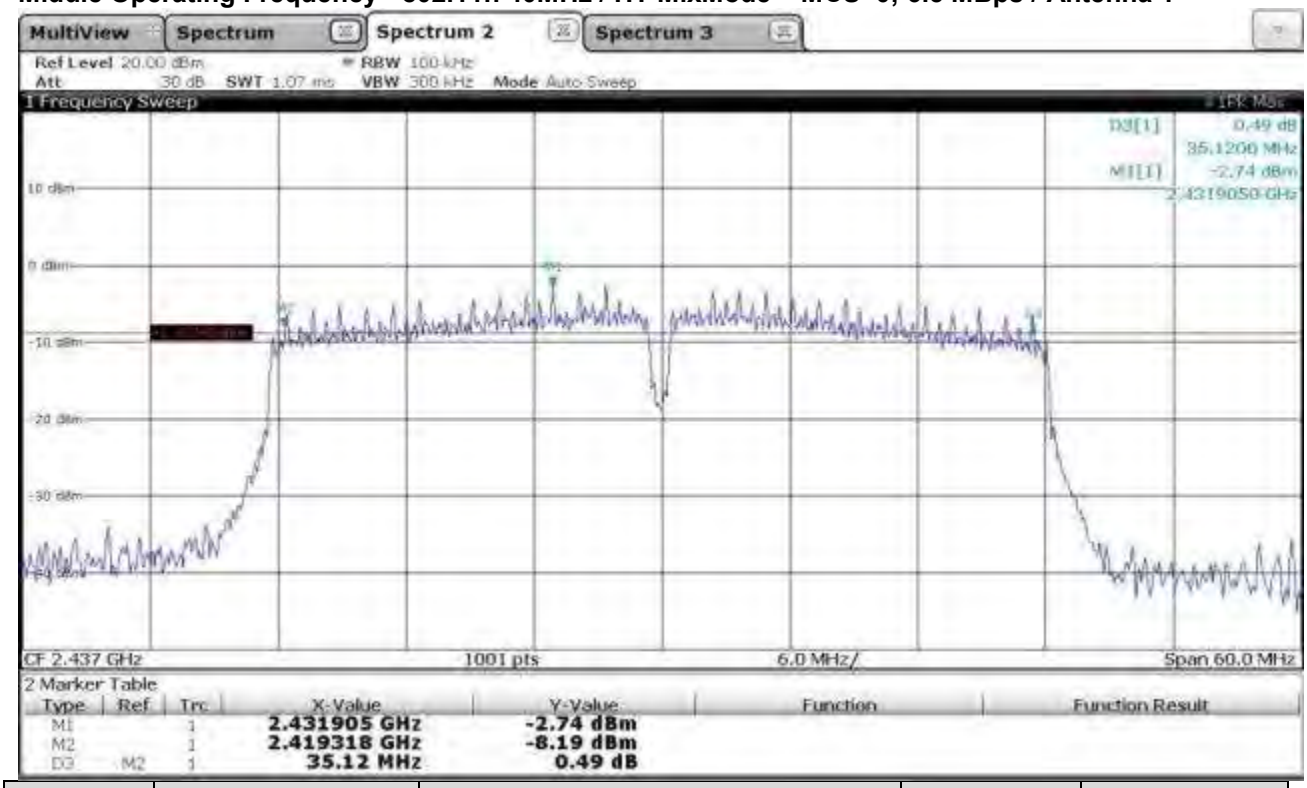
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
9	2452	35.105	0.5	Pass

Lowest operating frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1



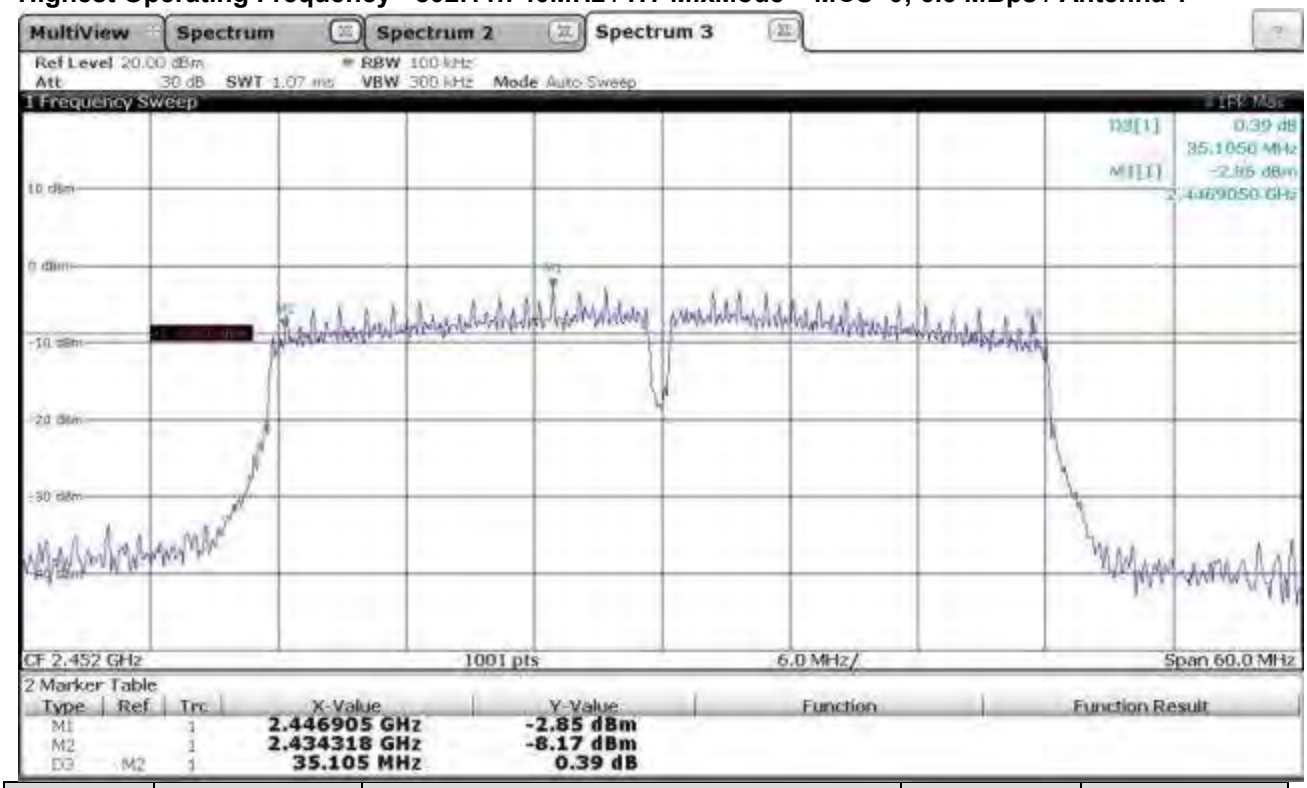
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
3	2422	35.125	0.5	Pass

Middle Operating Frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1



Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
6	2437	35.12	0.5	Pass

Highest Operating Frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1



Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]	Result
9	2452	35.105	0.5	Pass

Results

From the measurement data obtained, the tested sample was considered to have **COMPLIED** with the requirements for the **6 dB Bandwidth**.

8.2. Output Power of Fundamental Emissions
Maximum conducted/radiated Output Power

Applied standards
-e-CFR Title 47 Chapter I Subchapter A Part 15 Subpart C §15.247 (b) (3)
-RSS-247 Issue 2 section 5.4 (d)

Limits for Peak Output Power of Fundamental (EIRP)
The maximum peak conducted/radiated output power of the intentional radiator shall not exceeded: 1 Watt
As an alternative to the maximum peak conducted/radiated output power the average output power is measured to show compliance to the limit.

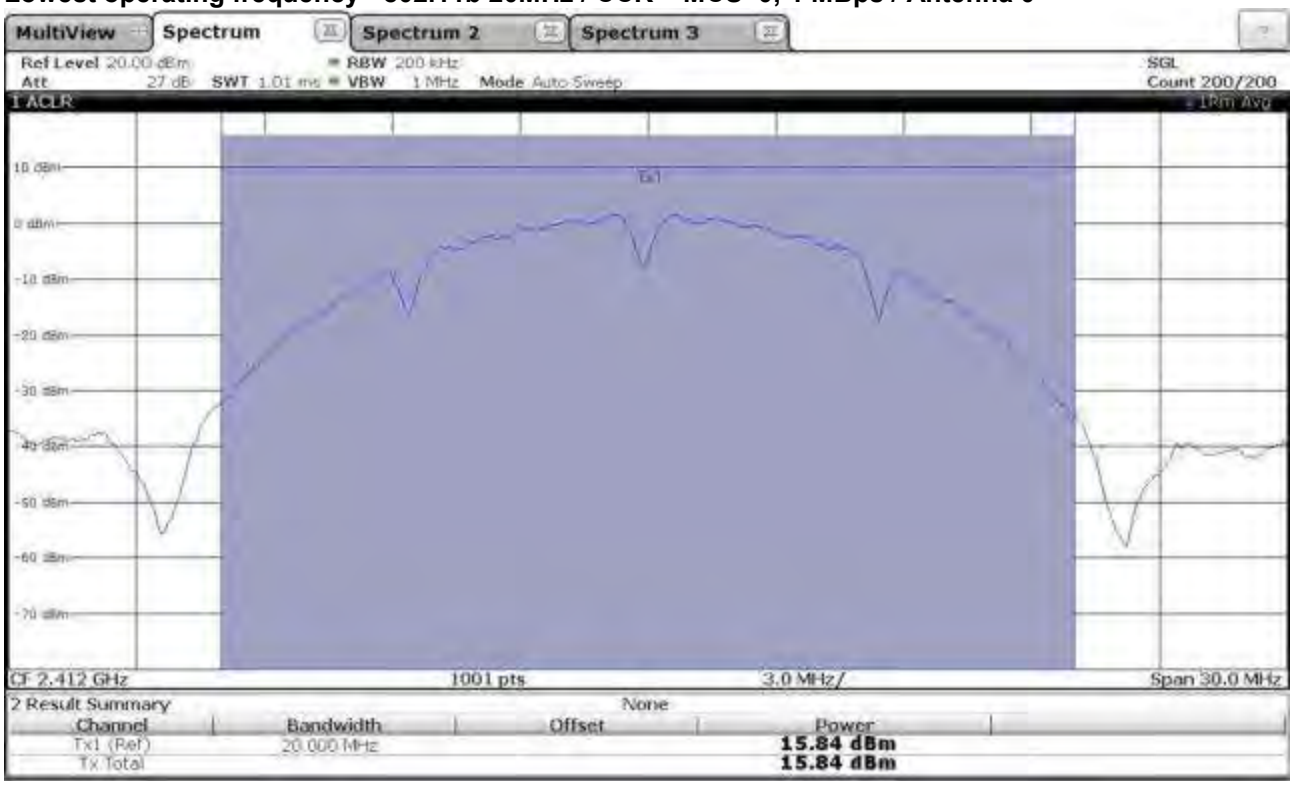
Test equipment and test set up
Test equipment used for conducted/radiated measurements as given in clause Test equipment of this report.
Test setup used for conducted/radiated measurements as given in clause Test setups of this report.

Description
For the conducted/radiated measurement, the RF output of the EUT was connected/radiated to the Analyzer.
All the attenuation or cable loss will be added to the measured maximum output power.
The results are recorded in Watt.

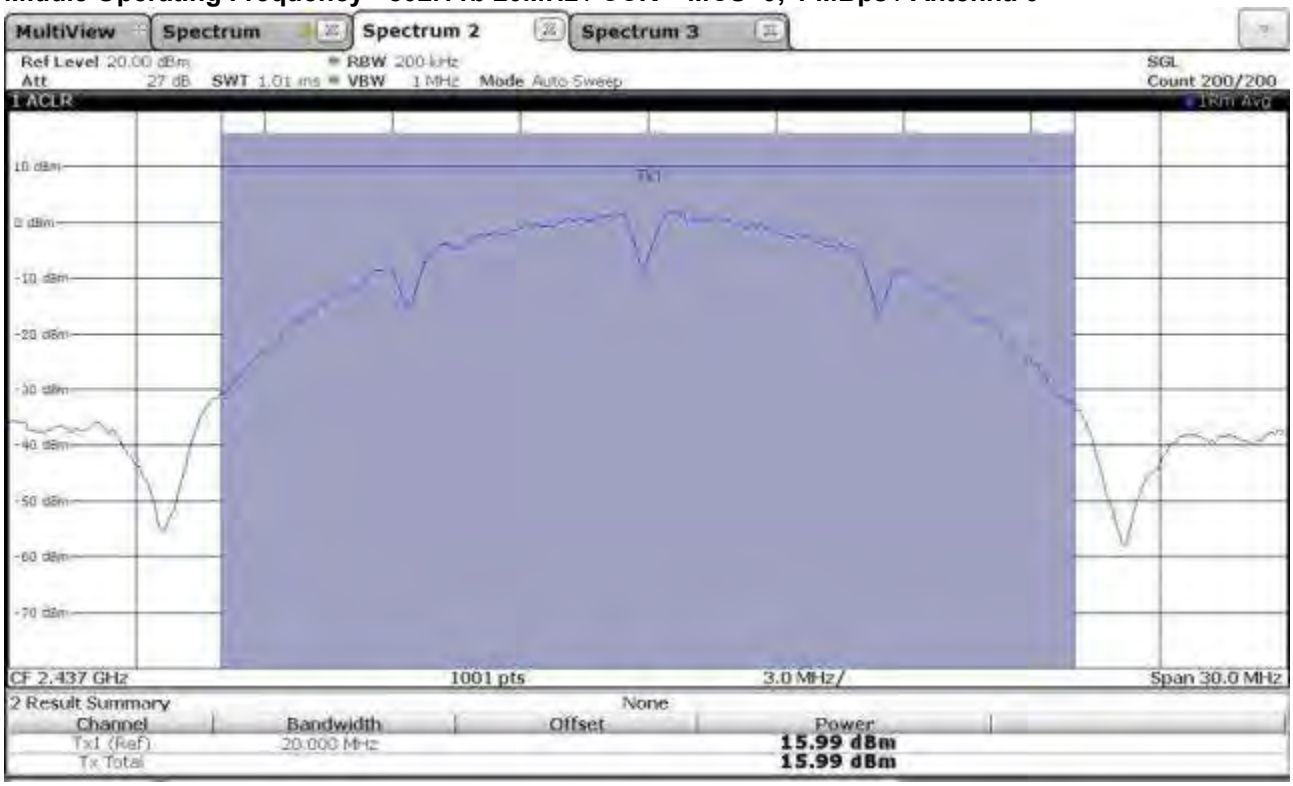
The Measurement was performed on: 06.03.2020 and 09.03.2020 and 17.09.2021

Conducted measurement data

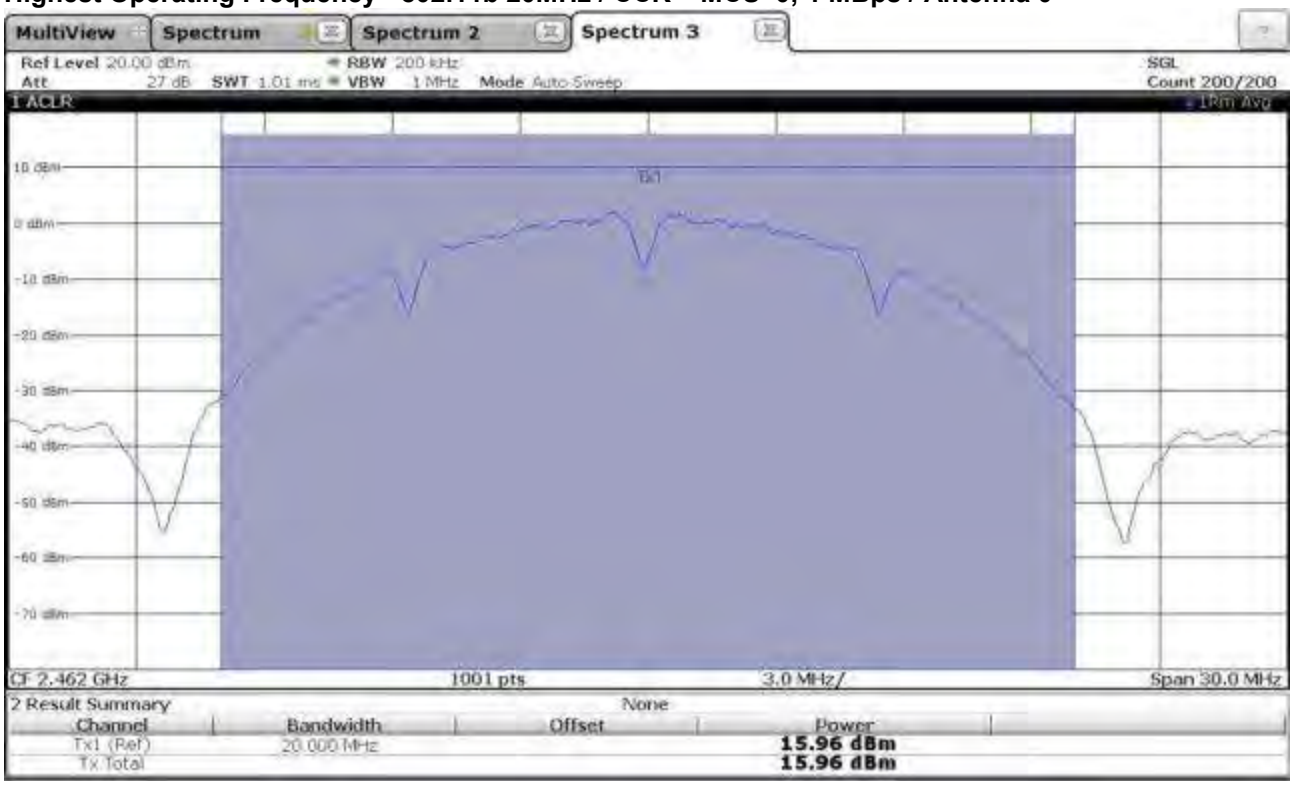
Lowest operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 0



Middle Operating Frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 0



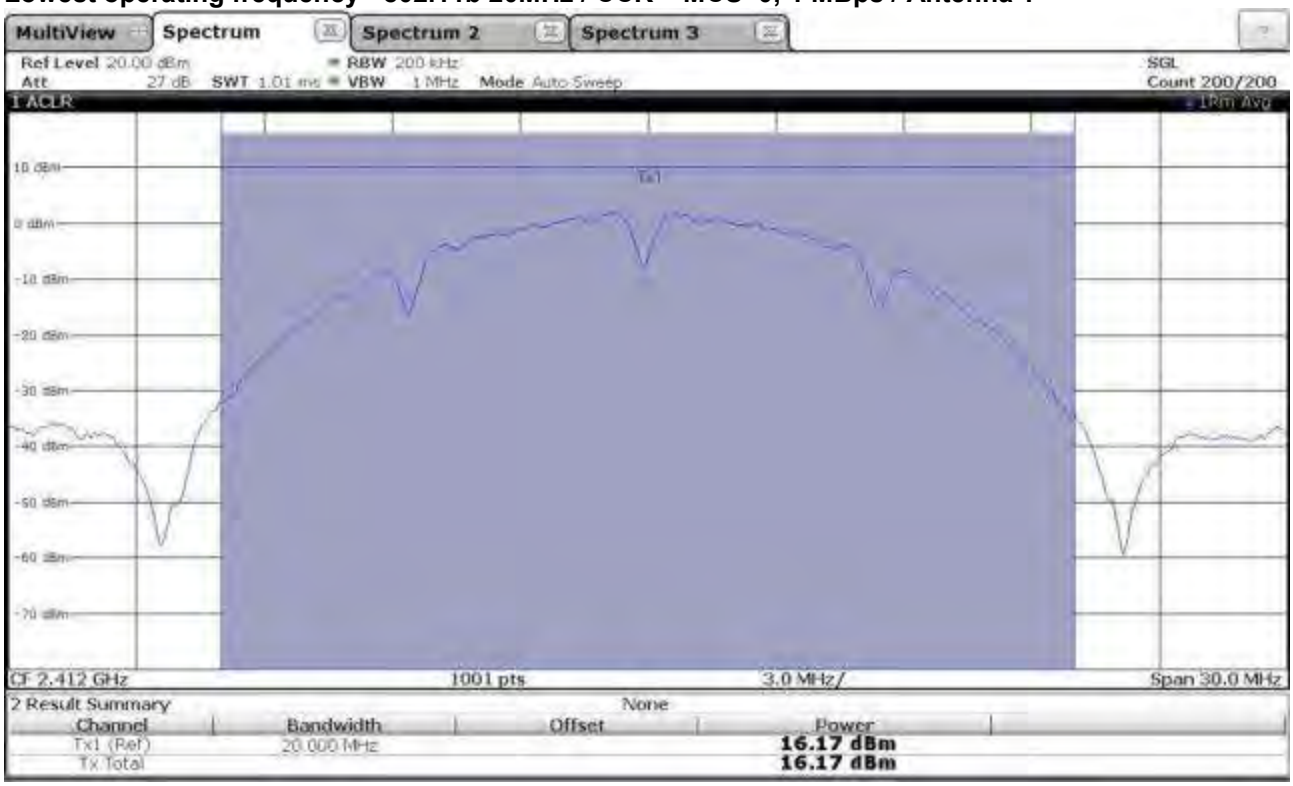
Highest Operating Frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 0



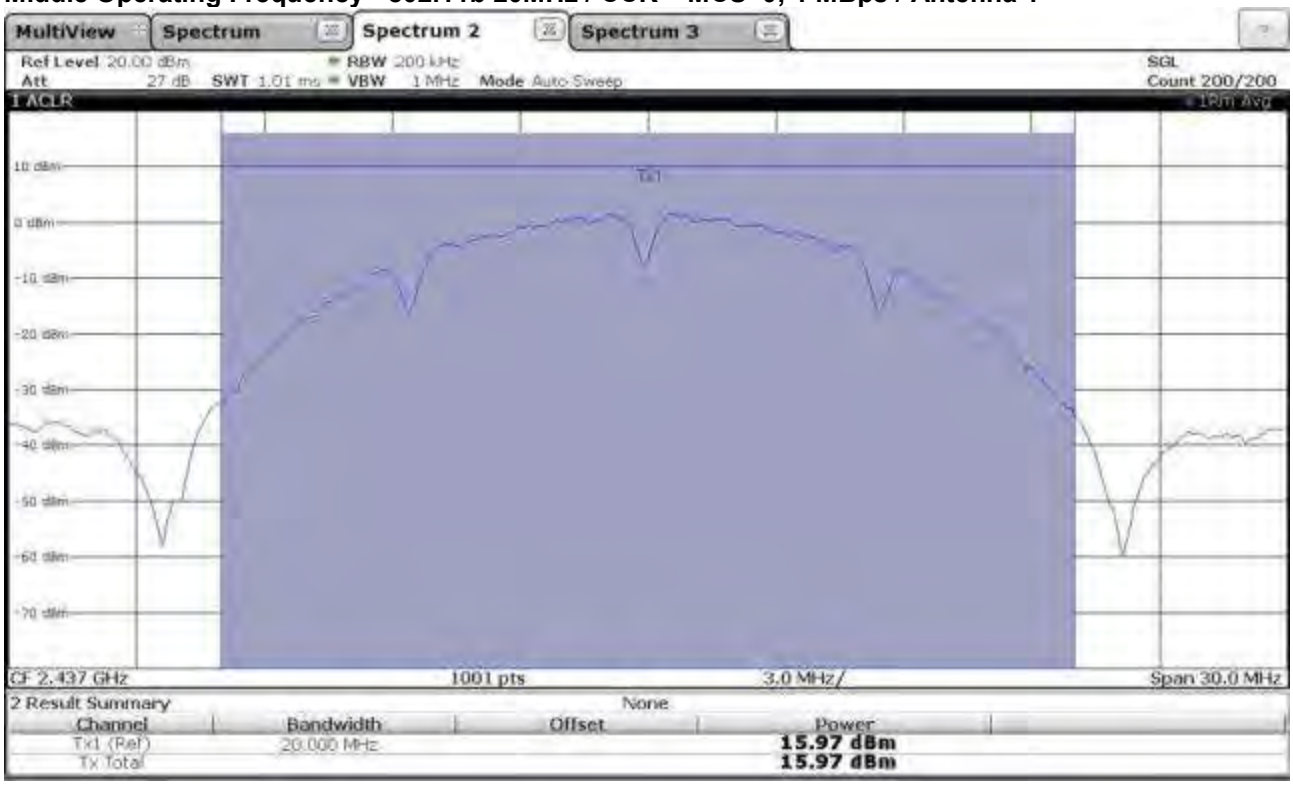
Maximum output power conducted measurement: 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 0								
Channel	**Frequency [MHz]**	**Reading of Analyzer [dBm]**	**Cable Loss [dB]**	**Output Power**		**Limit**		**Result**
				[dBm]	**[mW]**	**[dBm]**	**[mW]**	
1	**2412**	**15.84**	**1.2**	**17.04**	**50.58**	**30**	**1000**	**Pass**
6	**2437**	**15.99**	**1.2**	**17.19**	**52.36**	**30**	**1000**	**Pass**
11	**2462**	**15.96**	**1.2**	**17.16**	**52.00**	**30**	**1000**	**Pass**

Calculated EIRP: 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 0								
Channel	**Frequency [MHz]**	**Output Power**		**Output Power EIRP**		**Limit**		**Result**
		[dBm]	**[mW]**	**[dBm]**	**[mW]**	**[dBm]**	**[mW]**	
1	**2412**	**17.04**	**50.58**	**21.16**	**130.62**	**36**	**4000**	**Pass**
6	**2437**	**17.19**	**52.36**	**21.31**	**135.21**	**36**	**4000**	**Pass**
11	**2462**	**17.16**	**52.00**	**21.28**	**134.28**	**36**	**4000**	**Pass**
Formula: [Conducted RF power] + [Antenna gain] = [EIRP] **Antenna Gain: max. 4.12dBi (Taoglas_WS.01.B.305151)**								

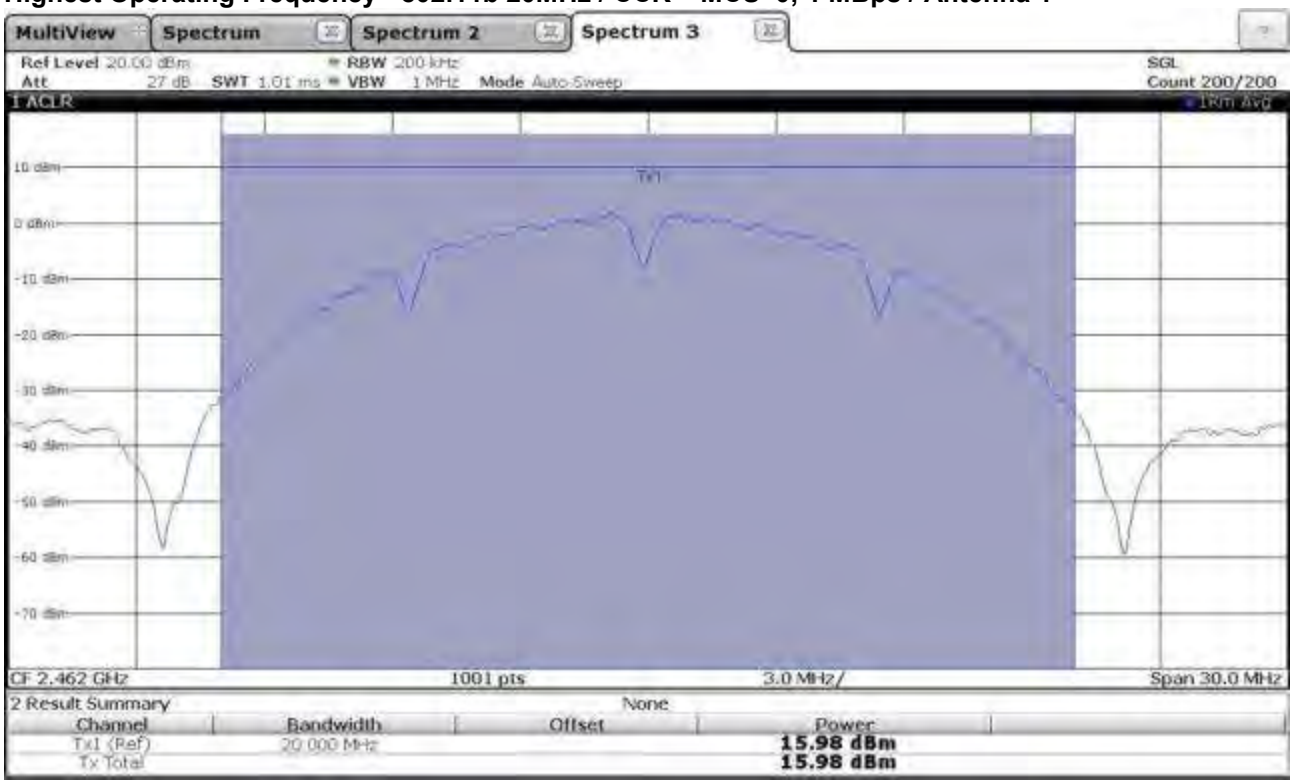
Lowest operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 1



Middle Operating Frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 1



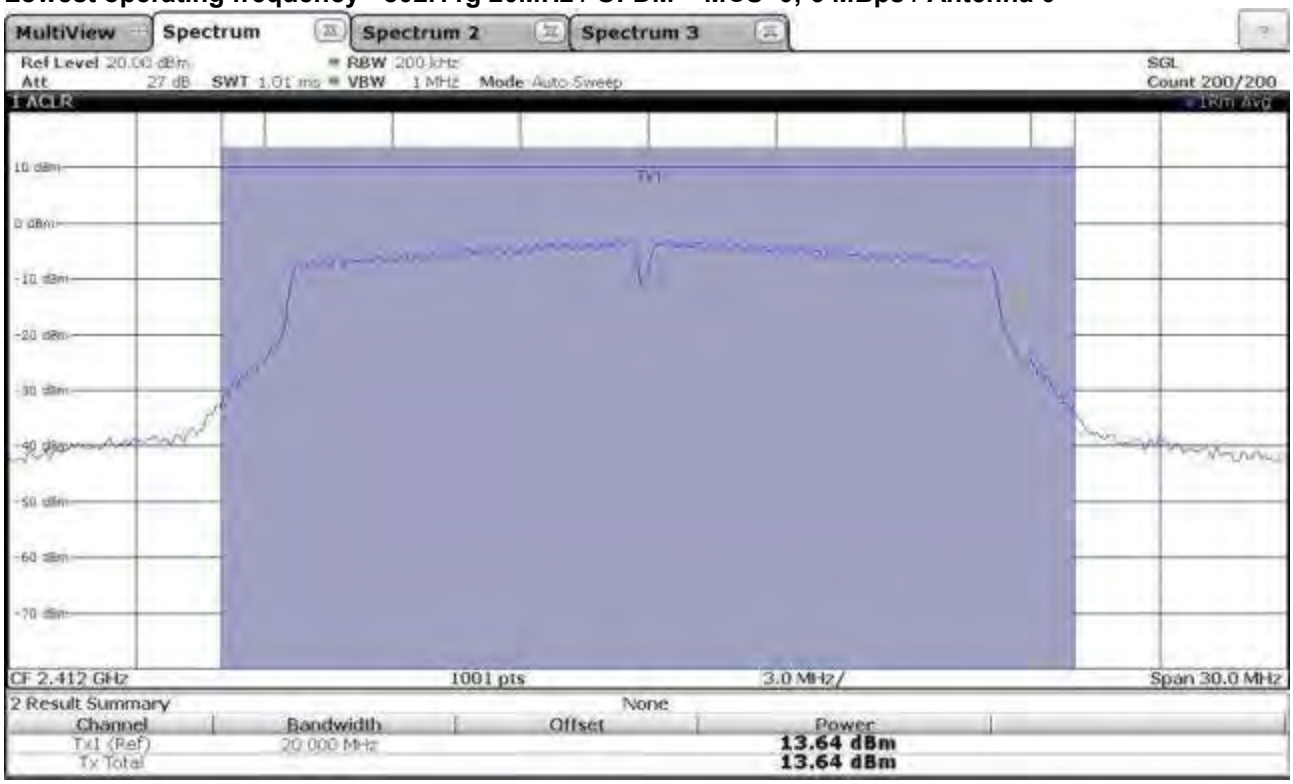
Highest Operating Frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 1



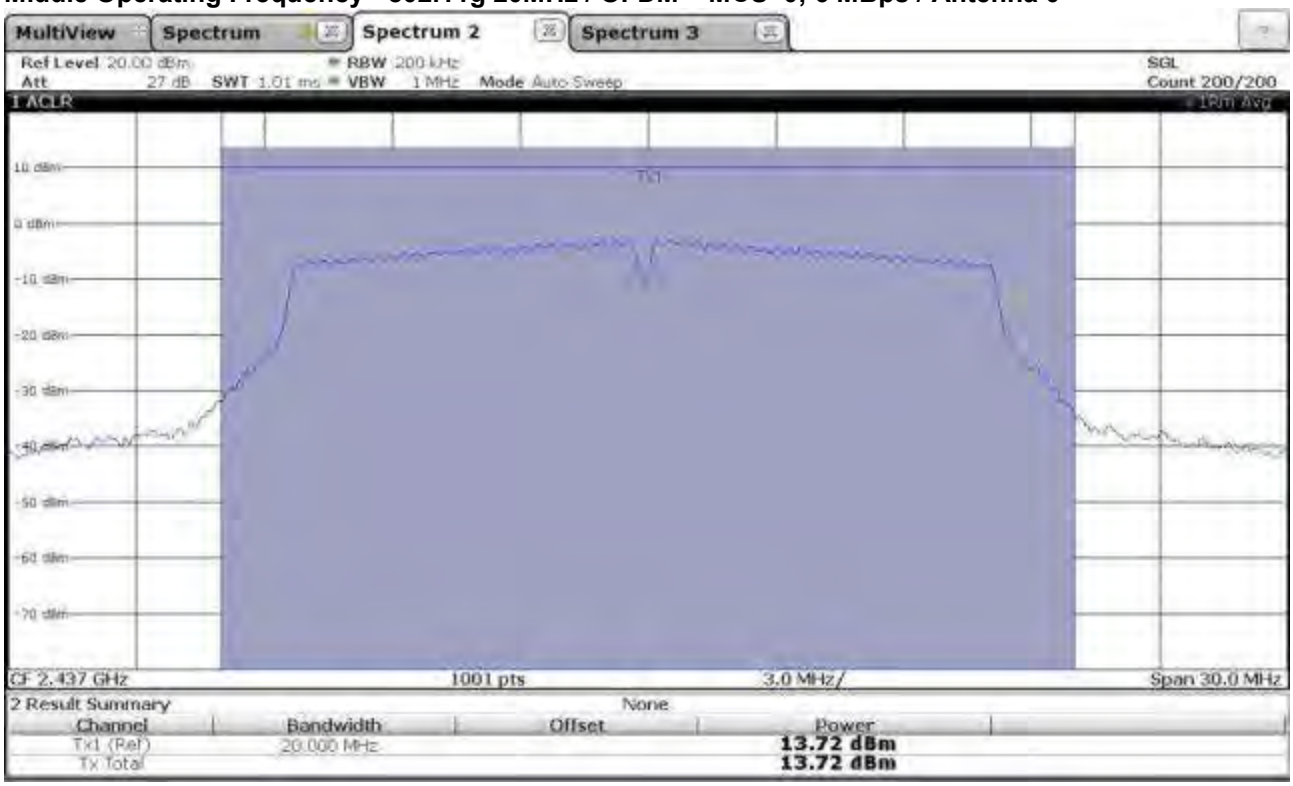
Maximum output power conducted measurement: 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 1								
Channel	**Frequency [MHz]**	**Reading of Analyzer [dBm]**	**Cable Loss [dB]**	**Output Power**		**Limit**		**Result**
				[dBm]	**[mW]**	**[dBm]**	**[mW]**	
1	**2412**	**16.17**	**1.2**	**17.37**	**54.58**	**30**	**1000**	**Pass**
6	**2437**	**15.97**	**1.2**	**17.17**	**52.12**	**30**	**1000**	**Pass**
11	**2462**	**15.98**	**1.2**	**17.18**	**52.24**	**30**	**1000**	**Pass**

Calculated EIRP: 802.11b 20MHz / CCK – MCS=0; 1 MBps / Antenna 1								
Channel	**Frequency [MHz]**	**Output Power**		**Output Power EIRP**		**Limit**		**Result**
		[dBm]	**[mW]**	**[dBm]**	**[mW]**	**[dBm]**	**[mW]**	
1	**2412**	**17.37**	**54.58**	**21.49**	**140.93**	**36**	**4000**	**Pass**
6	**2437**	**17.17**	**52.12**	**21.29**	**134.59**	**36**	**4000**	**Pass**
11	**2462**	**17.18**	**52.24**	**21.30**	**134.90**	**36**	**4000**	**Pass**
Formula: [Conducted RF power] + [Antenna gain] = [EIRP] **Antenna Gain: max. 4.12dBi (Taoglas_WS.01.B.305151)**								

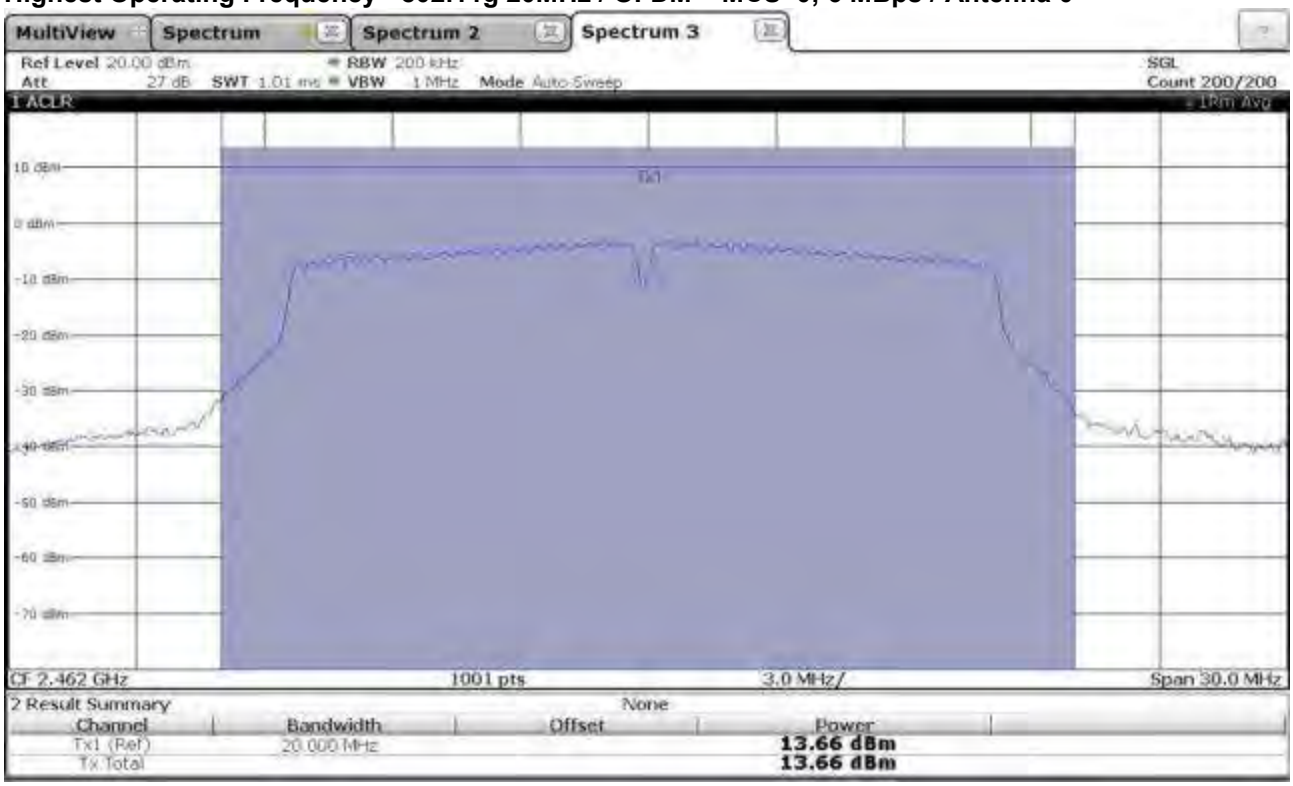
Lowest operating frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 0



Middle Operating Frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 0



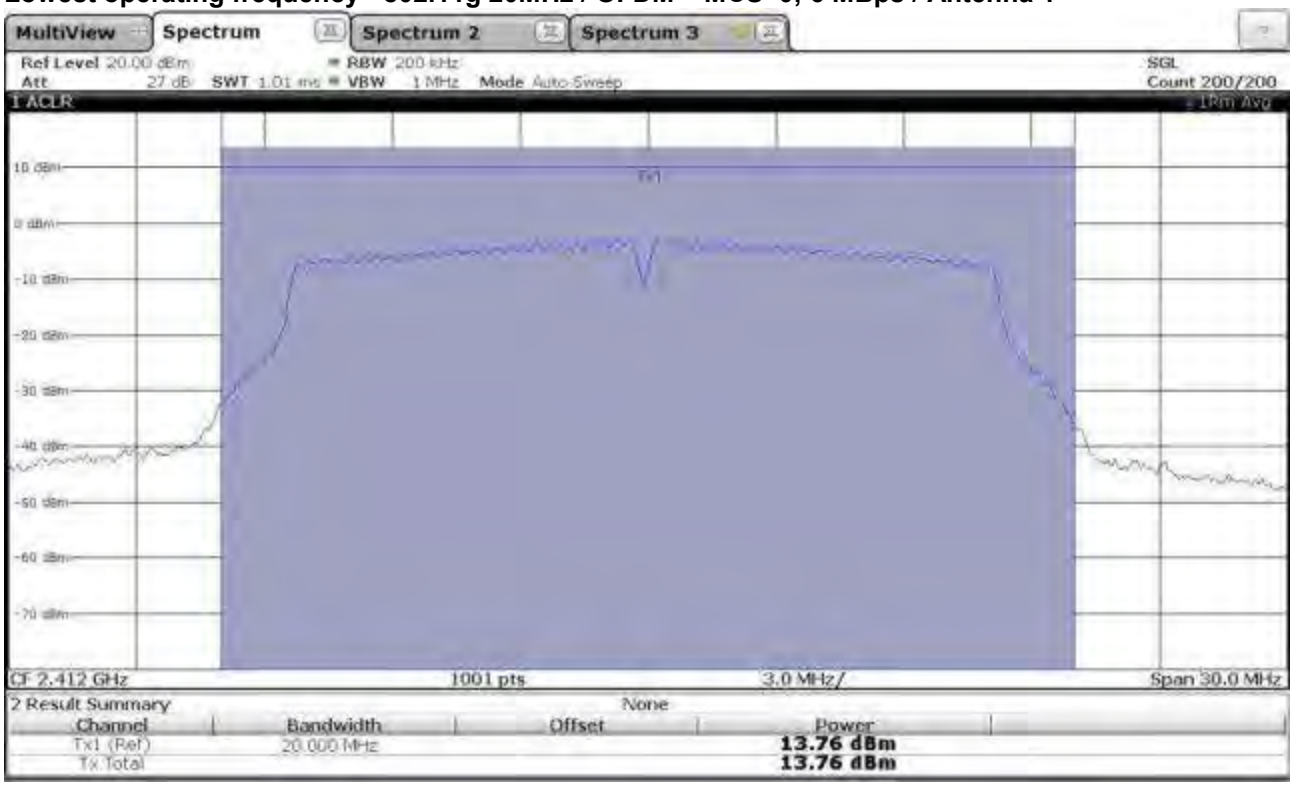
Highest Operating Frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 0



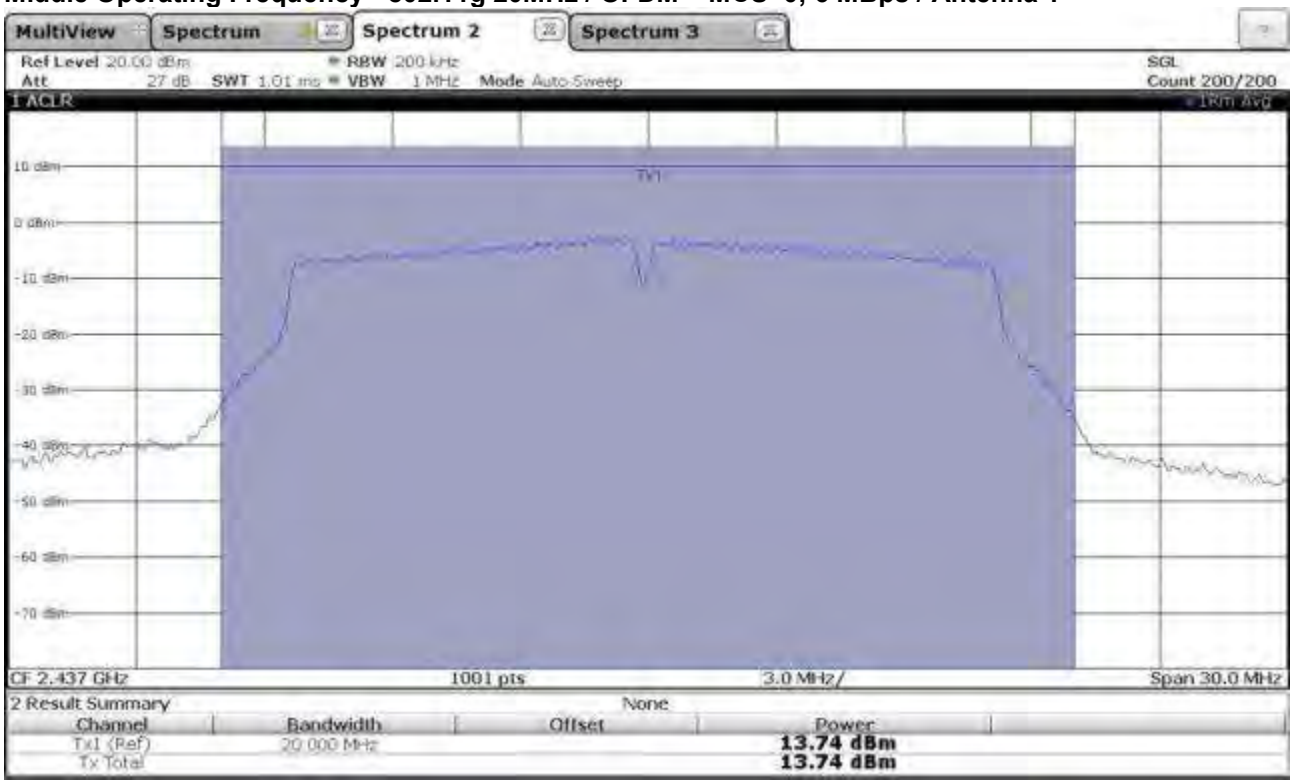
Maximum output power conducted measurement: 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 0								
Channel	**Frequency [MHz]**	**Reading of Analyzer [dBm]**	**Cable Loss [dB]**	**Output Power**		**Limit**		**Result**
				[dBm]	**[mW]**	**[dBm]**	**[mW]**	
1	**2412**	**13.64**	**1.2**	**14.84**	**30.48**	**30**	**1000**	**Pass**
6	**2437**	**13.72**	**1.2**	**14.92**	**31.05**	**30**	**1000**	**Pass**
11	**2462**	**13.66**	**1.2**	**14.86**	**30.62**	**30**	**1000**	**Pass**

Calculated EIRP: 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 0								
Channel	**Frequency [MHz]**	**Output Power**		**Output Power EIRP**		**Limit**		**Result**
		[dBm]	**[mW]**	**[dBm]**	**[mW]**	**[dBm]**	**[mW]**	
1	**2412**	**14.84**	**30.48**	**18.96**	**78.70**	**36**	**4000**	**Pass**
6	**2437**	**14.92**	**31.05**	**19.04**	**80.17**	**36**	**4000**	**Pass**
11	**2462**	**14.86**	**30.62**	**18.98**	**79.07**	**36**	**4000**	**Pass**
Formula: [Conducted RF power] + [Antenna gain] = [EIRP] Antenna Gain: max. 4.12dBi (Taoglas_WS.01.B.305151)								

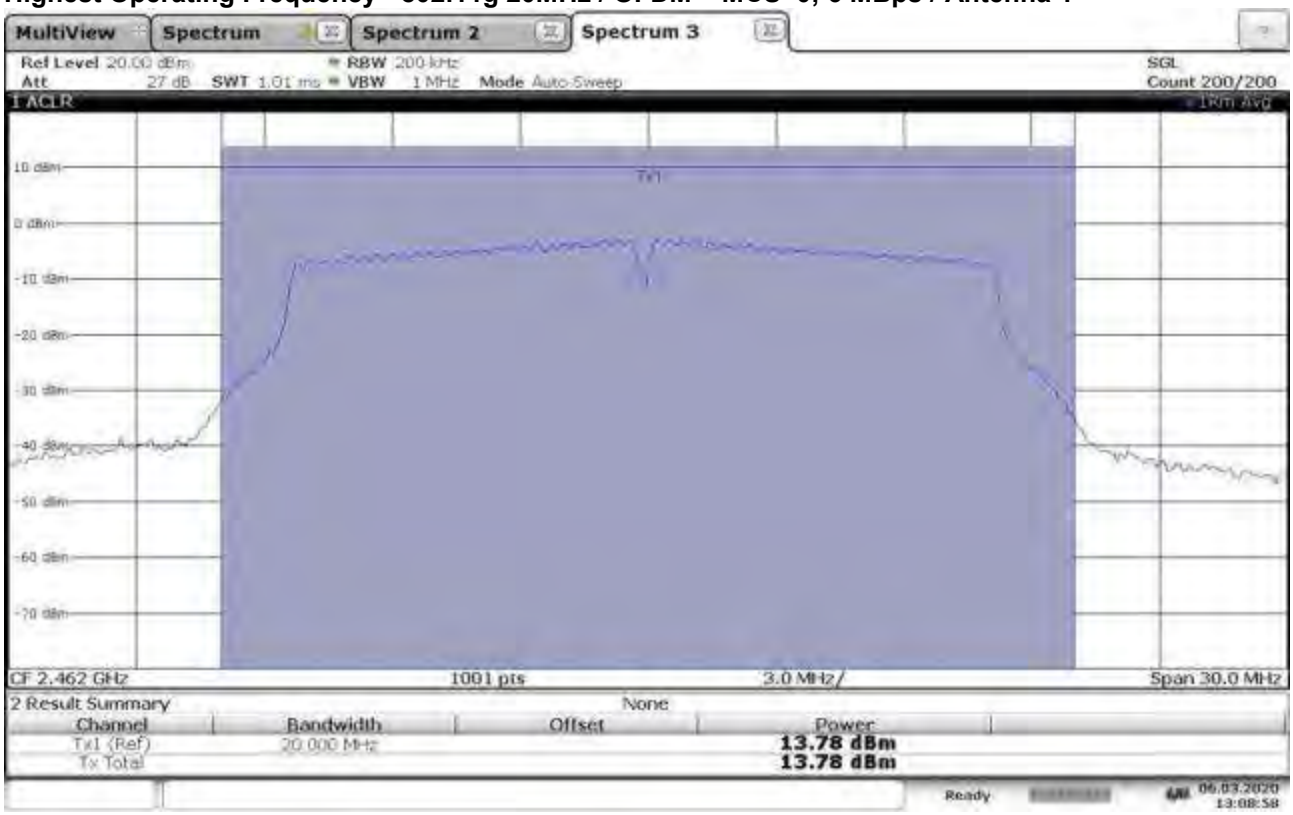
Lowest operating frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 1



Middle Operating Frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 1



Highest Operating Frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 1

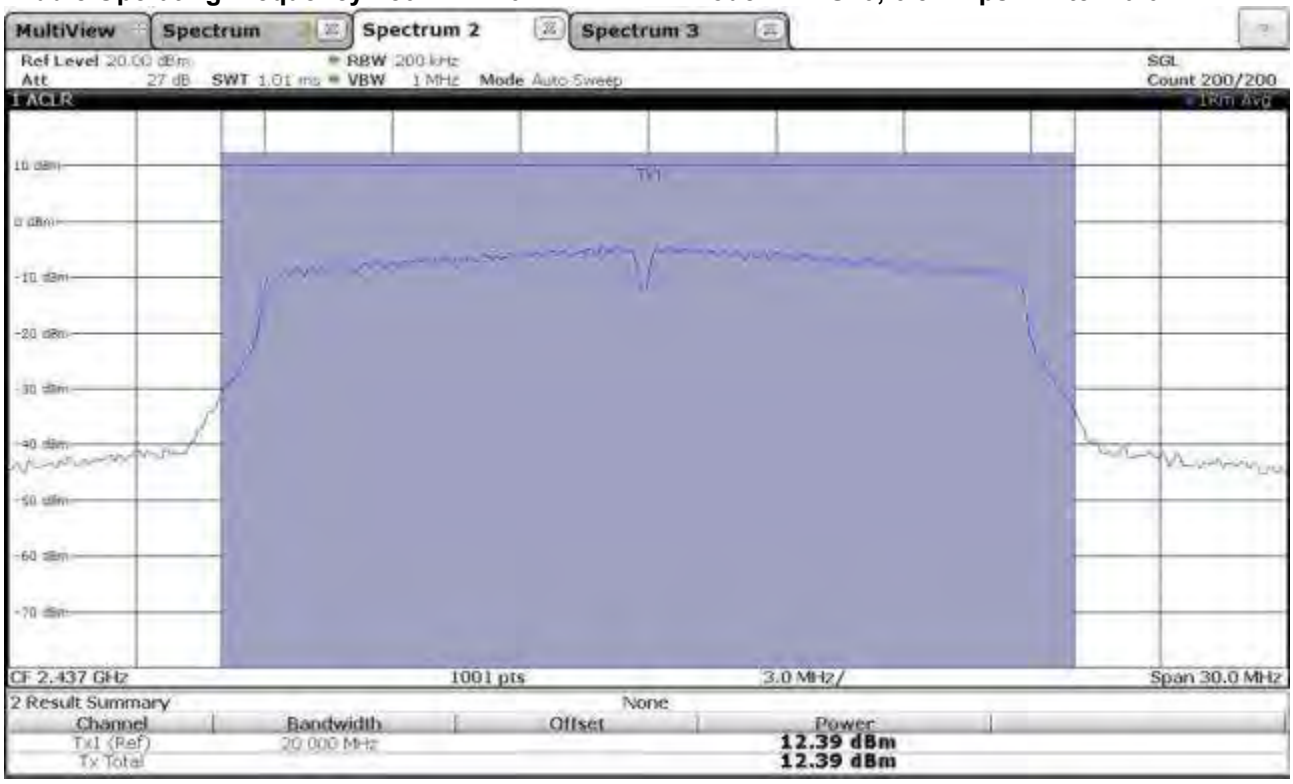


Maximum output power conducted measurement: 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 1								
Channel	**Frequency [MHz]**	**Reading of Analyzer [dBm]**	**Cable Loss [dB]**	**Output Power**		**Limit**		**Result**
				[dBm]	**[mW]**	**[dBm]**	**[mW]**	
1	**2412**	**13.76**	**1.2**	**14.96**	**31.33**	**30**	**1000**	**Pass**
6	**2437**	**13.74**	**1.2**	**14.94**	**31.19**	**30**	**1000**	**Pass**
11	**2462**	**13.78**	**1.2**	**14.98**	**31.48**	**30**	**1000**	**Pass**

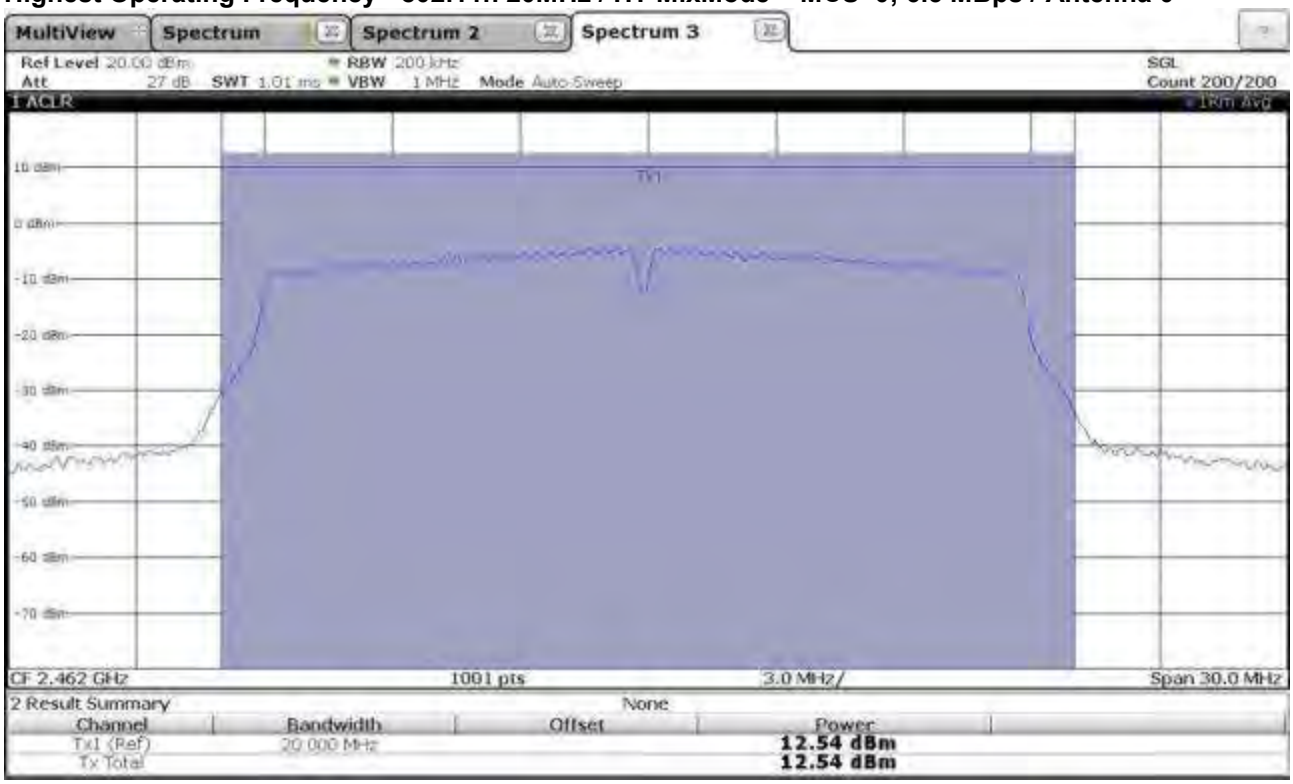
Calculated EIRP: 802.11g 20MHz / OFDM – MCS=0; 6 MBps / Antenna 1								
Channel	**Frequency [MHz]**	**Output Power**		**Output Power EIRP**		**Limit**		**Result**
		[dBm]	**[mW]**	**[dBm]**	**[mW]**	**[dBm]**	**[mW]**	
1	**2412**	**14.96**	**31.33**	**19.08**	**80.91**	**36**	**4000**	**Pass**
6	**2437**	**14.94**	**31.19**	**19.06**	**80.54**	**36**	**4000**	**Pass**
11	**2462**	**14.98**	**31.48**	**19.10**	**81.28**	**36**	**4000**	**Pass**
Formula: [Conducted RF power] + [Antenna gain] = [EIRP] Antenna Gain: max. 4.12dBi (Taoglas_WS.01.B.305151)								

Lowest operating frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0

Middle Operating Frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0



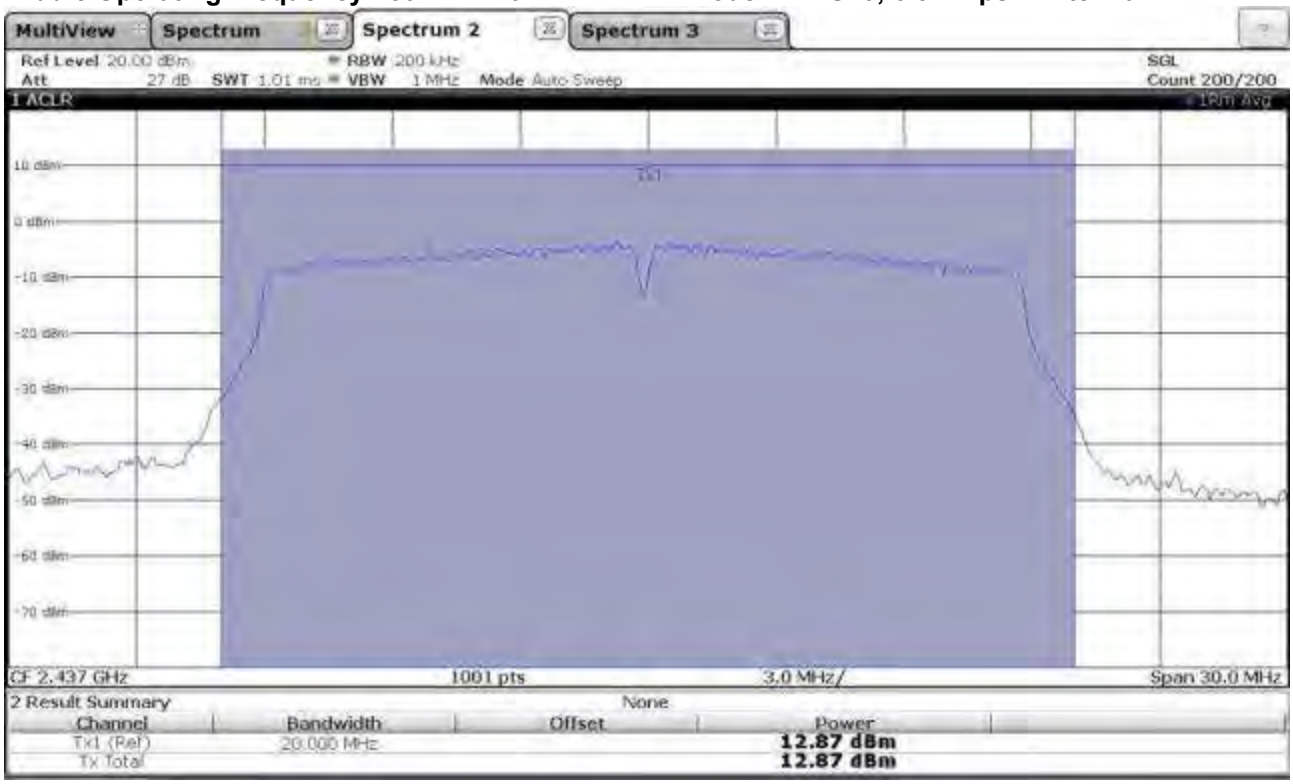
Highest Operating Frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0



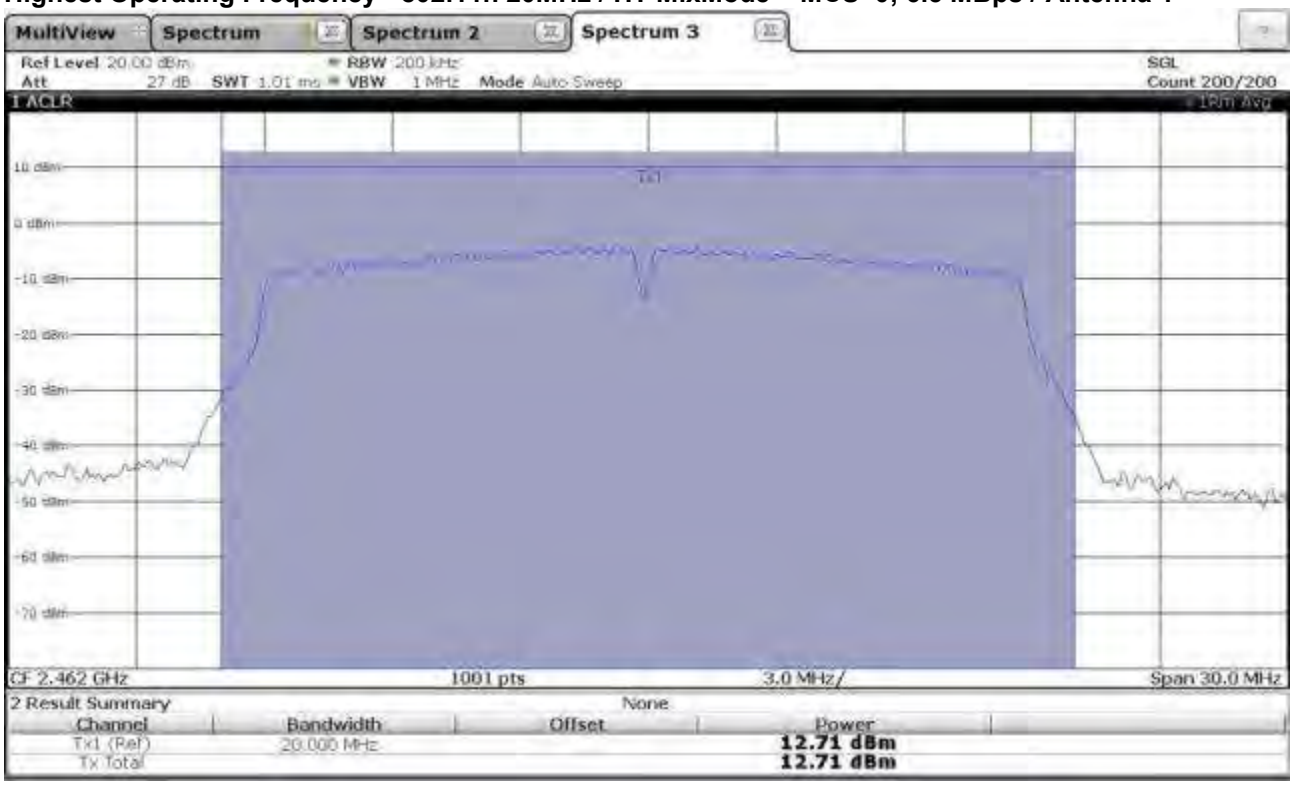
Maximum output power conducted measurement: 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0								
Channel	**Frequency [MHz]**	**Reading of Analyzer [dBm]**	**Cable Loss [dB]**	**Output Power**		**Limit**		**Result**
				[dBm]	**[mW]**	**[dBm]**	**[mW]**	
1	**2412**	**12.23**	**1.2**	**13.43**	**22.03**	**30**	**1000**	**Pass**
6	**2437**	**12.39**	**1.2**	**13.59**	**22.86**	**30**	**1000**	**Pass**
11	**2462**	**12.54**	**1.2**	**13.74**	**23.66**	**30**	**1000**	**Pass**

Lowest operating frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1

Middle Operating Frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1



Highest Operating Frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1



Maximum output power conducted measurement: 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1								
Channel	Frequency [MHz]	Reading of Analyzer [dBm]	Cable Loss [dB]	Output Power		Limit		Result
				[dBm]	[mW]	[dBm]	[mW]	
1	2412	13.17	1.2	14.37	27.35	30	1000	Pass
6	2437	12.87	1.2	14.07	25.53	30	1000	Pass
11	2462	12.71	1.2	13.91	24.60	30	1000	Pass

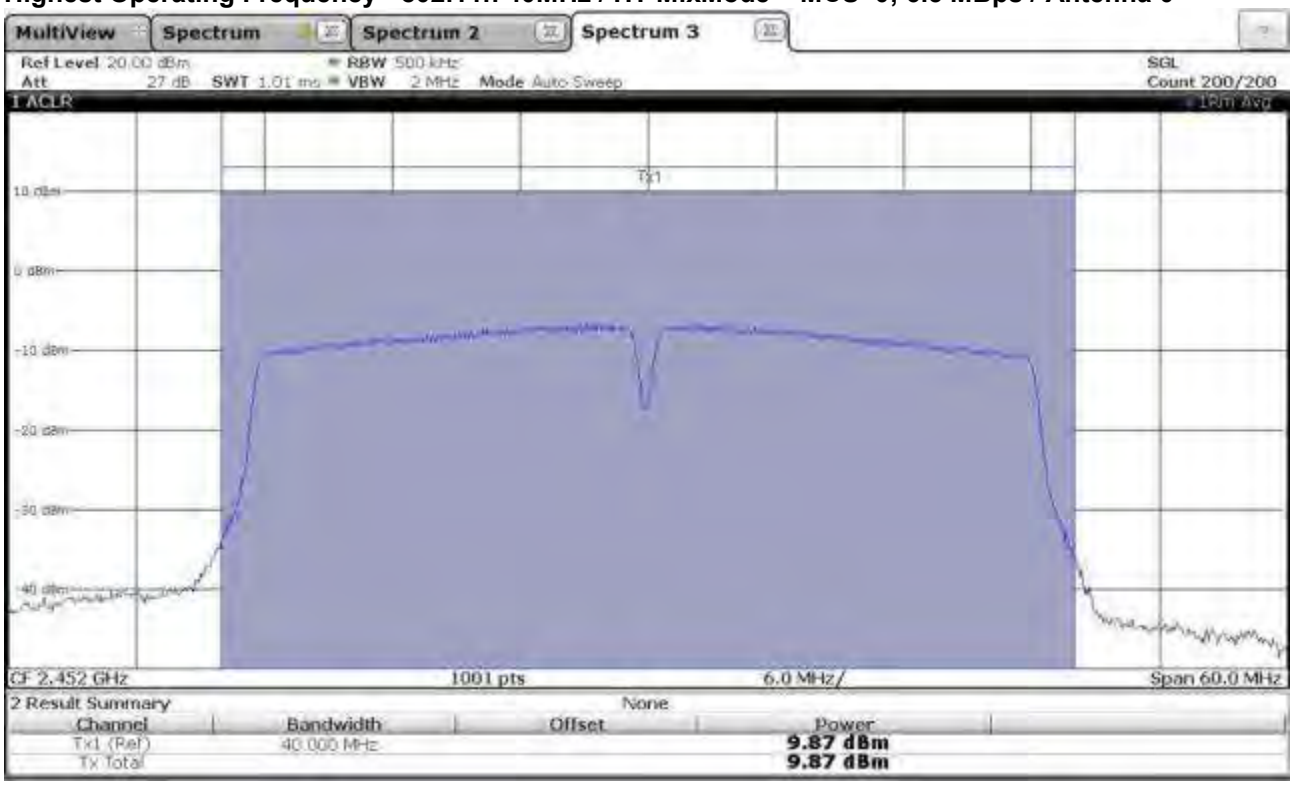
Maximum output power conducted measurement: 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0 + Antenna 1								
Channel	Frequency [MHz]	Output Antenna 0 [mW]	Output Antenna 1 [mW]	Total Output Power		Limit		Result
				[dBm]	[mW]	[dBm]	[mW]	
1	2412	22.03	27.35	16.94	49.38	30	1000	Pass
6	2437	22.86	25.53	16.85	48.39	30	1000	Pass
11	2462	23.66	24.60	16.84	48.26	30	1000	Pass
According to KDB 662911 D01								

Calculated EIRP: 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0 + Antenna 1							
Channel	Frequency [MHz]	Output Antenna 0 EIRP		Output Antenna 1 EIRP		Total Output Power EIRP	
		[dBm]	[mW]	[dBm]	[mW]	[dBm]	[mW]
1	2412	17.55	56.89	18.49	70.63	21.06	127.52
6	2437	17.71	59.02	18.19	65.92	20.97	124.94
11	2462	17.86	61.09	18.03	63.53	20.96	124.62
Formula: [Conducted RF power] + [Antenna gain] = [EIRP] Antenna Gain: max. 4.12dBi (Taoglas_WS.01.B.305151) According to KDB 662911 D01							

Lowest operating frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0

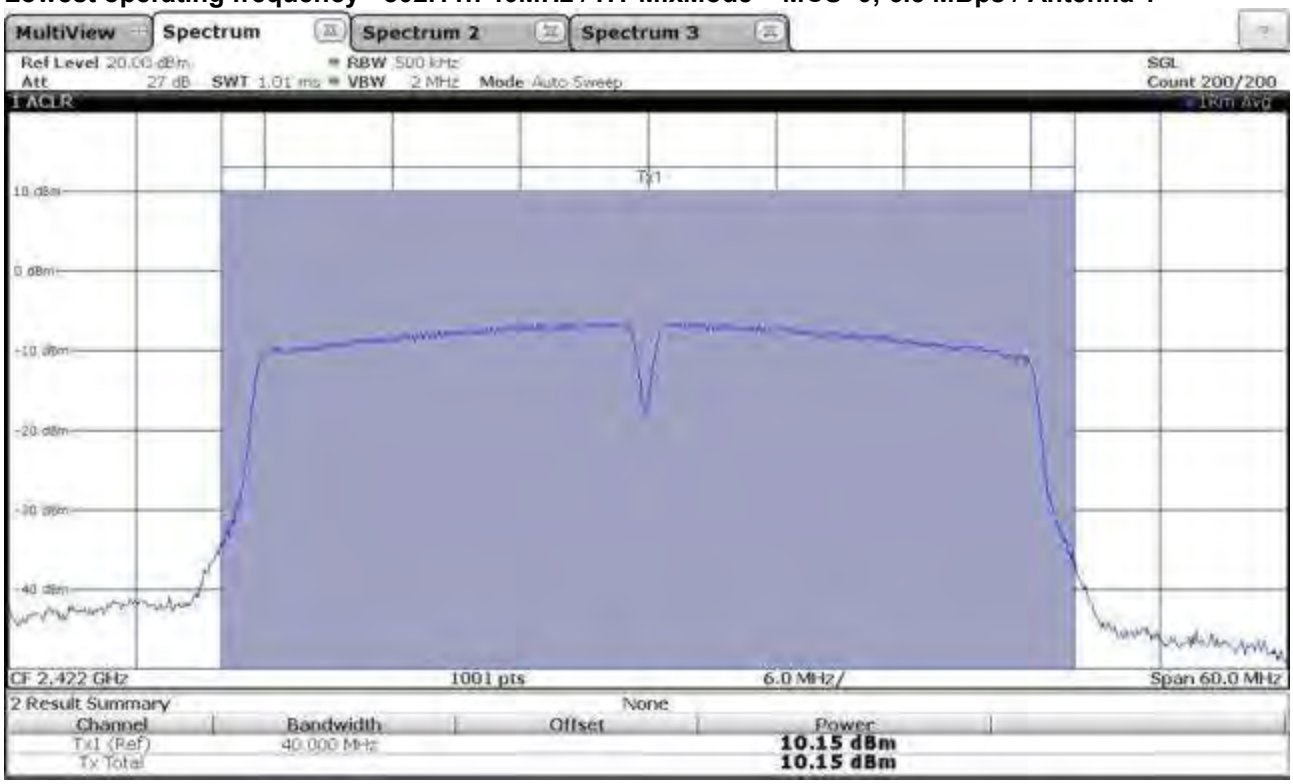
Middle Operating Frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0

Highest Operating Frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0



Maximum output power conducted measurement: 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0								
Channel	**Frequency [MHz]**	**Reading of Analyzer [dBm]**	**Cable Loss [dB]**	**Output Power**		**Limit**		**Result**
				[dBm]	**[mW]**	**[dBm]**	**[mW]**	
3	**2422**	**10.04**	**1.2**	**11.24**	**13.30**	**30**	**1000**	**Pass**
6	**2437**	**10.02**	**1.2**	**11.22**	**13.24**	**30**	**1000**	**Pass**
9	**2452**	**9.87**	**1.2**	**11.07**	**12.79**	**30**	**1000**	**Pass**

Lowest operating frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1



Middle Operating Frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1

Highest Operating Frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1

Maximum output power conducted measurement: 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 1								
Channel	**Frequency [MHz]**	**Reading of Analyzer [dBm]**	**Cable Loss [dB]**	**Output Power**		**Limit**		**Result**
				[dBm]	**[mW]**	**[dBm]**	**[mW]**	
3	**2422**	**10.15**	**1.2**	**11.35**	**13.65**	**30**	**1000**	**Pass**
6	**2437**	**10.32**	**1.2**	**11.52**	**14.19**	**30**	**1000**	**Pass**
9	**2452**	**10.08**	**1.2**	**11.28**	**13.43**	**30**	**1000**	**Pass**

Maximum output power conducted measurement: 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0 + Antenna 1								
Channel	**Frequency [MHz]**	**Output Antenna 0 [mW]**	**Output Antenna 1 [mW]**	**Total Output Power**		**Limit**		**Result**
				[dBm]	**[mW]**	**[dBm]**	**[mW]**	
3	**2422**	**13.30**	**13.65**	**14.31**	**26.95**	**30**	**1000**	**Pass**
6	**2437**	**13.24**	**14.19**	**14.38**	**27.43**	**30**	**1000**	**Pass**
9	**2452**	**12.79**	**13.43**	**14.19**	**26.22**	**30**	**1000**	**Pass**
According to KDB 662911 D01								

Calculated EIRP: 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / Antenna 0 + Antenna 1							
Channel	**Frequency [MHz]**	**Output Antenna 0 EIRP**		**Output Antenna 1 EIRP**		**Total Output Power EIRP**	
		[dBm]	**[mW]**	**[dBm]**	**[mW]**	**[dBm]**	**[mW]**
1	**2422**	**15.36**	**34.36**	**15.47**	**35.24**	**18.43**	**69.60**
6	**2437**	**15.34**	**34.20**	**15.64**	**36.64**	**18.50**	**70.84**
11	**2452**	**15.19**	**33.04**	**15.40**	**34.67**	**18.31**	**67.71**
Formula: [Conducted RF power] + [Antenna gain] = [EIRP] **Antenna Gain: max. 4.12dBi (Taoglas_WS.01.B.305151)** **According to KDB 662911 D01**							

Results

From the measurement data obtained, the tested sample was considered to have **COMPLIED** with the requirements of **Output Power of Fundamental Emissions**.

Radiated measurement data

Lowest operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions

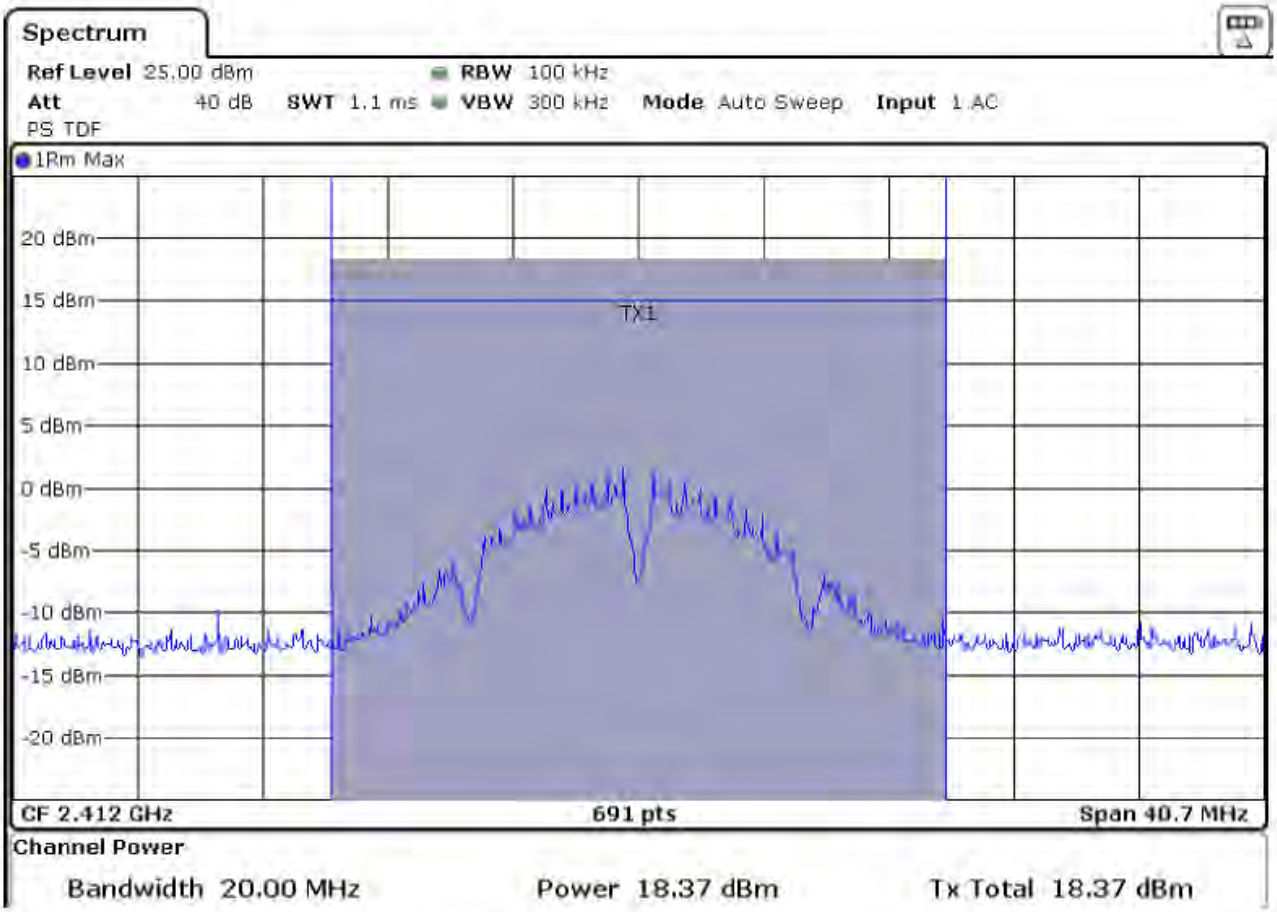
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.:	20/01-0031
Product:	Transmitting / Receiving System
Sample:	01
Date:	02.08.2021
Operator:	Ro
Remarks:	Antenna 1 (Jinchan JCW601), Power setting 1C

pass ☒ fail ☐ Result:

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	18,37	11,63	30,00	**pass**

TESTED IN GERMANY

FCC 1

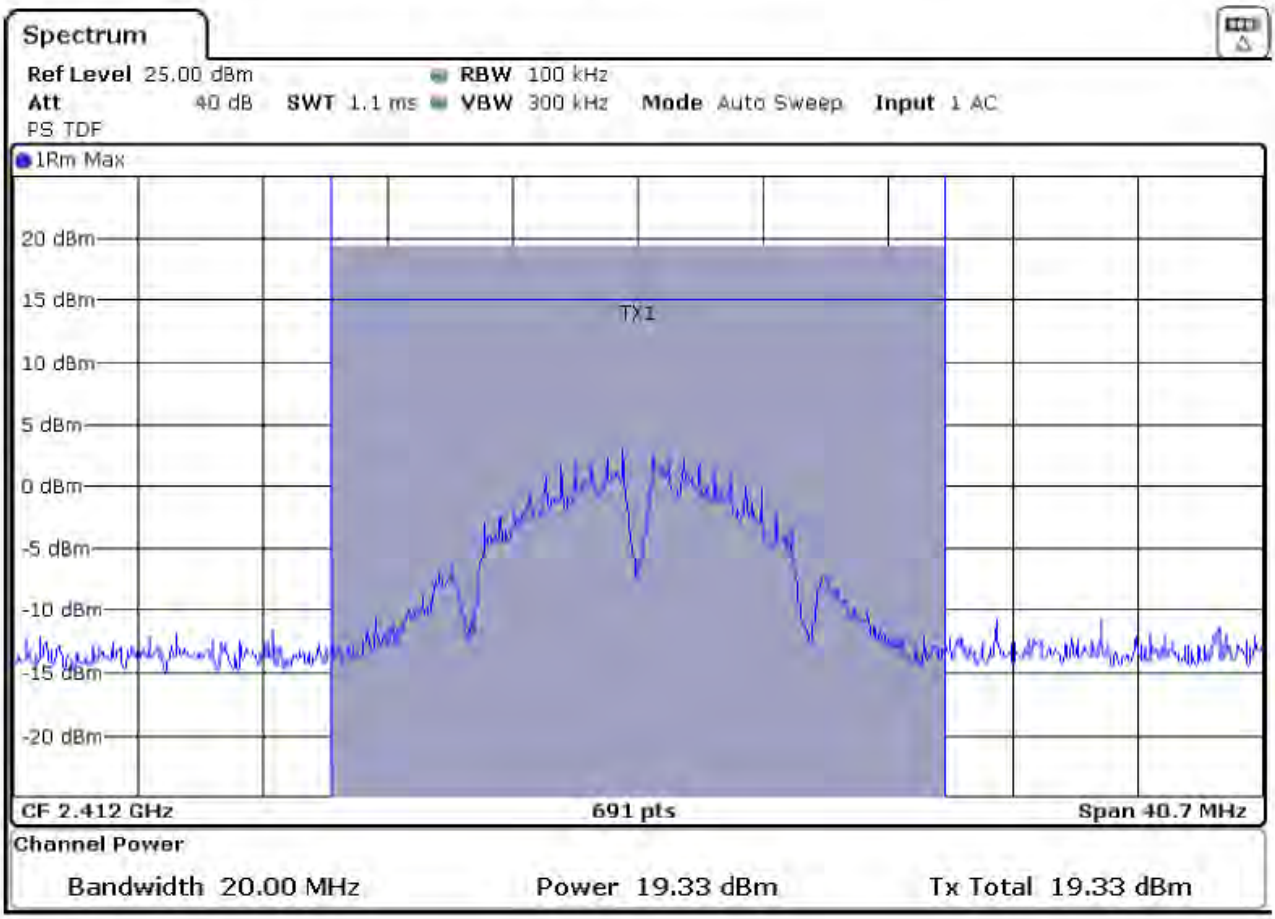
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	19,33	10,67	30,00	**pass**

TESTED IN GERMANY

FCC 1

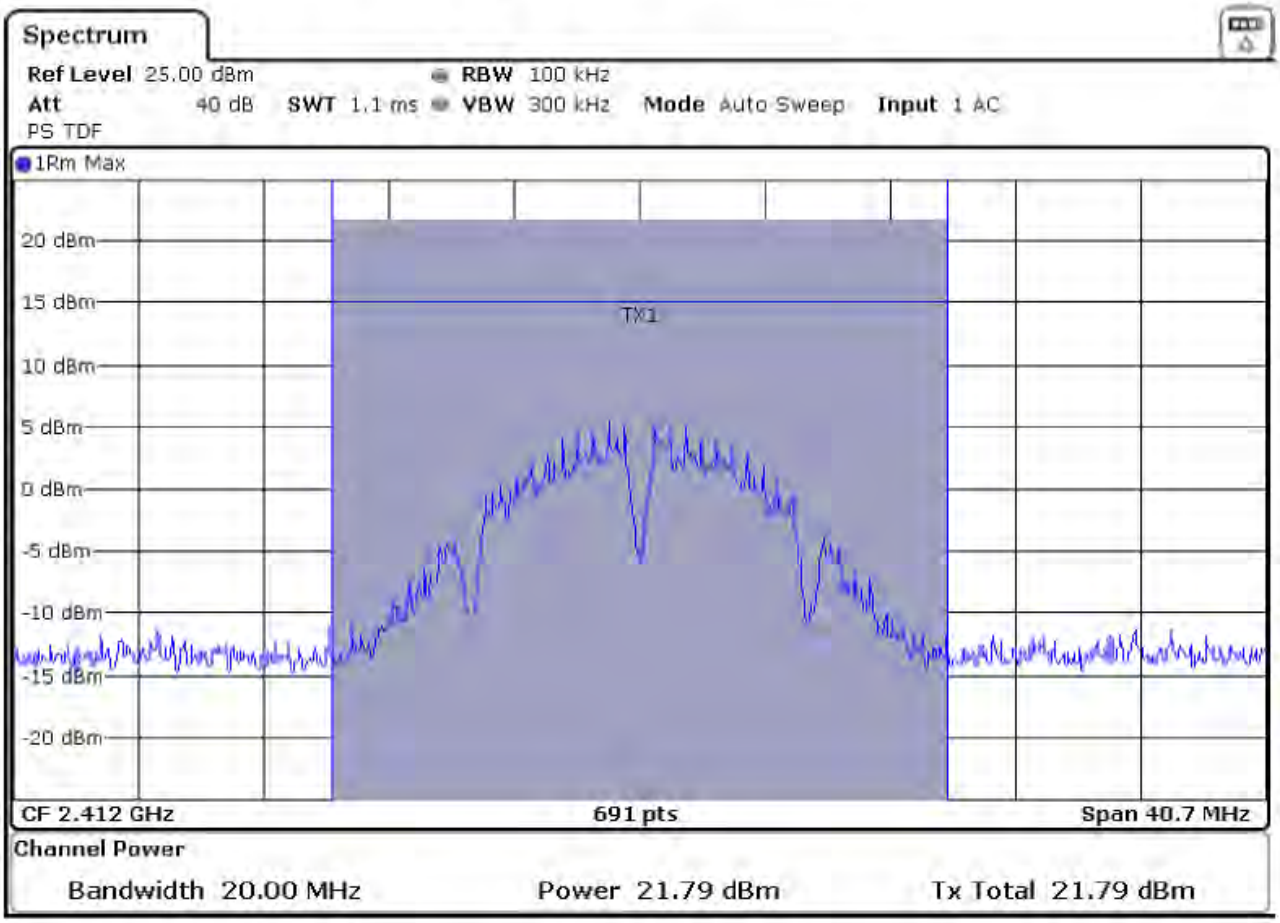
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	21,79	8,21	30,00	**pass**

TESTED IN GERMANY

FCC 1

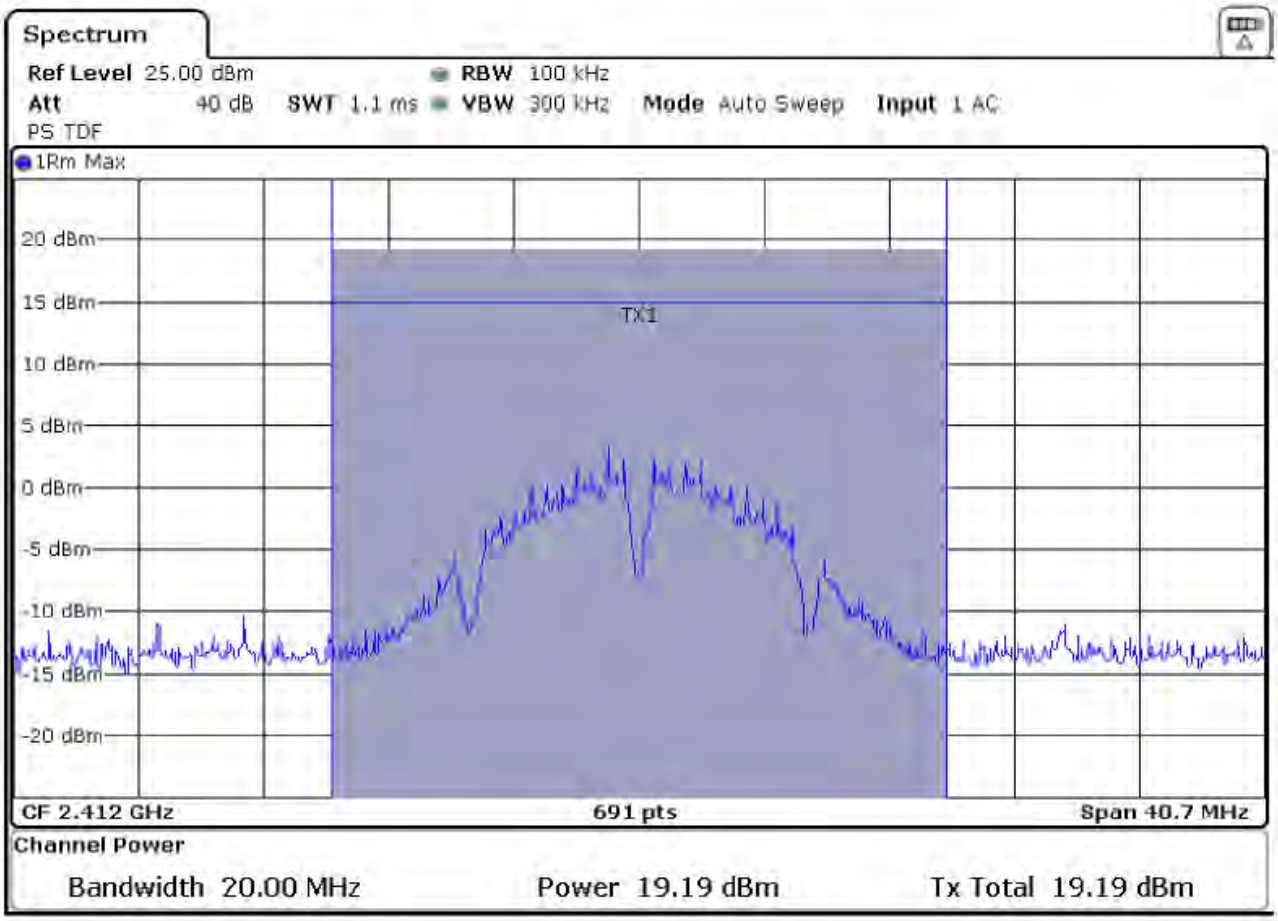
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	19,19	10,81	30,00	**pass**

TESTED IN GERMANY

FCC 1

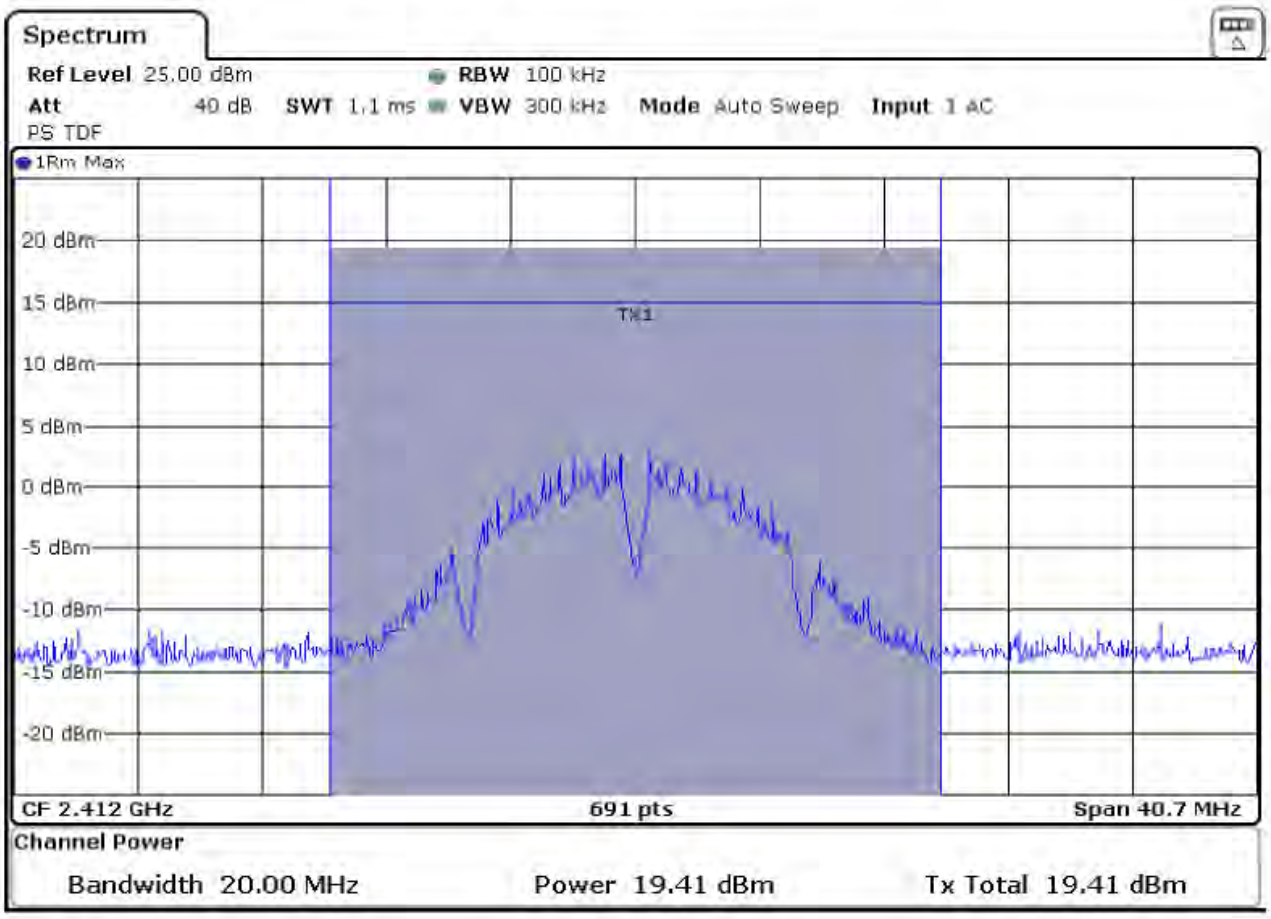
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	19,41	10,59	30,00	**pass**

TESTED IN GERMANY

FCC 1

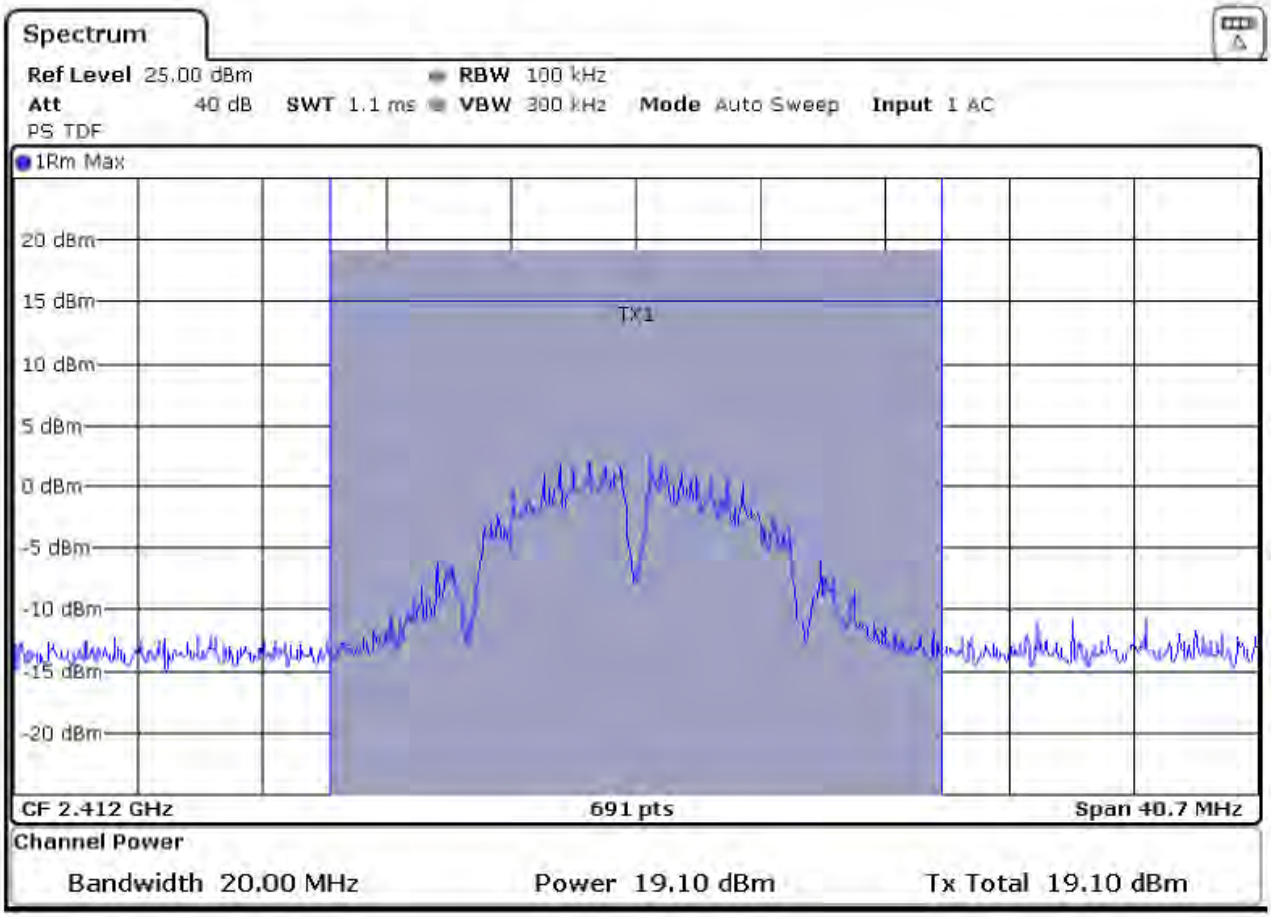
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	19,10	10,90	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2412	18,37	30,00	pass
Position: X	H	2412	19,33	30,00	pass
Position: Y	V	2412	21,79	30,00	pass
Position: Y	H	2412	19,19	30,00	pass
Position: Z	V	2412	19,41	30,00	pass
Position: Z	H	2412	19,10	30,00	pass

Middle operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

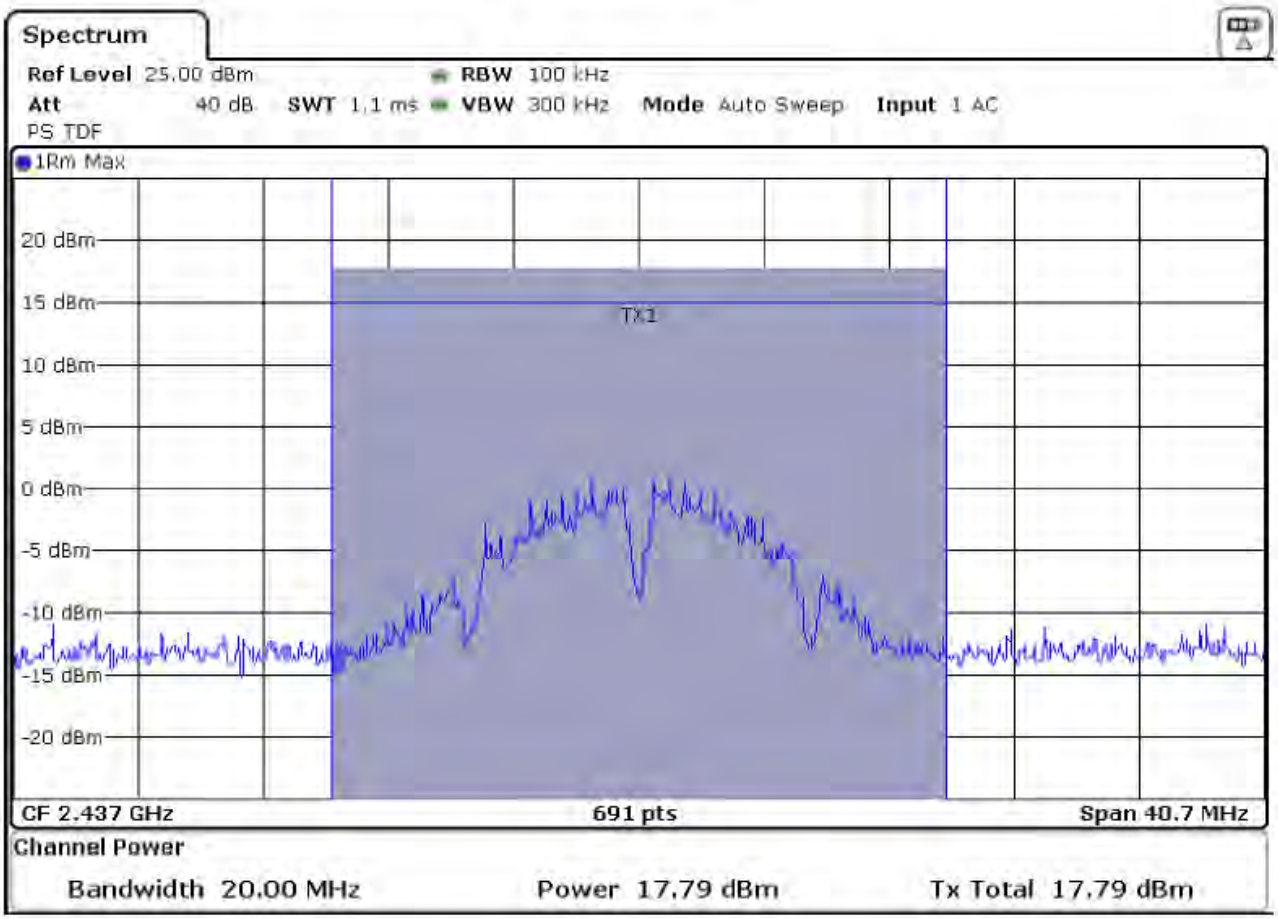
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	17,79	12,21	30,00	**pass**

TESTED IN GERMANY

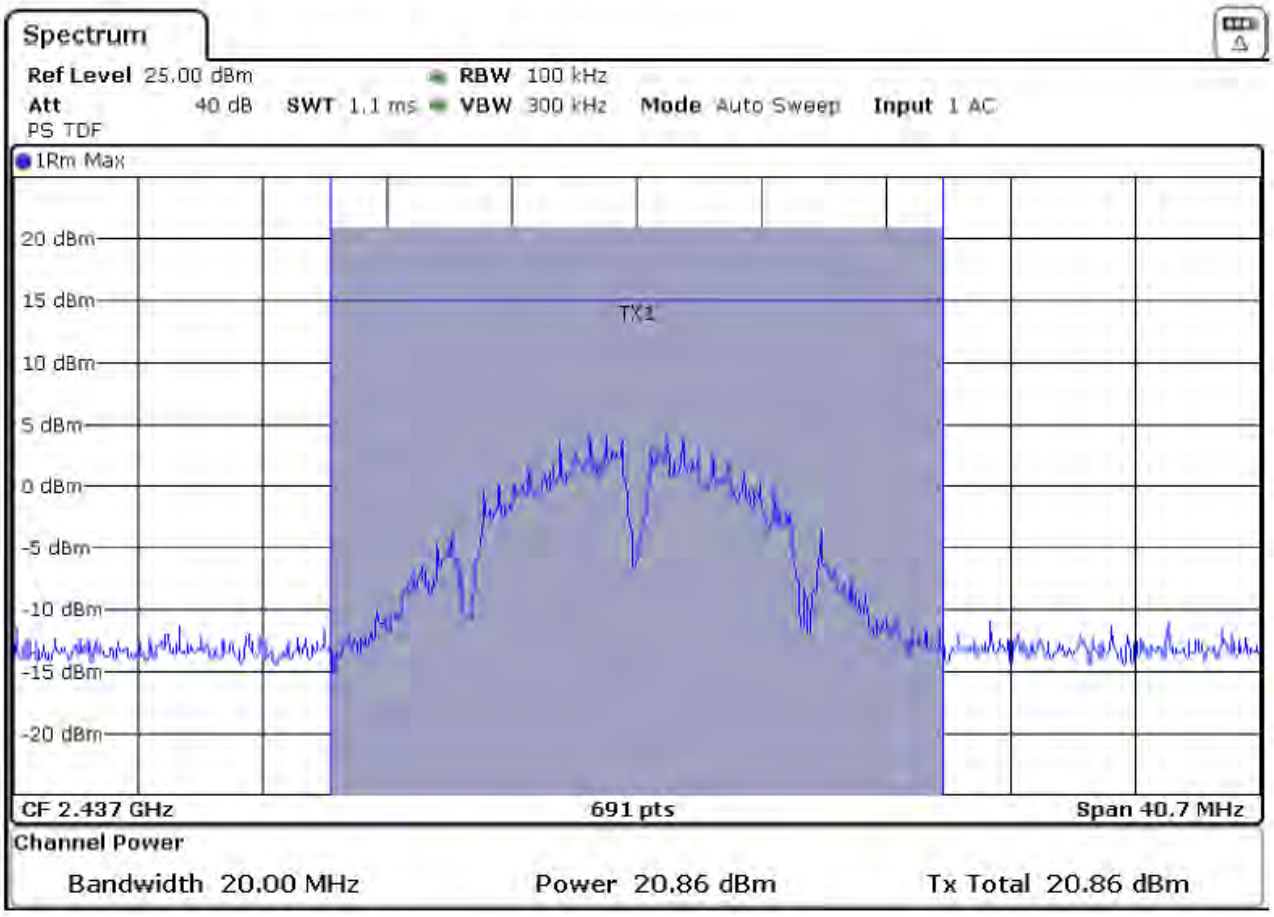
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	20,86	9,14	30,00	**pass**

TESTED IN GERMANY

FCC 1

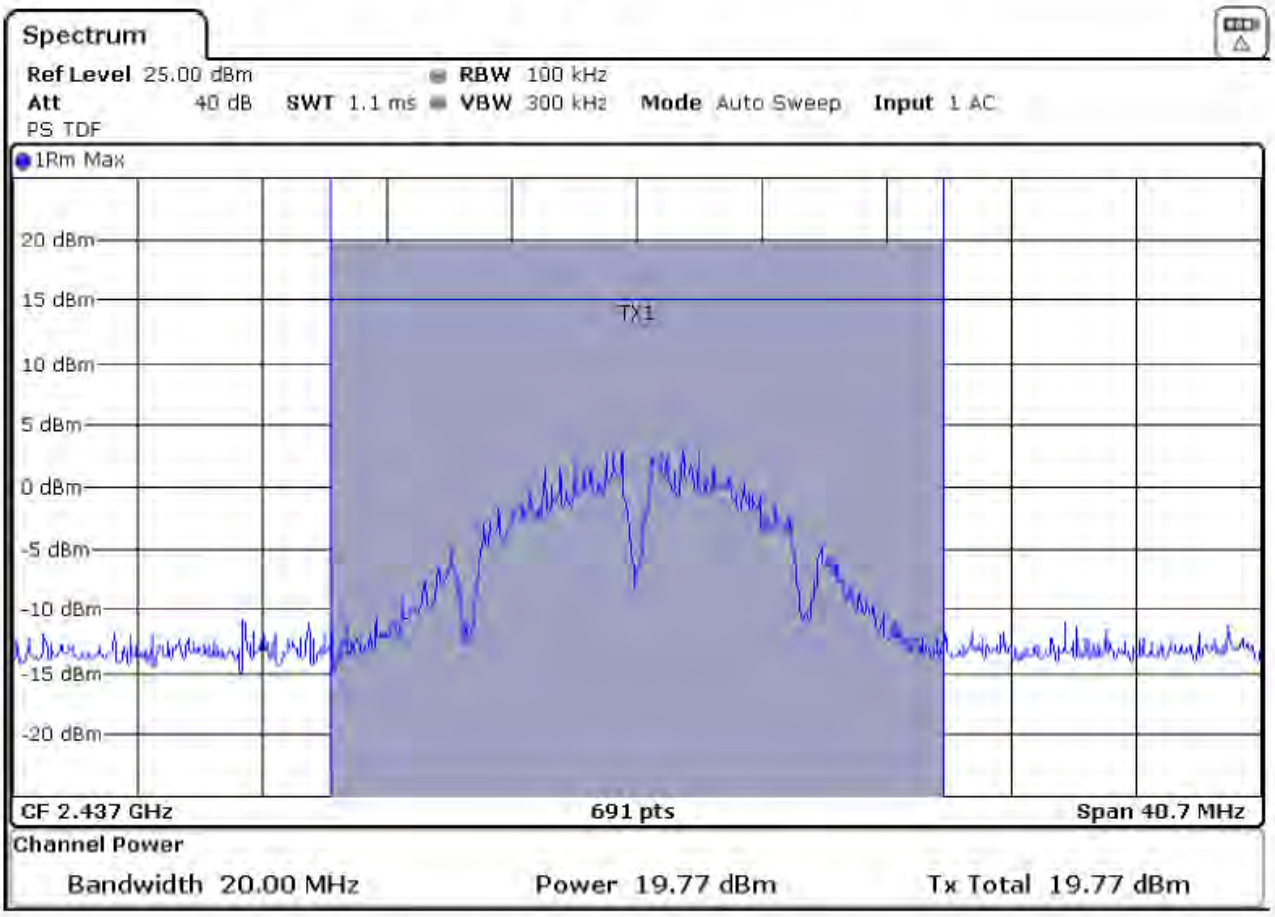
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	19,77	10,23	30,00	**pass**

TESTED IN GERMANY

FCC 1

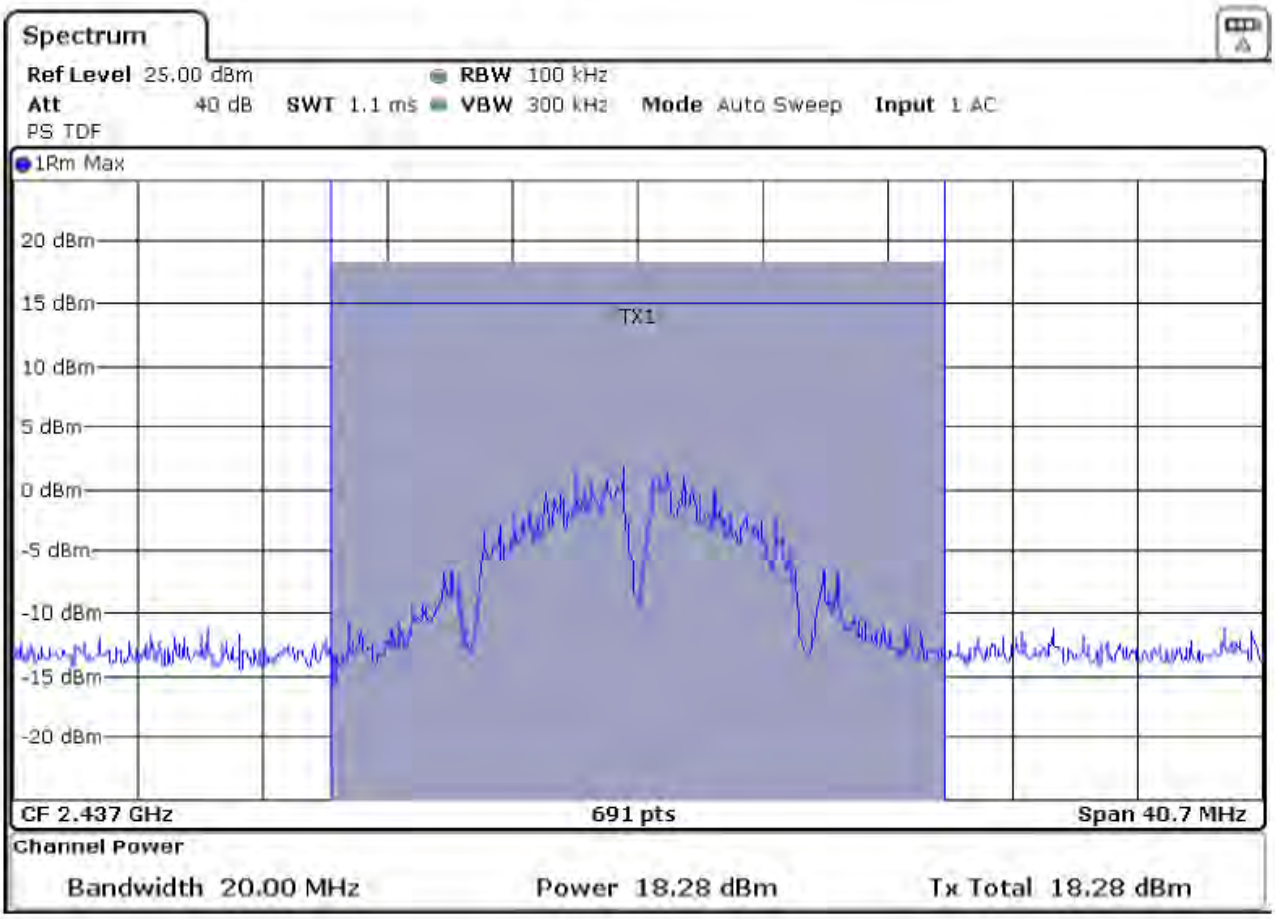
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	18,28	11,72	30,00	**pass**

TESTED IN GERMANY

FCC 1

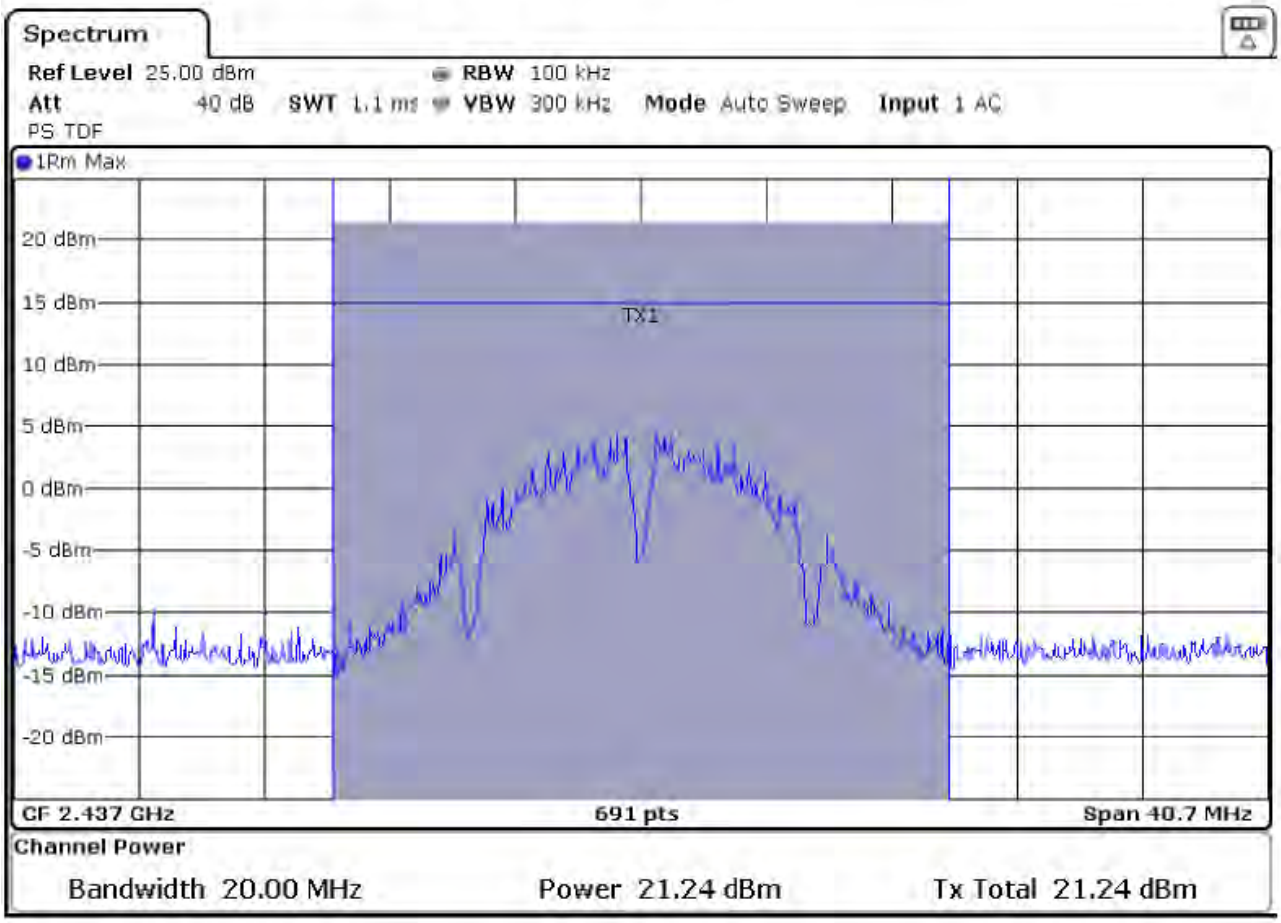
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	21,24	8,76	30,00	**pass**

TESTED IN GERMANY

FCC 1

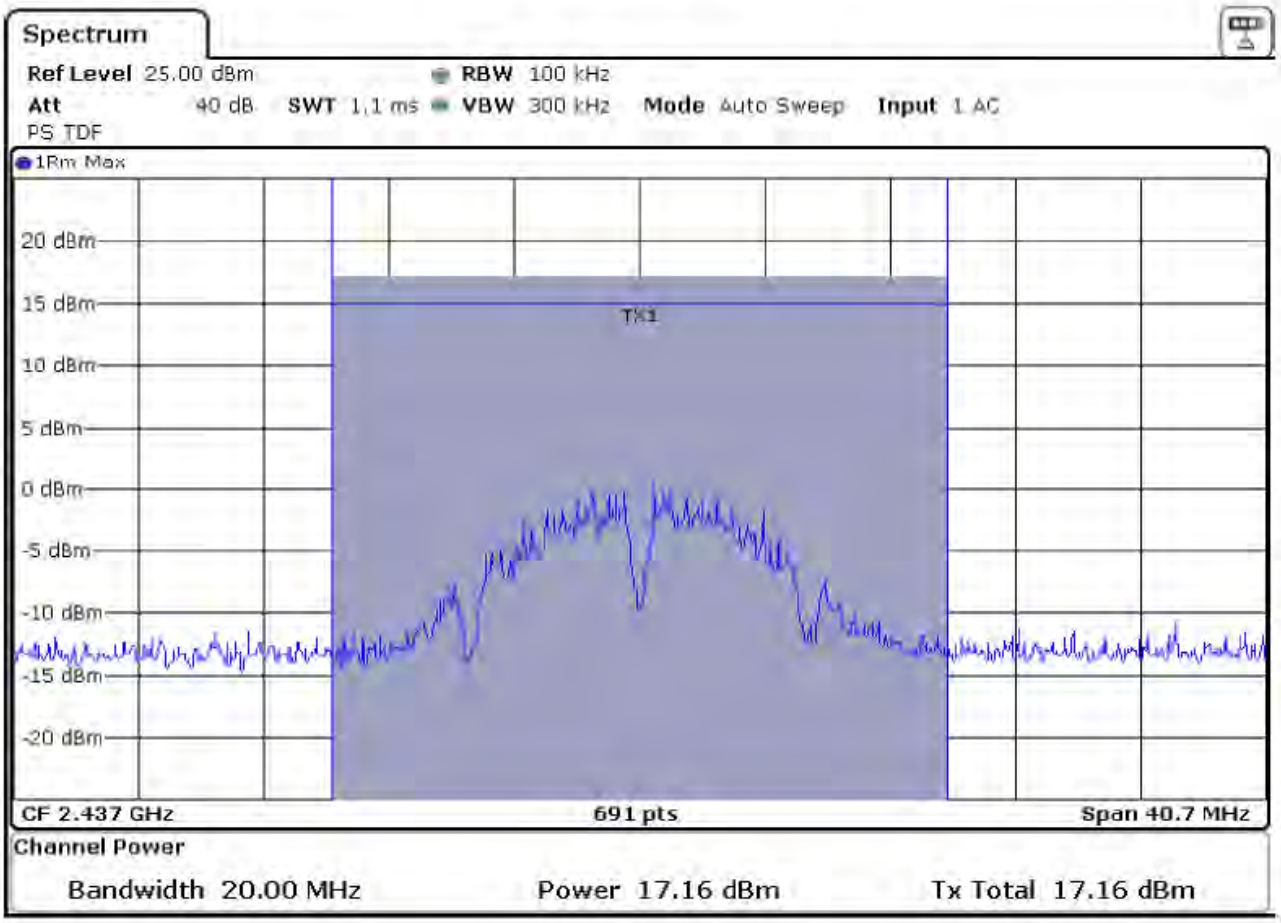
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	17,16	12,84	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions

acc FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2437	17,79	30,00	pass
Position: X	H	2437	20,86	30,00	pass
Position: Y	V	2437	19,77	30,00	pass
Position: Y	H	2437	18,28	30,00	pass
Position: Z	V	2437	21,24	30,00	pass
Position: Z	H	2437	17,16	30,00	pass

Highest operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

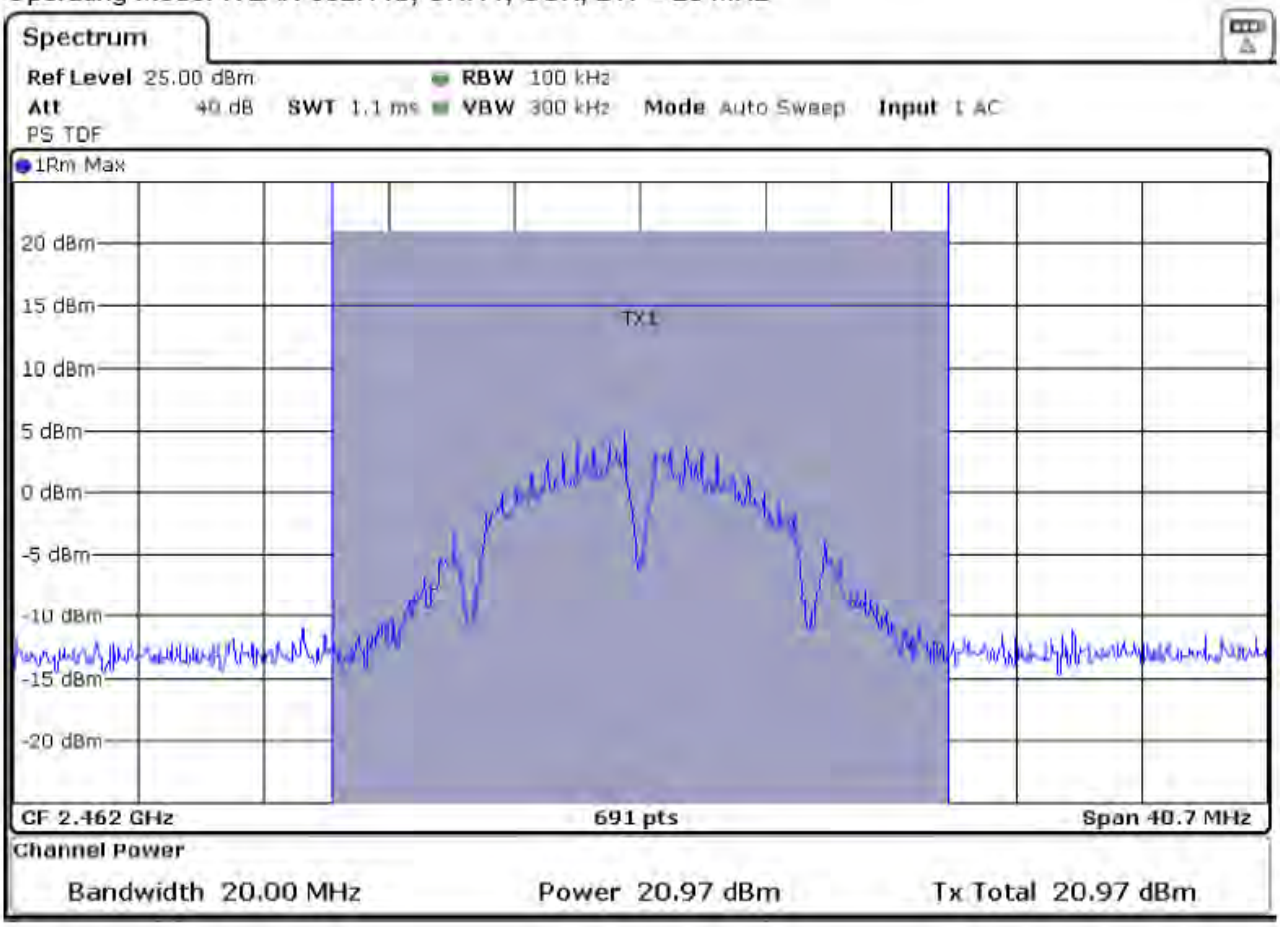
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.11, CCK, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	20,97	9,03	30,00	**pass**

TESTED IN GERMANY

FCC 1

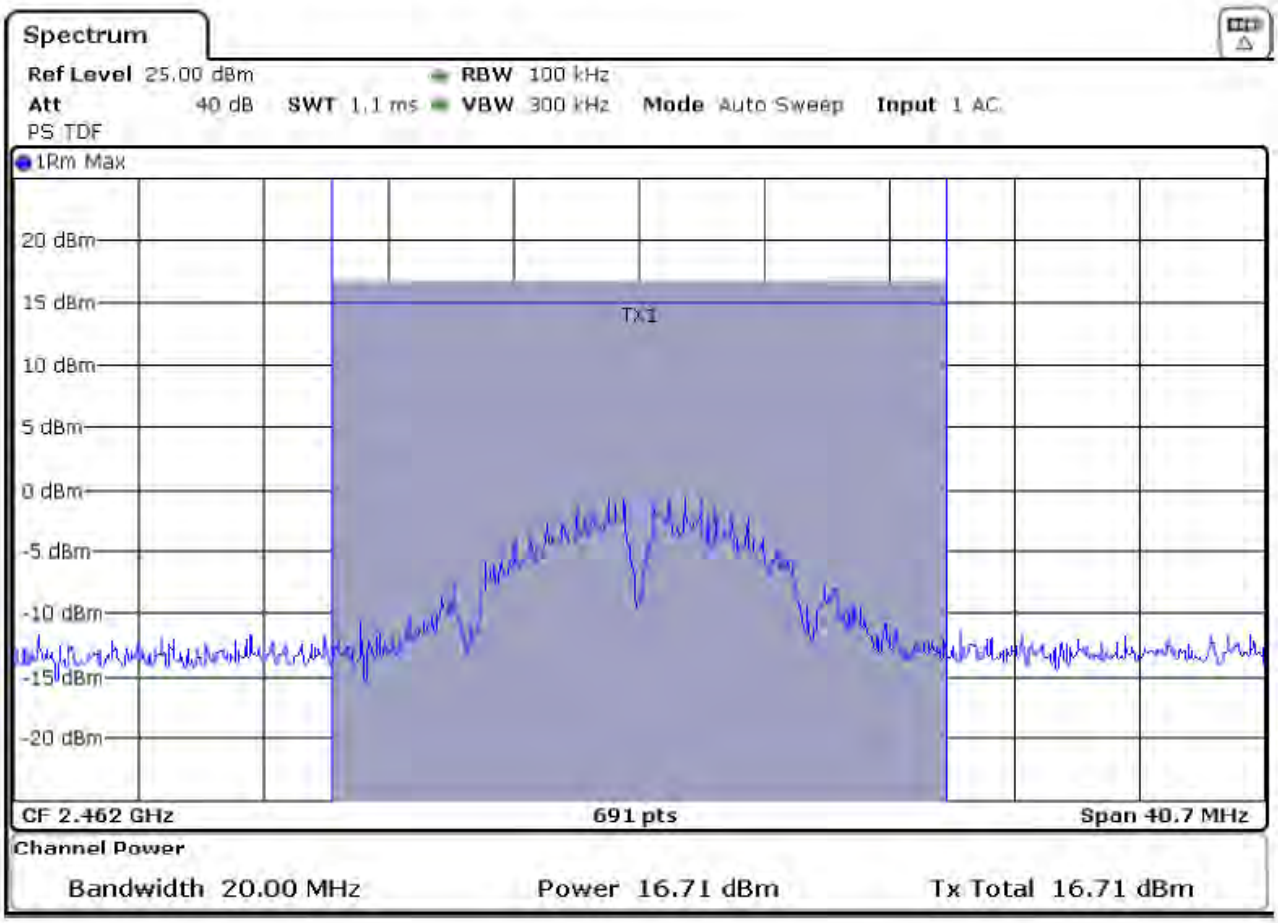
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.11, CCK, BW = 20 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	16,71	13,29	30,00	**pass**

TESTED IN GERMANY

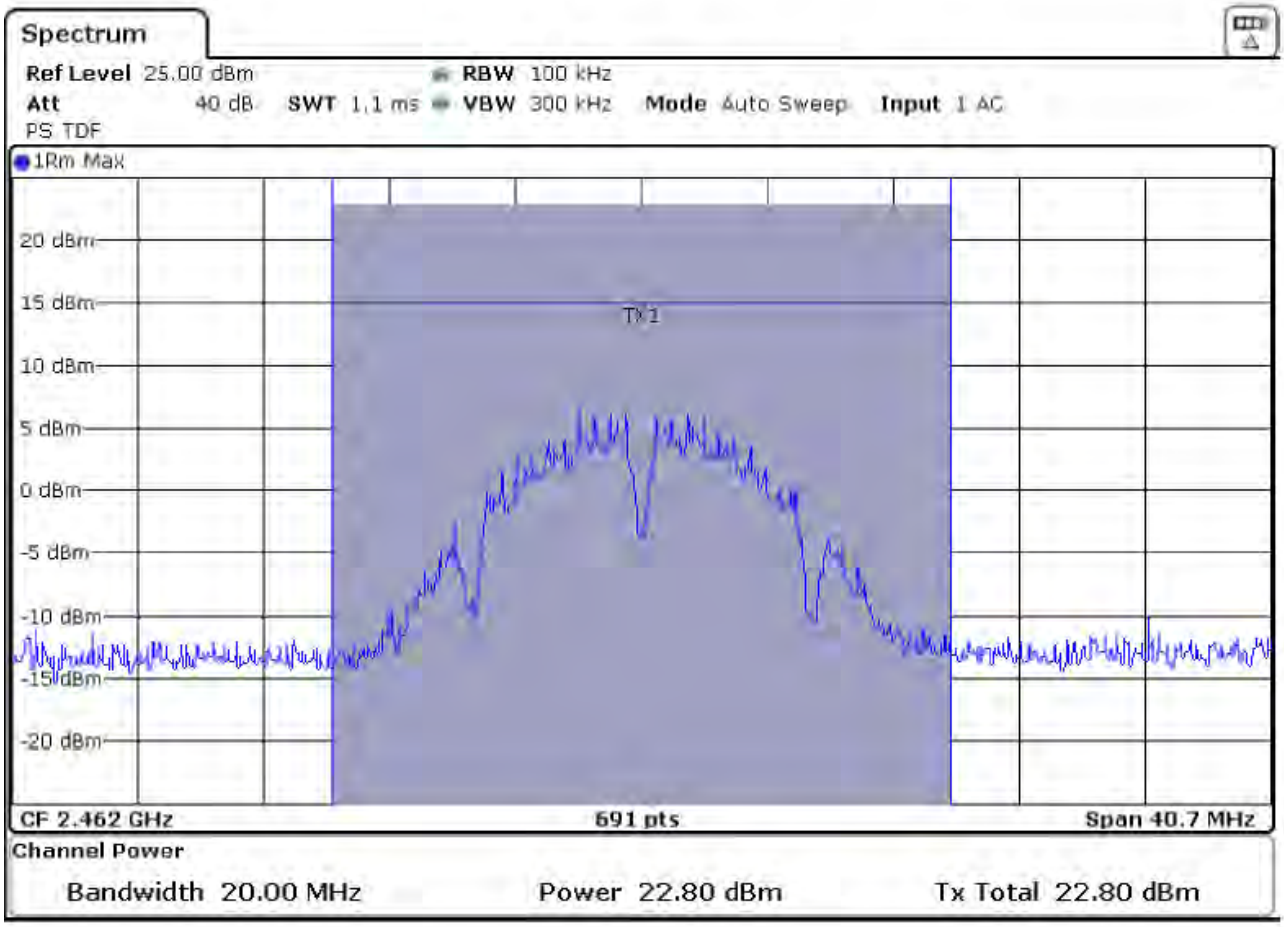
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.11, CCK, BW = 20 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	22,80	7,20	30,00	**pass**

TESTED IN GERMANY

FCC 1

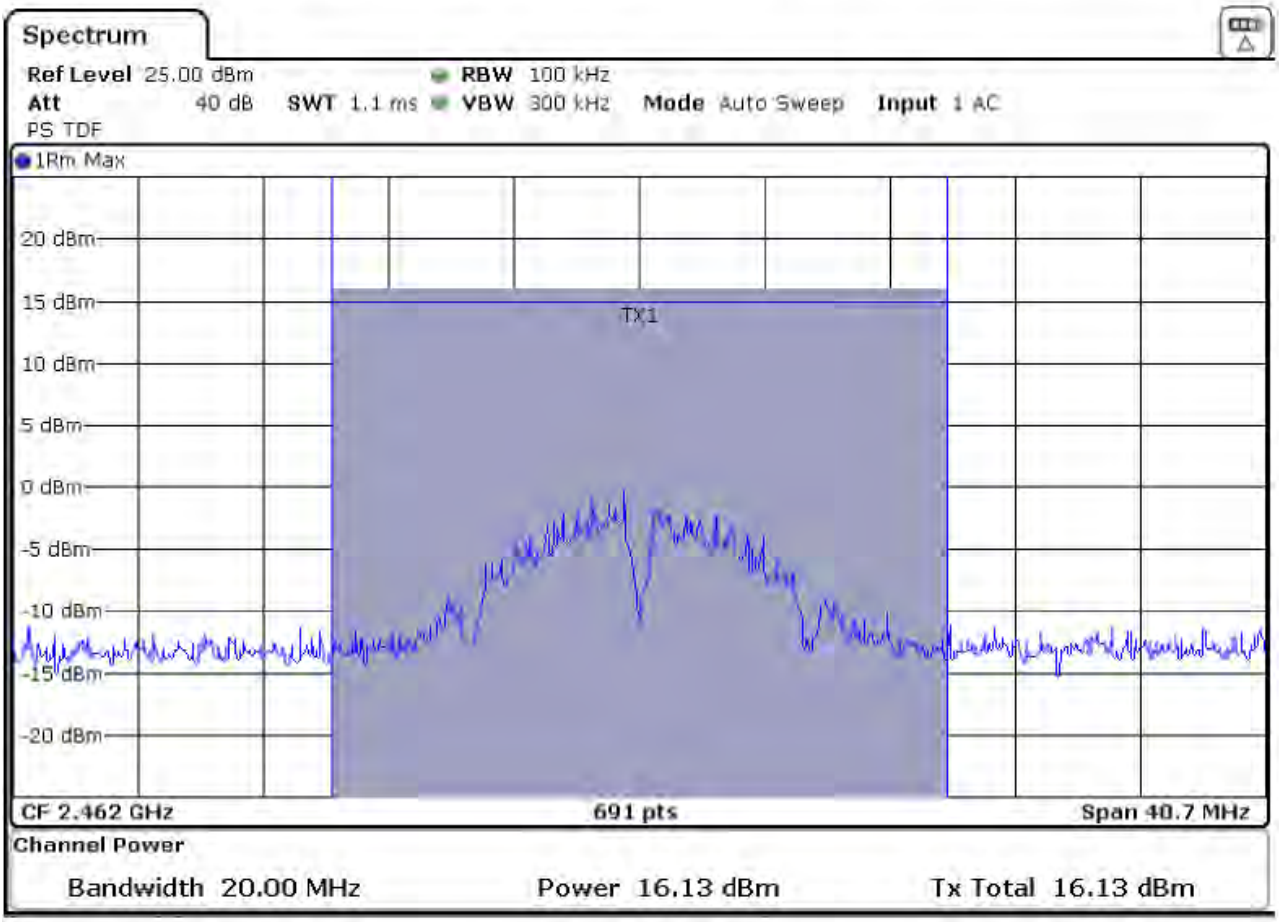
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.11, CCK, BW = 20 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	16,13	13,87	30,00	**pass**

TESTED IN GERMANY

FCC 1

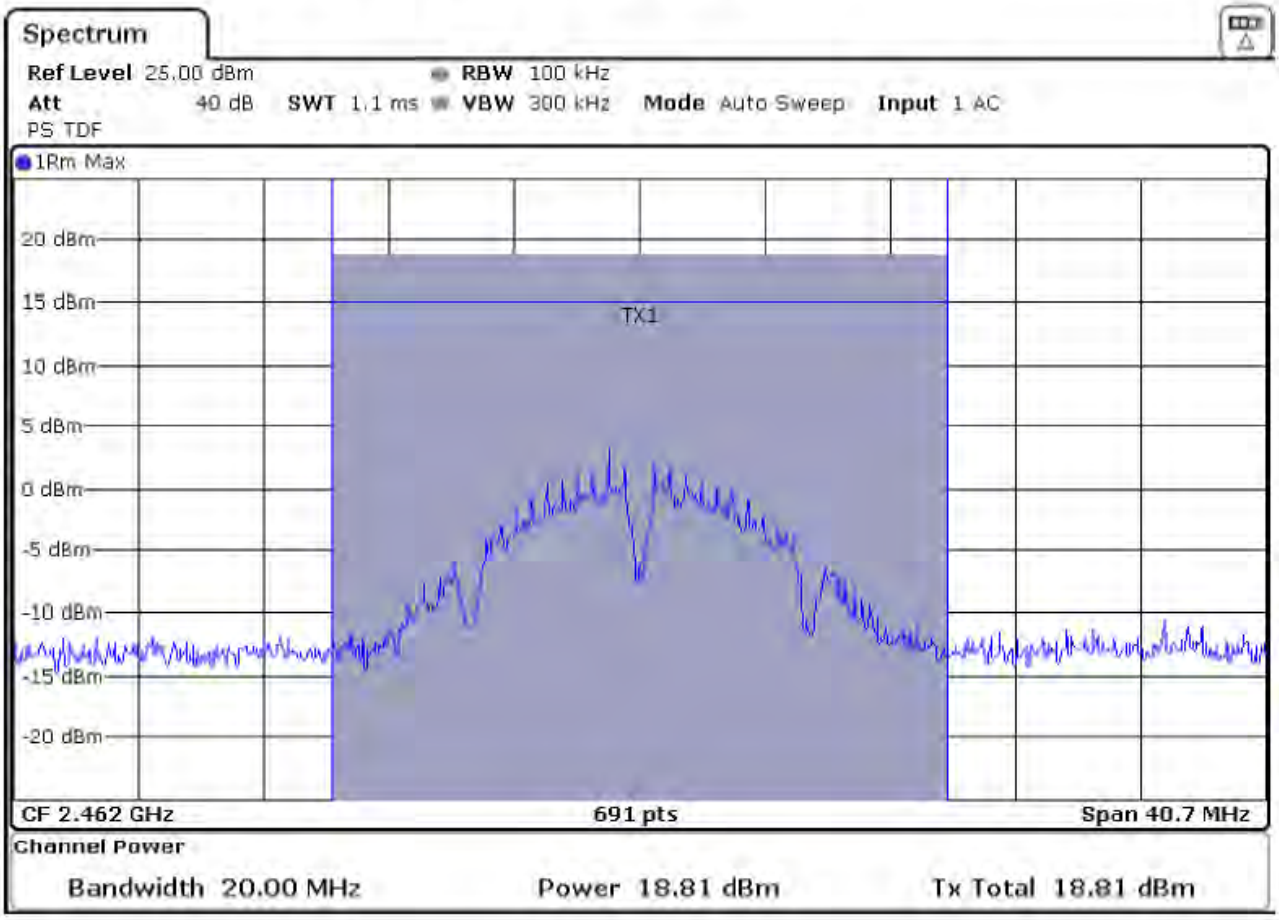
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.11, CCK, BW = 20 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	18,81	11,19	30,00	**pass**

TESTED IN GERMANY

FCC 1

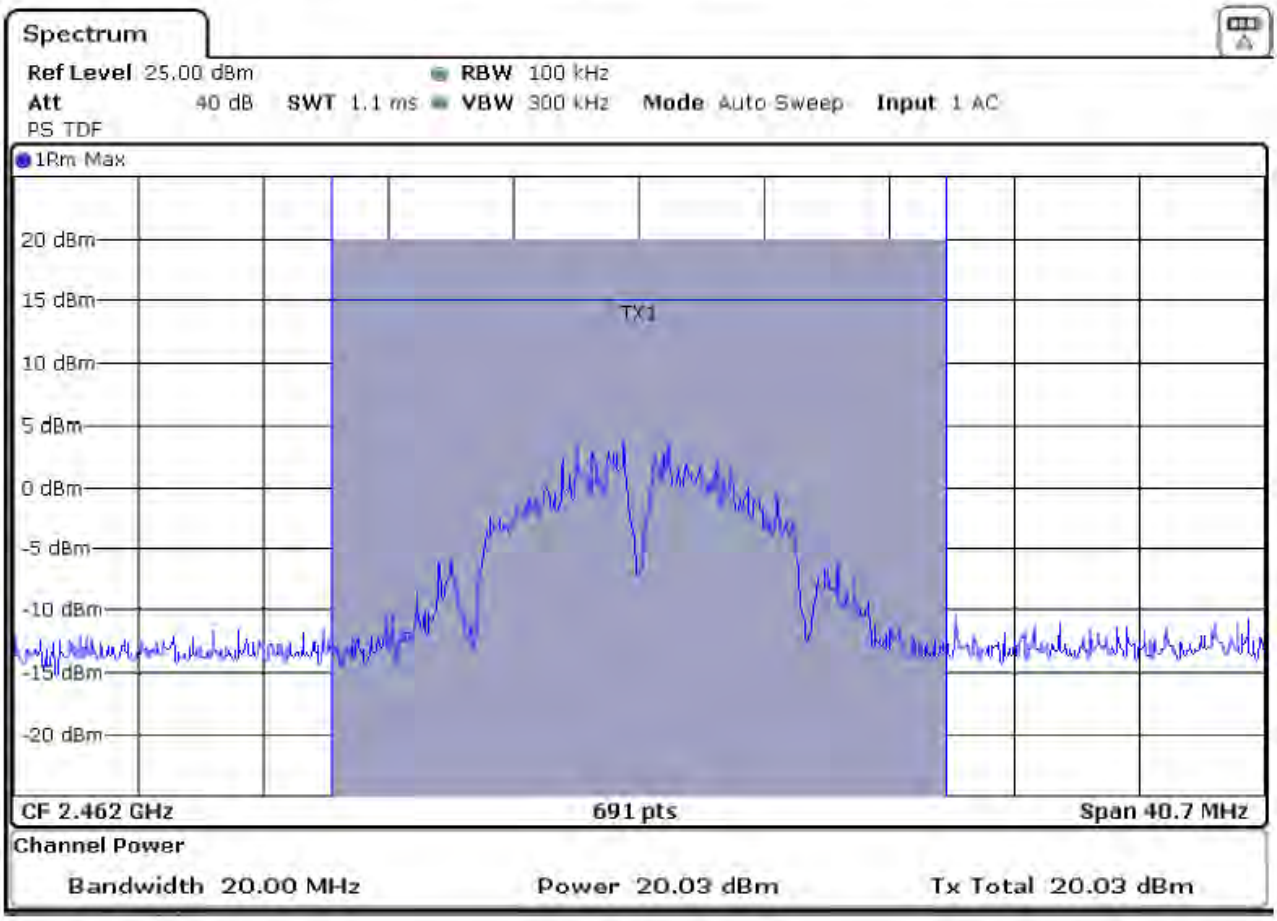
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.11, CCK, BW = 20 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	20,03	9,97	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2462	20,97	30,00	pass
Position: X	H	2462	16,71	30,00	pass
Position: Y	V	2462	22,80	30,00	pass
Position: Y	H	2462	16,13	30,00	pass
Position: Z	V	2462	18,81	30,00	pass
Position: Z	H	2462	20,03	30,00	pass

Maximum output power radiated measurement:
802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX1 / external Antenna typ 1

Channel	Frequency [MHz]	Output Power		Limit		Result
		[dBm]	[mW]	[dBm]	[mW]	
1	2412	21.79	151.01	30	1000	Pass
6	2437	21.24	133.05	30	1000	Pass
11	2462	22,80	190.55	30	1000	Pass

Lowest operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX0 / ext. Antenna typ 1

TESTED IN GERMANY

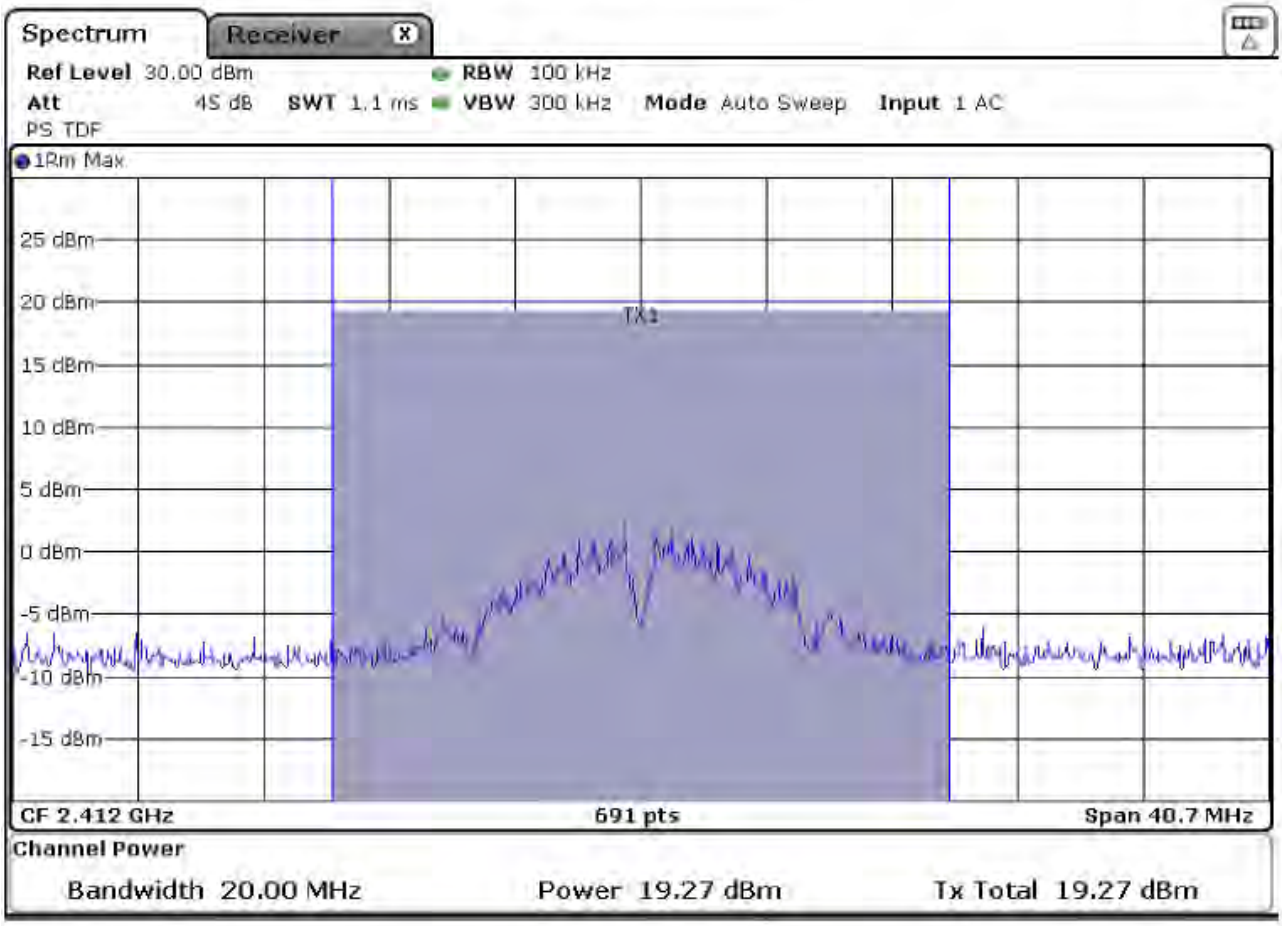
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.:	20/01-0031			
Product:	Transmitting / Receiving System			
Sample:	01			
Date:	02.08.2021			
Operator:	Ro		pass	fail
Remarks:	Antenna 1 (Jinchan JCW601), Power setting 1C, Tx/Rx0	Result:	☒	☐

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	19,27	10,73	30,00	**pass**

TESTED IN GERMANY

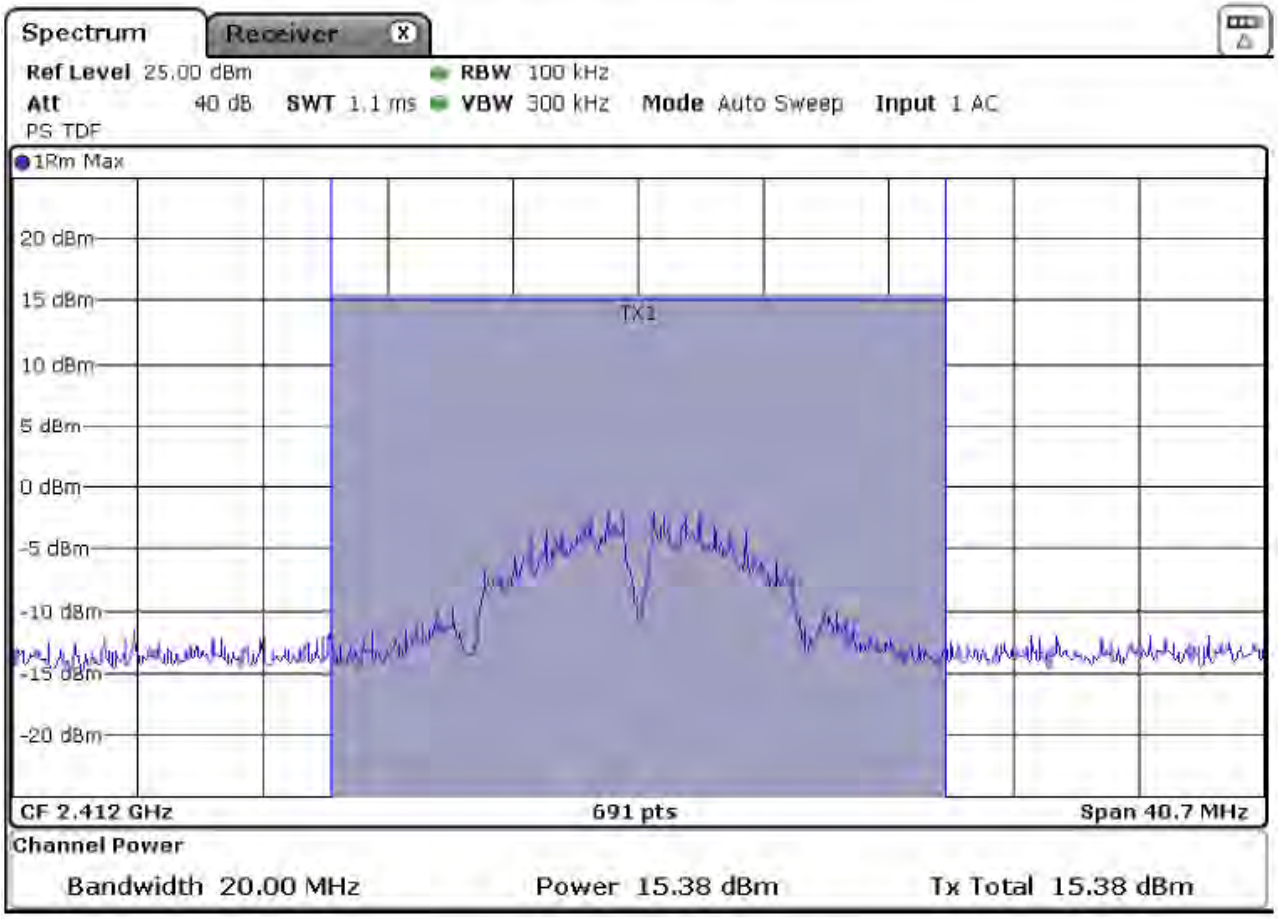
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	15,38	14,62	30,00	**pass**

Middle operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX0 / ext. Antenna typ 1

TESTED IN GERMANY

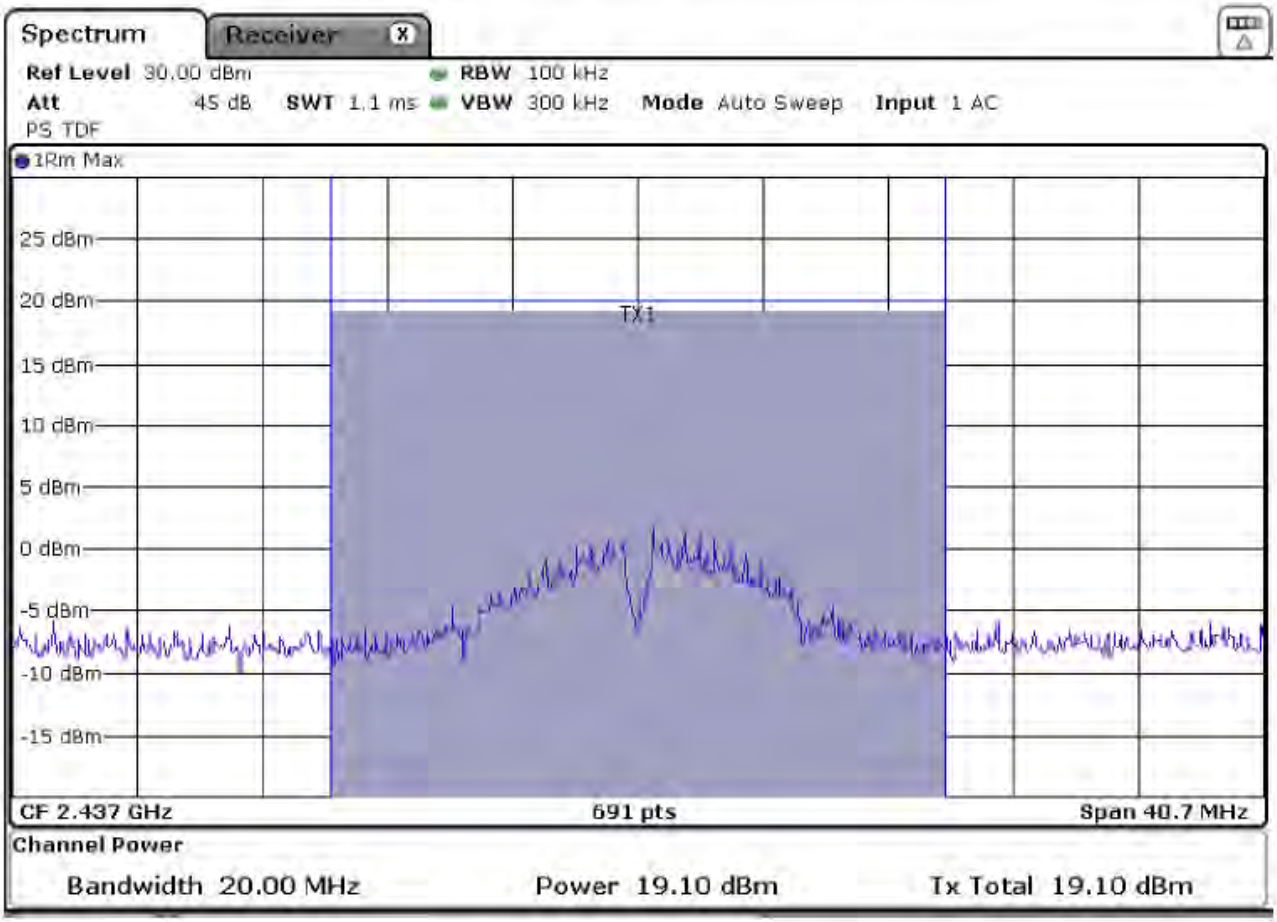
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	19,10	10,90	30,00	**pass**

TESTED IN GERMANY

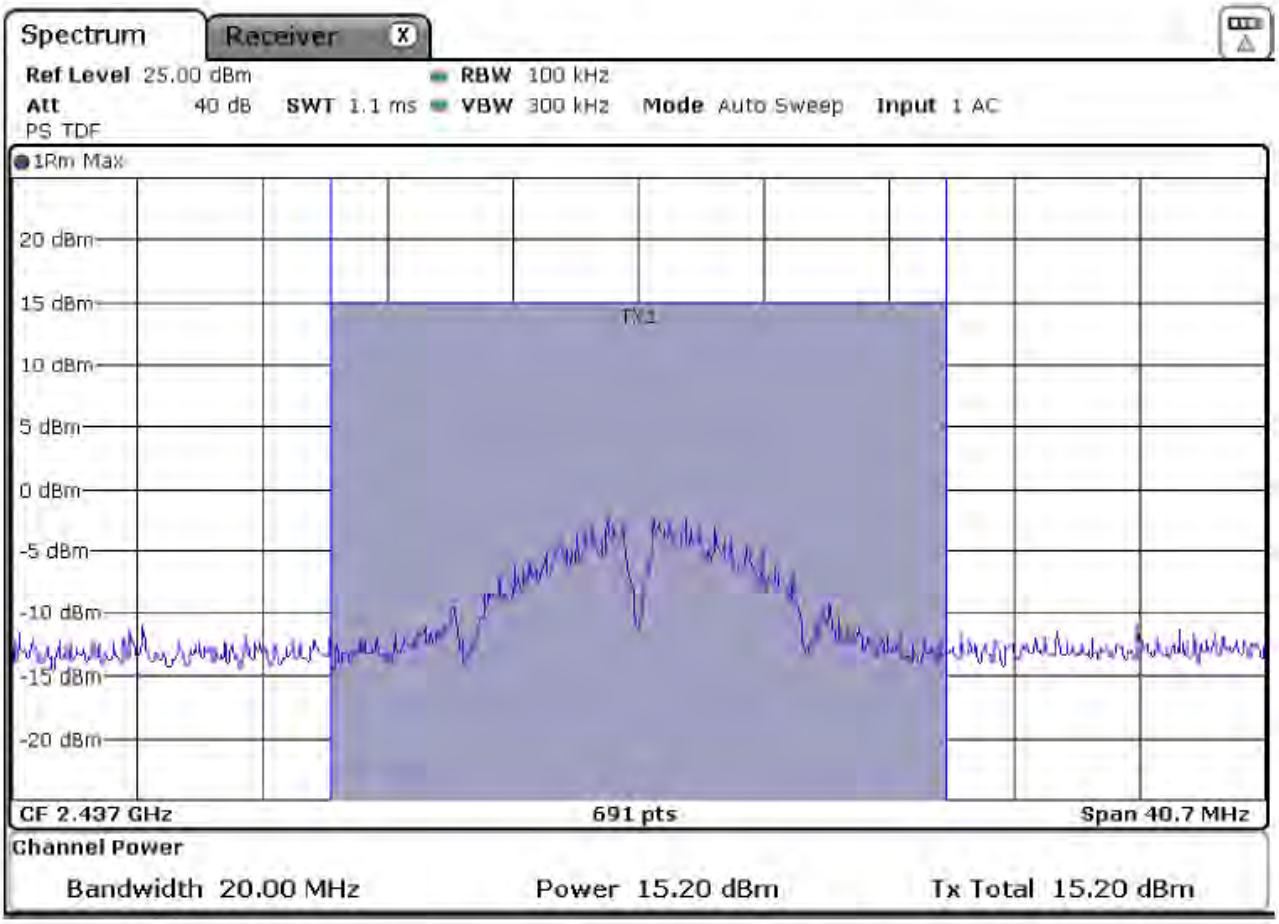
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	15,20	14,80	30,00	**pass**

Highest operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX0 / ext. Antenna typ 1

TESTED IN GERMANY

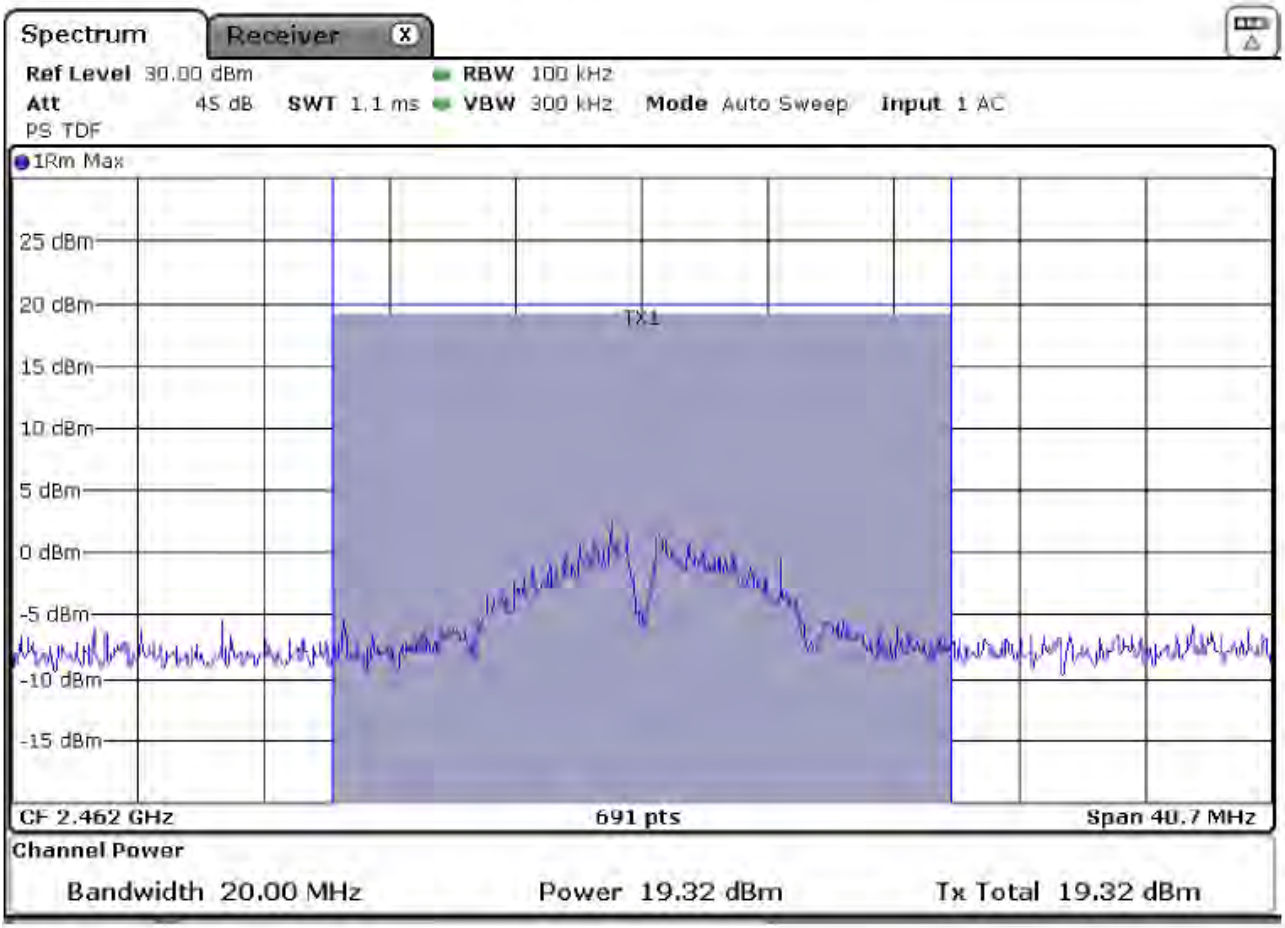
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.11, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	19,32	10,68	30,00	**pass**

TESTED IN GERMANY

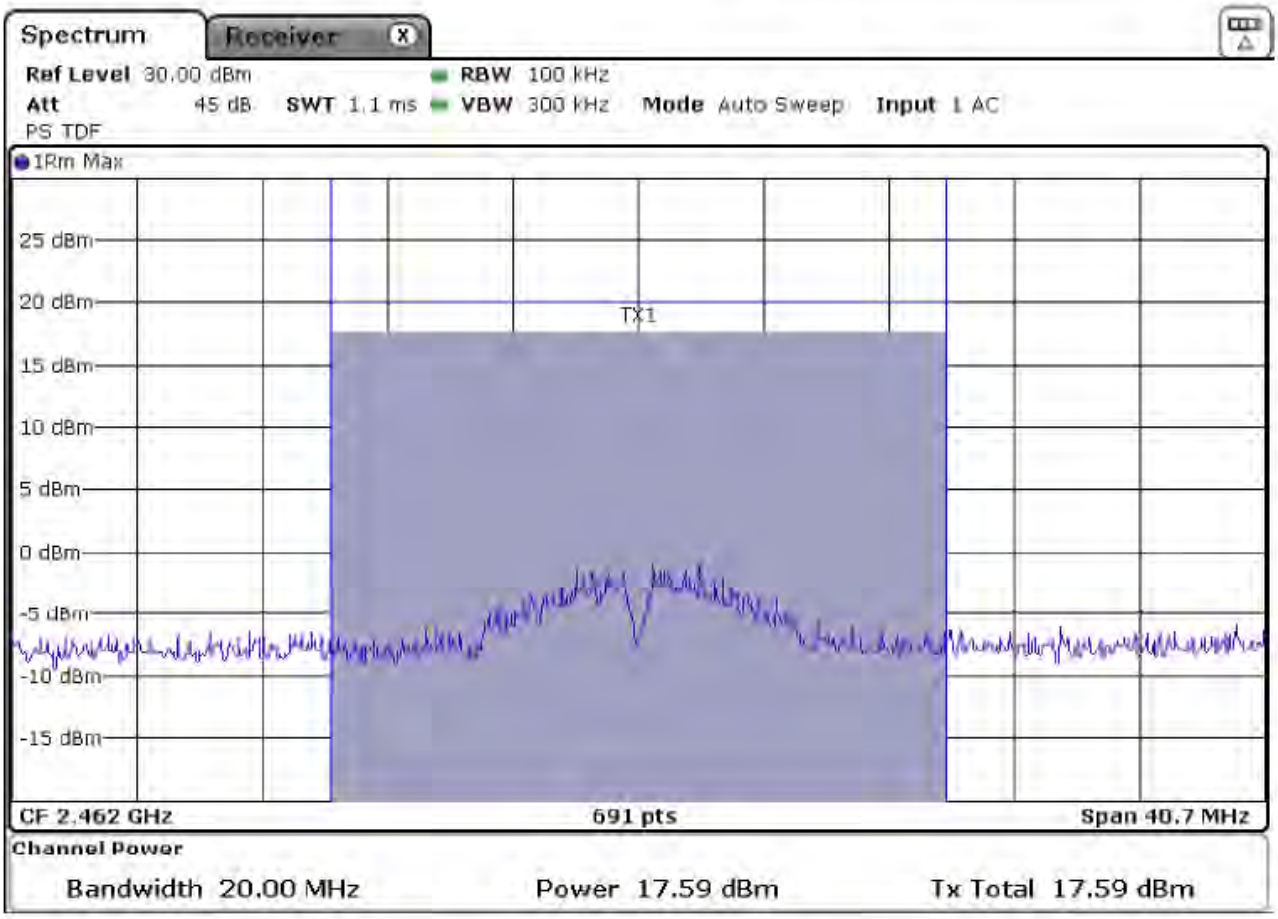
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.11, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	17,59	12,41	30,00	**pass**

Maximum output power radiated measurement: 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX0 / external Antenna typ 1						
Channel	Frequency [MHz]	Output Power		Limit		Result
		[dBm]	[mW]	[dBm]	[mW]	
1	2412	19.27	84.53	30	1000	Pass
6	2437	19.10	81.28	30	1000	Pass
11	2462	19.32	85.51	30	1000	Pass

Maximum output power conducted measurement: 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX0 + TX/RX1 / external Antenna typ 1								
Channel	Frequency [MHz]	Output TX/RX0 [mW]	Output TX/RX1 [mW]	Total Output Power		Limit		Result
				[dBm]	[mW]	[dBm]	[mW]	
1	2412	84.53	151.01	23.72	235.54	30	1000	Pass
6	2437	81.28	133.05	23.31	214.33	30	1000	Pass
11	2462	85.51	190.55	24.41	276.06	30	1000	Pass
According to KDB 662911 D01								

Lowest operating frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

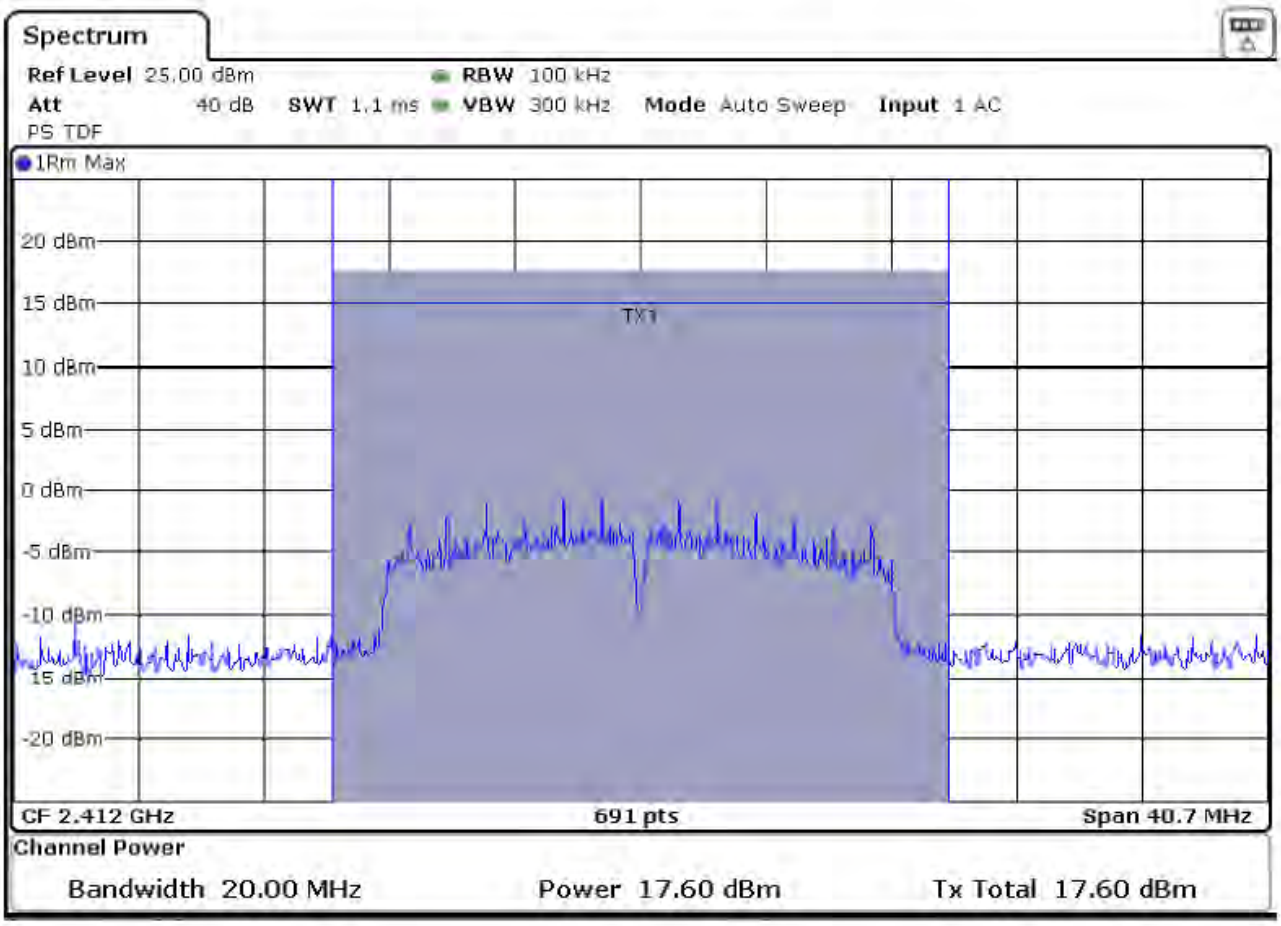
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.1, OFDM, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	17,60	12,40	30,00	**pass**

TESTED IN GERMANY

FCC 1

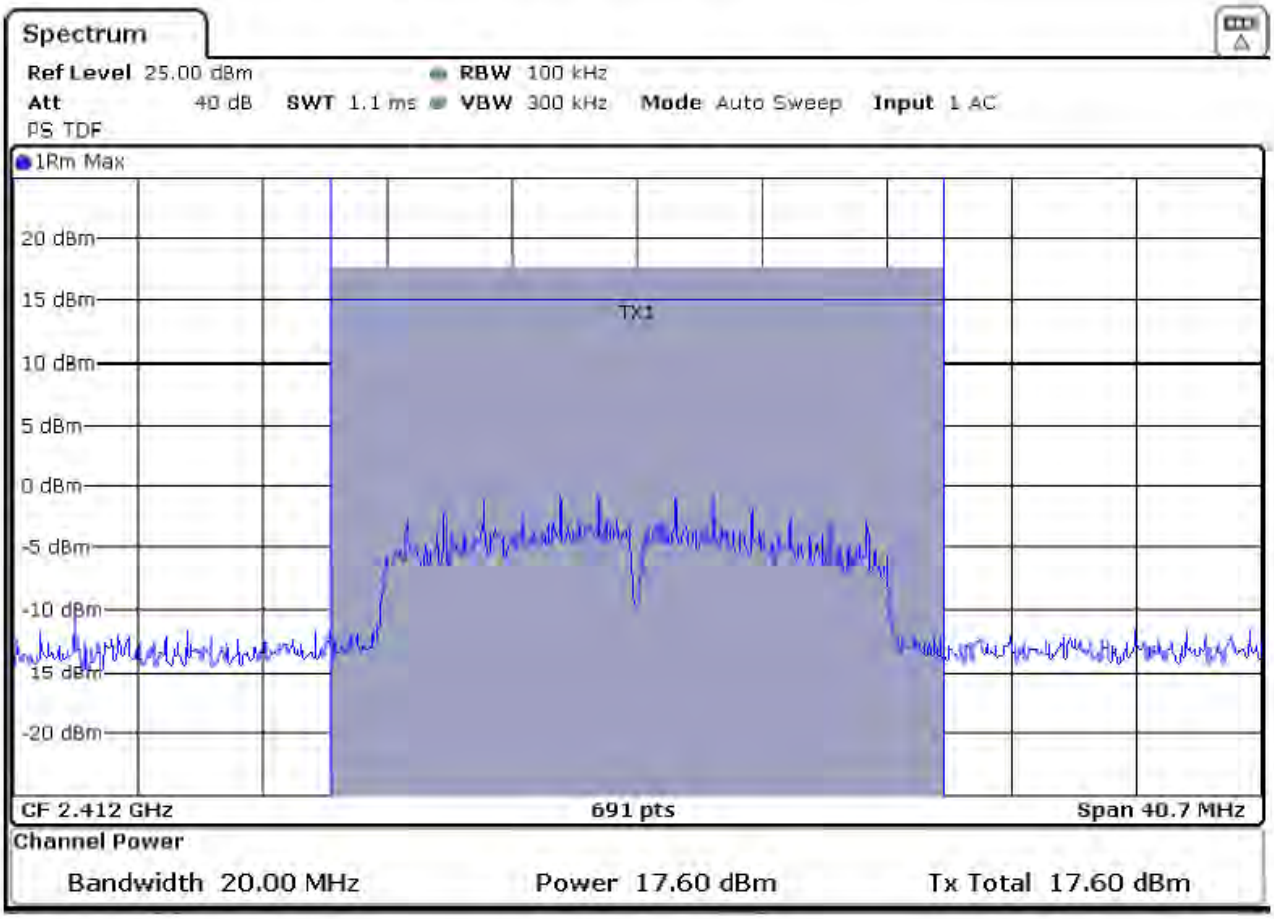
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.1, OFDM, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	17,60	12,40	30,00	**pass**

TESTED IN GERMANY

FCC 1

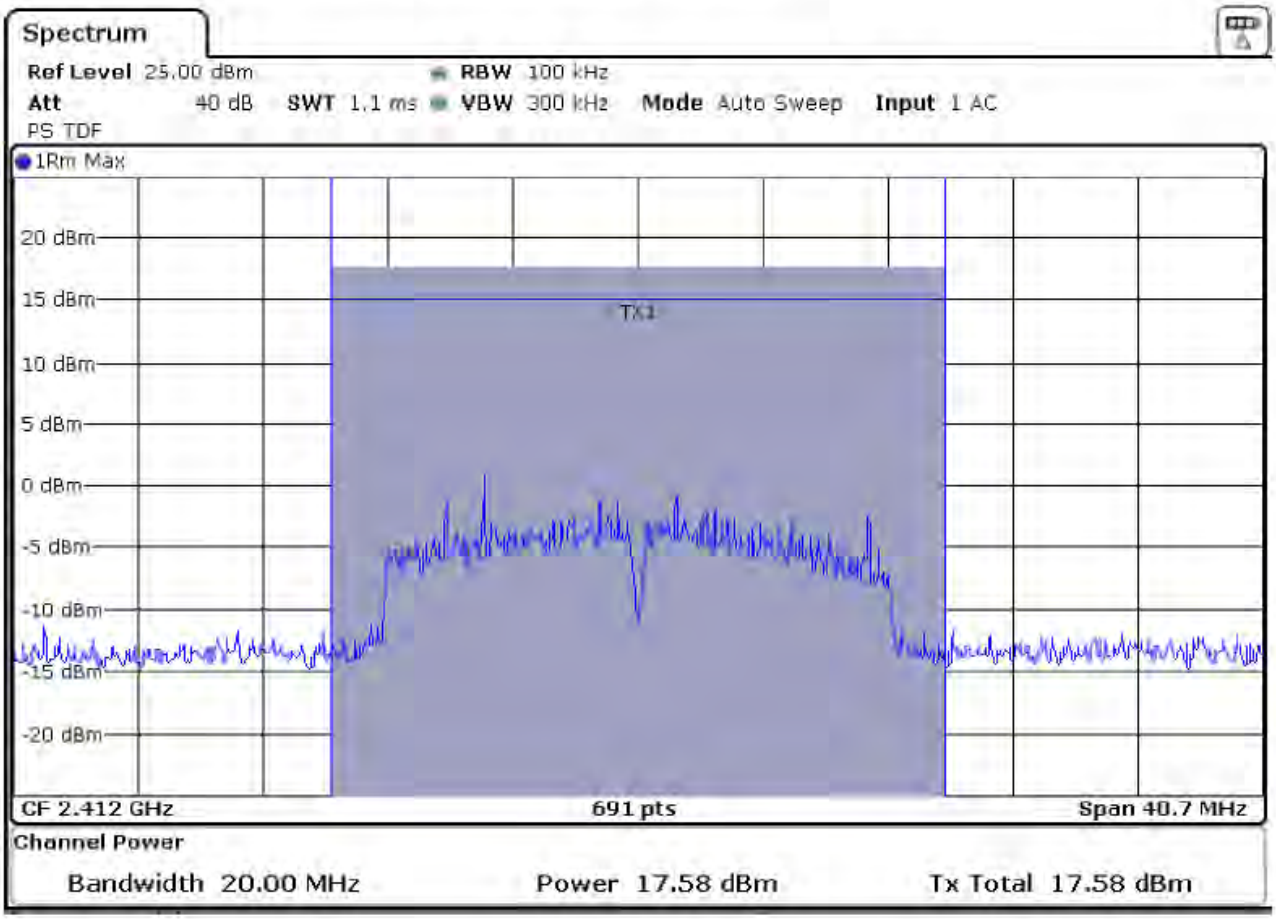
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.1, OFDM, BW = 20 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	17,58	12,42	30,00	**pass**

TESTED IN GERMANY

FCC 1

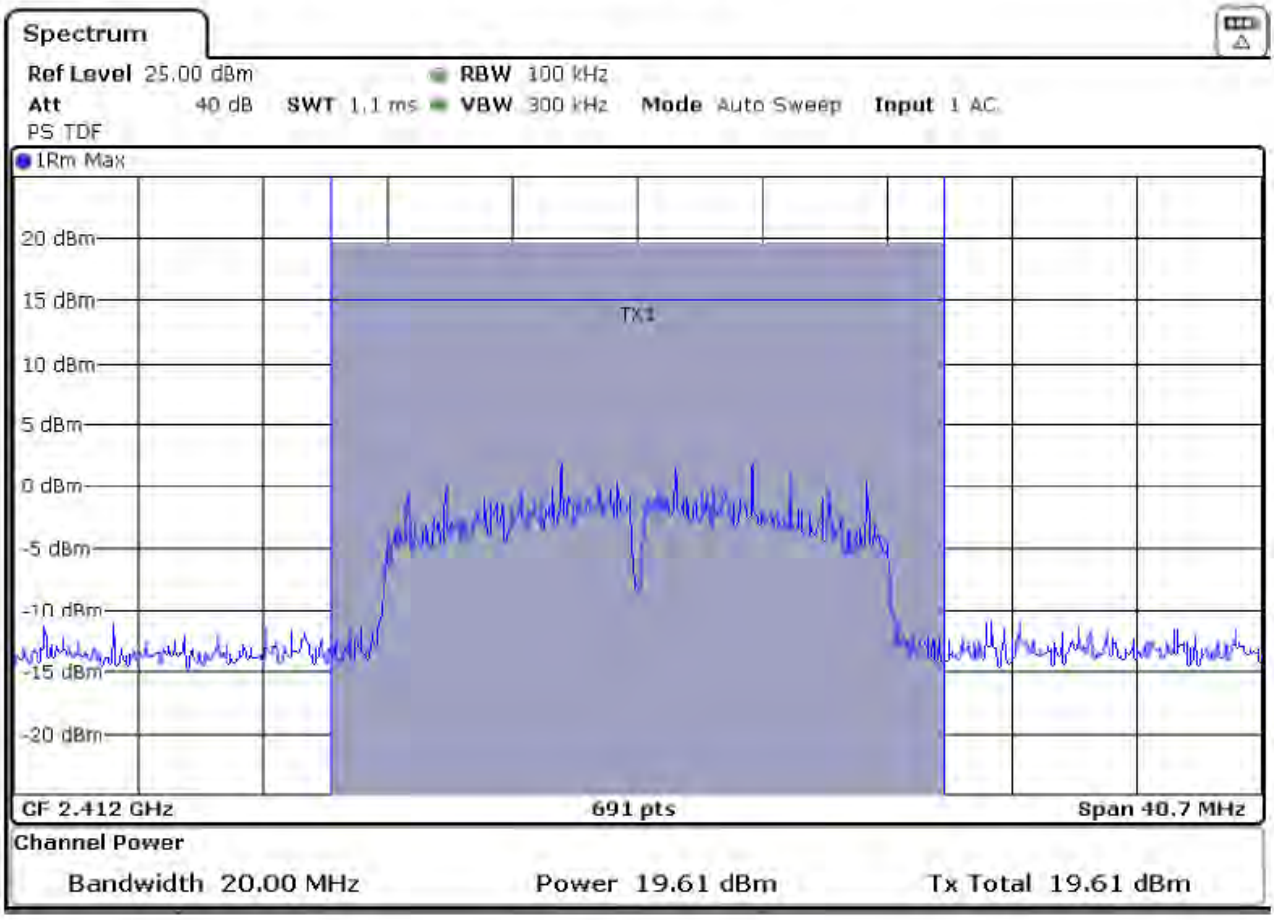
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.1, OFDM, BW = 20 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	19,61	10,39	30,00	**pass**

TESTED IN GERMANY

FCC 1

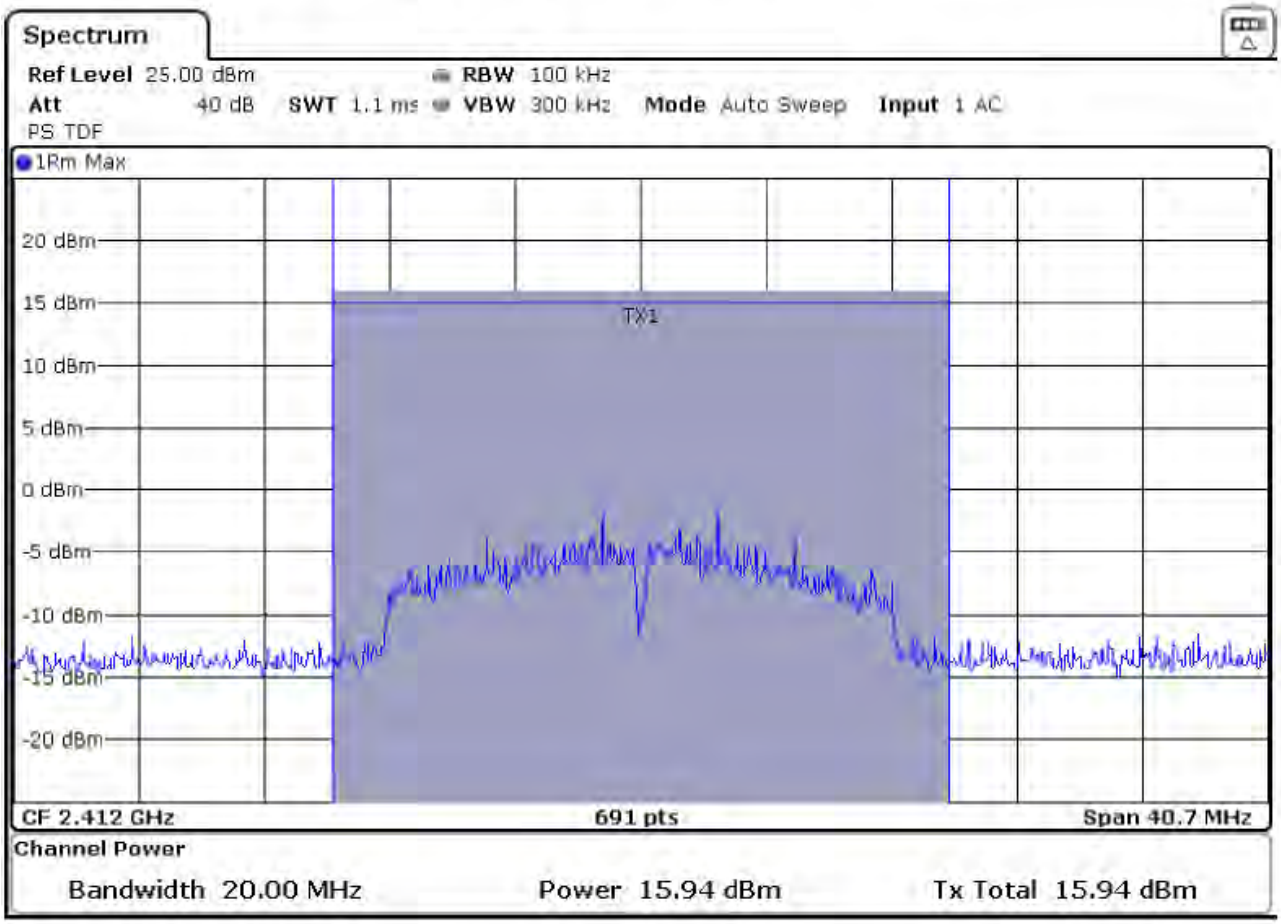
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.1, OFDM, BW = 20 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	15,94	14,06	30,00	**pass**

TESTED IN GERMANY

FCC 1

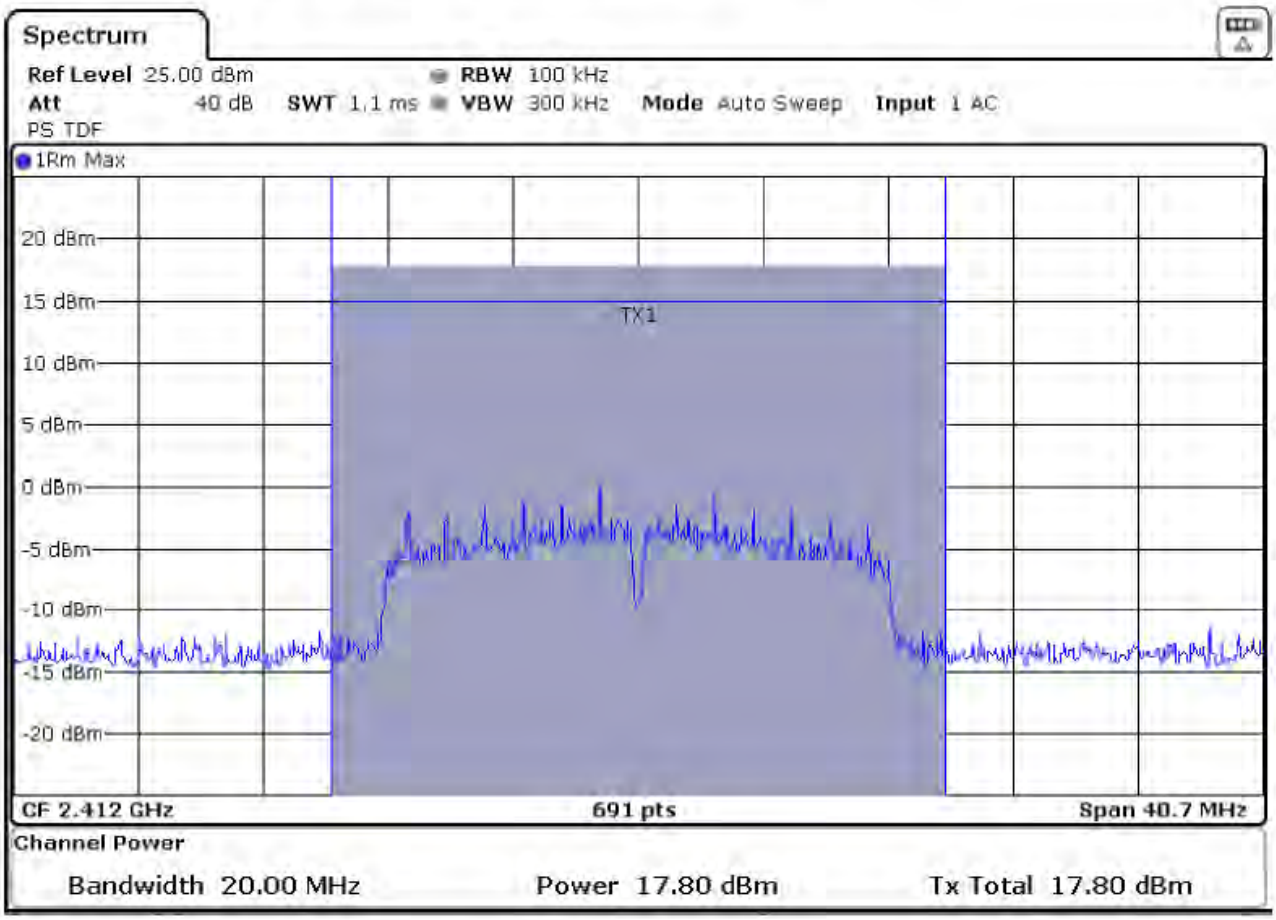
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.1, OFDM, BW = 20 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	17,80	12,20	30,00	**pass**

TESTED IN GERMANY

FCC 1

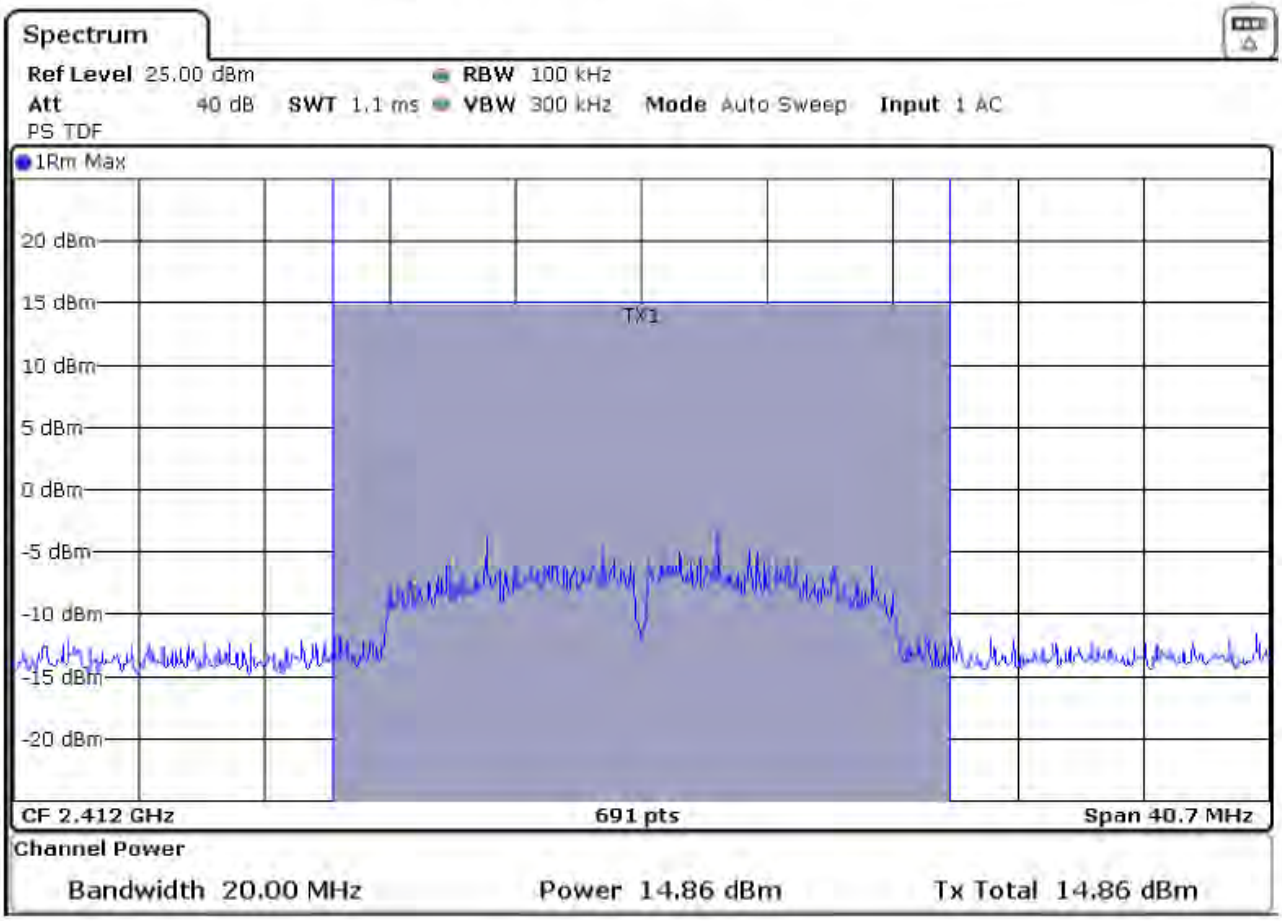
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.1, OFDM, BW = 20 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	14,86	5,14	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2412	17,60	30,00	pass
Position: X	H	2412	17,58	30,00	pass
Position: Y	V	2412	19,61	30,00	pass
Position: Y	H	2412	15,94	30,00	pass
Position: Z	V	2412	17,80	30,00	pass
Position: Z	H	2412	14,86	30,00	pass

Middle operating frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

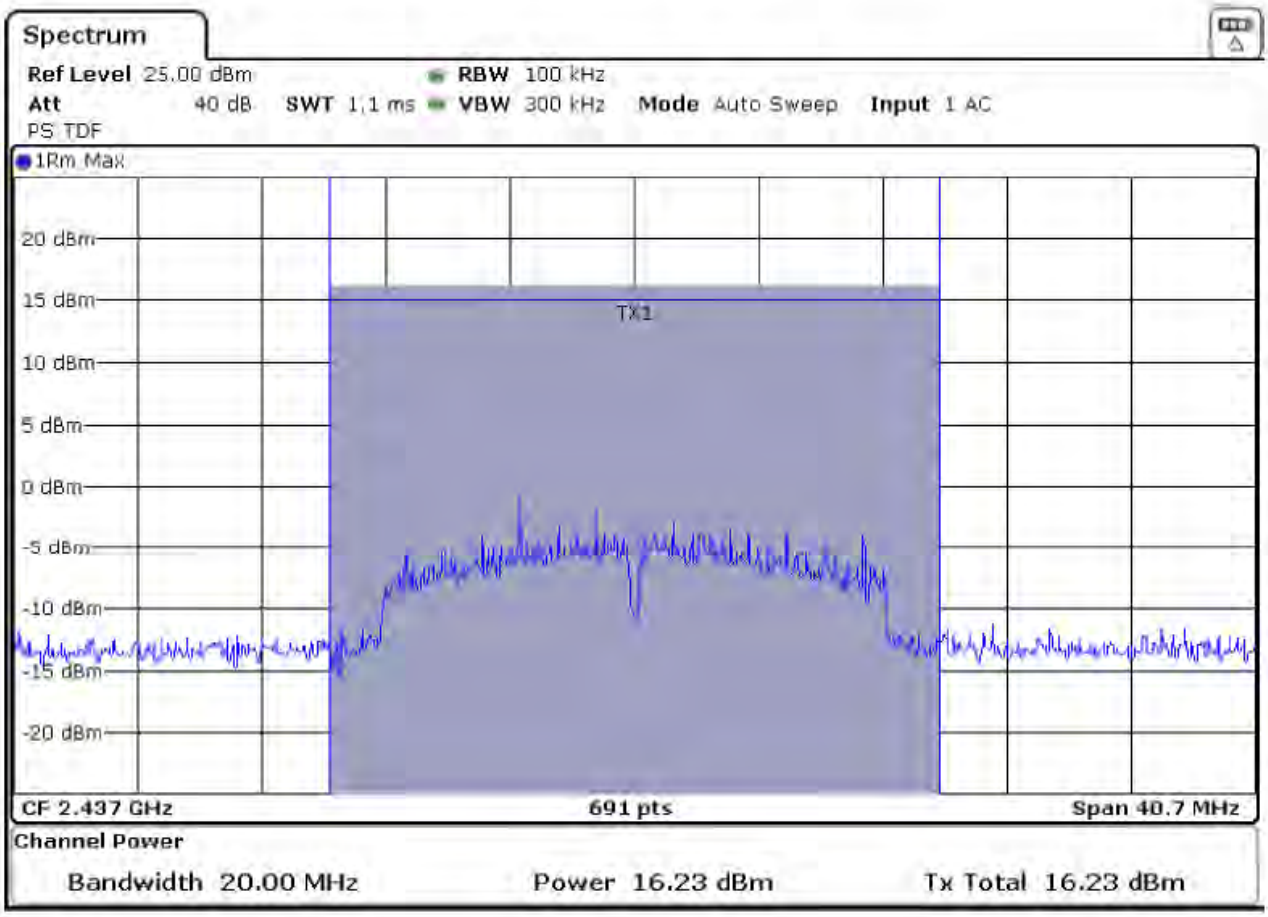
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.6, OFDM, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	16,23	13,77	30,00	**pass**

TESTED IN GERMANY

FCC 1

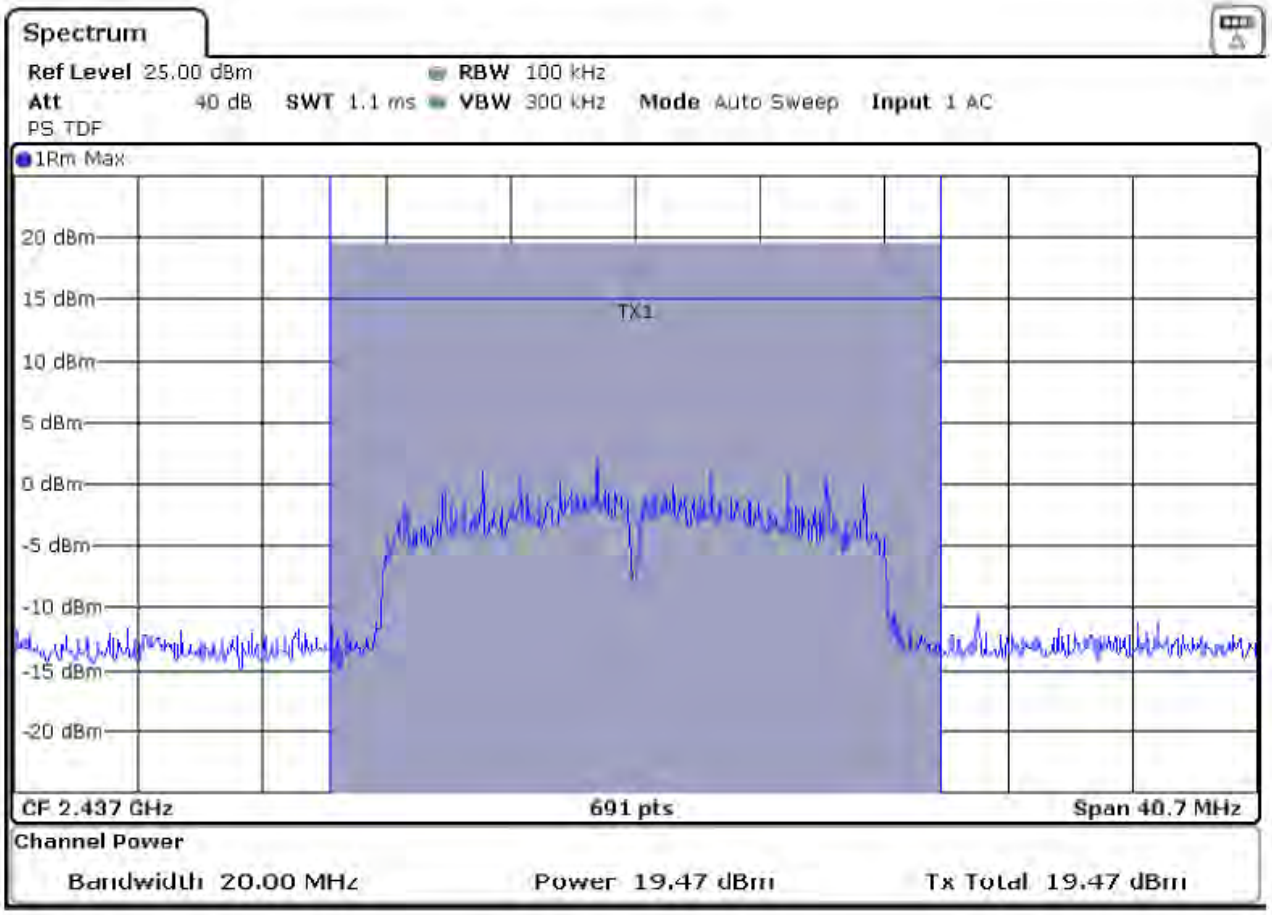
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.6, OFDM, BW = 20 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	19,47	10,53	30,00	**pass**

TESTED IN GERMANY

FCC 1

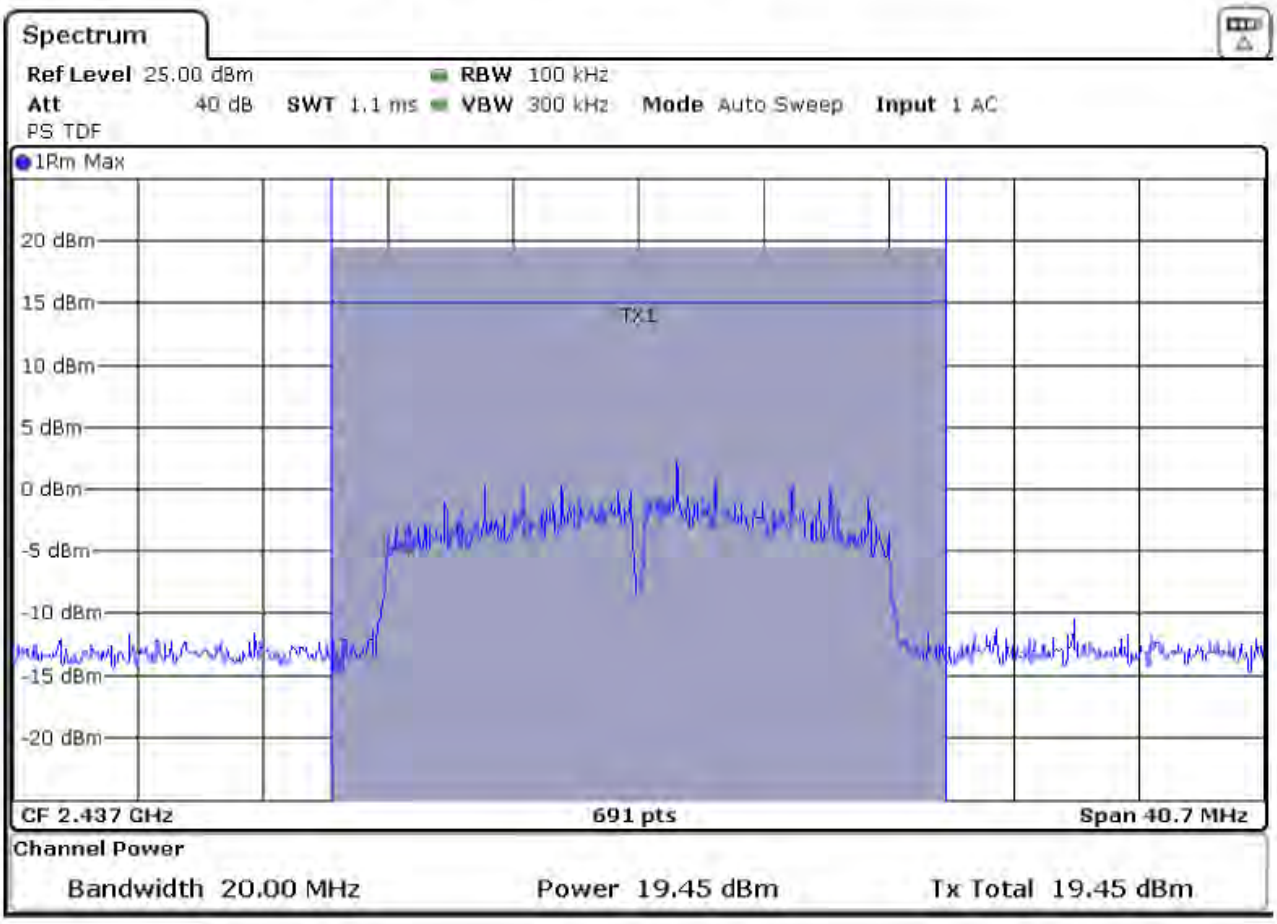
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.6, OFDM, BW = 20 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	19,45	10,55	30,00	**pass**

TESTED IN GERMANY

FCC 1

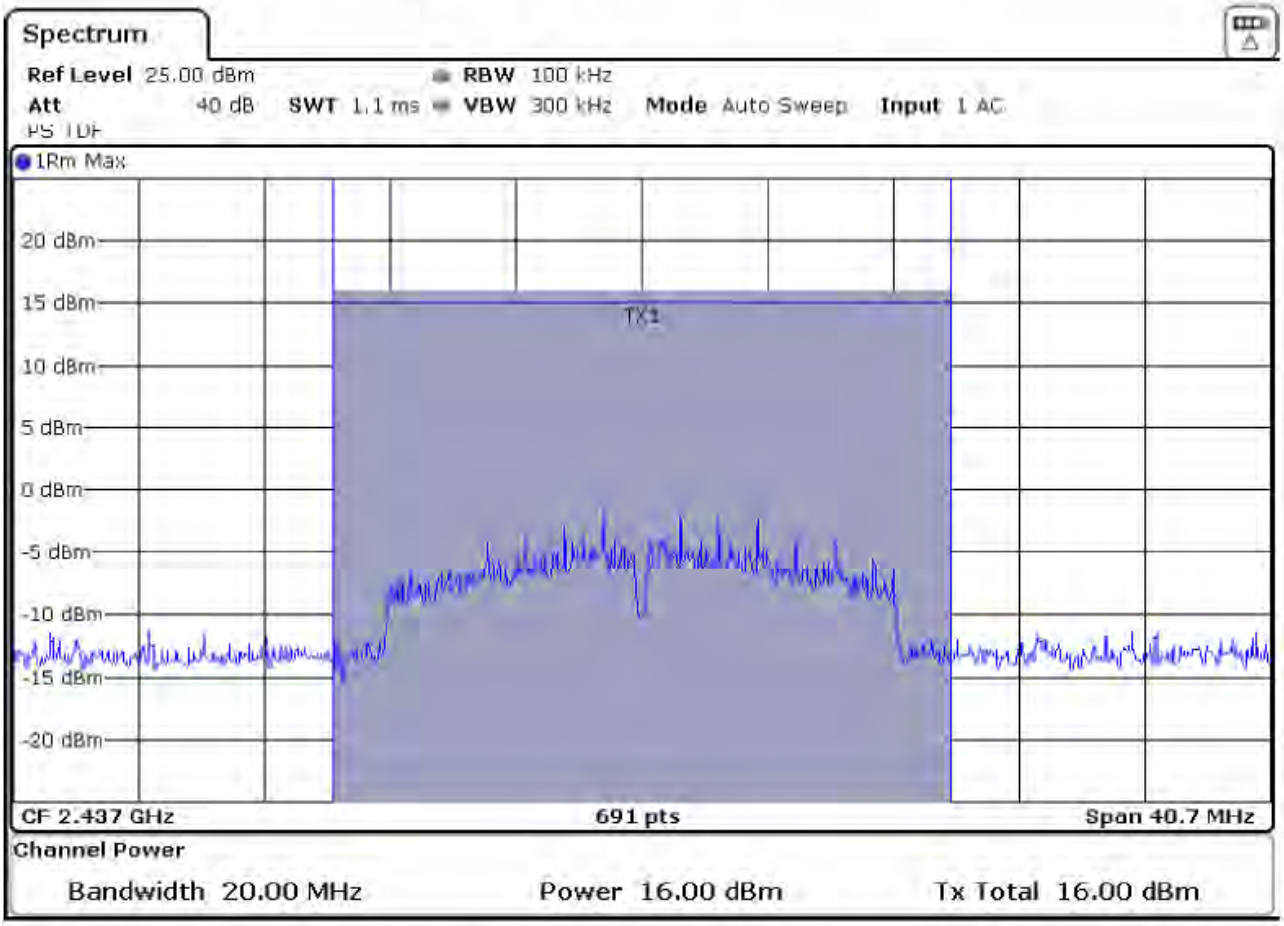
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.6, OFDM, BW = 20 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	16,00	14,00	30,00	**pass**

TESTED IN GERMANY

FCC 1

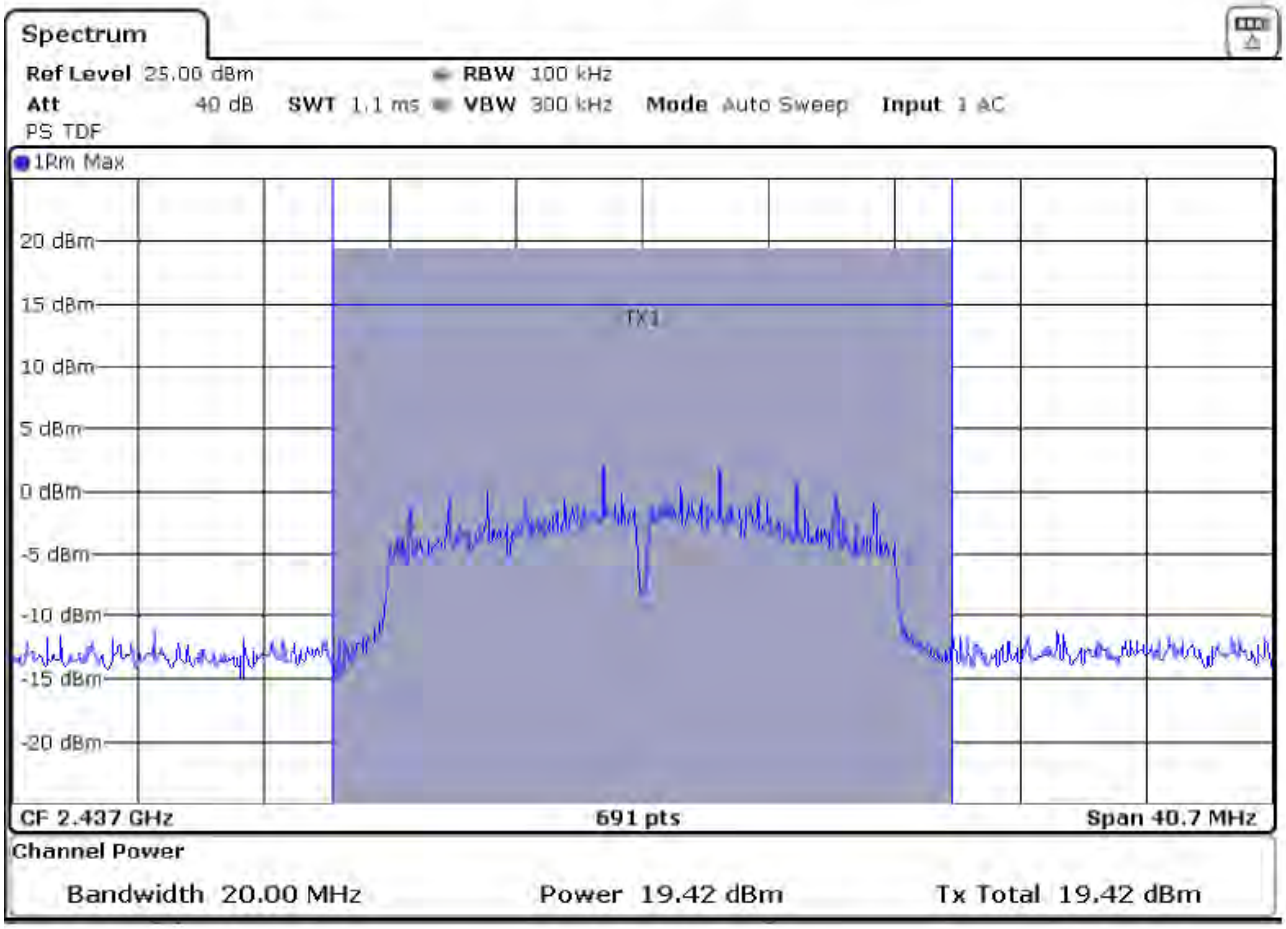
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.6, OFDM, BW = 20 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	19,42	10,58	30,00	**pass**

TESTED IN GERMANY

FCC 1

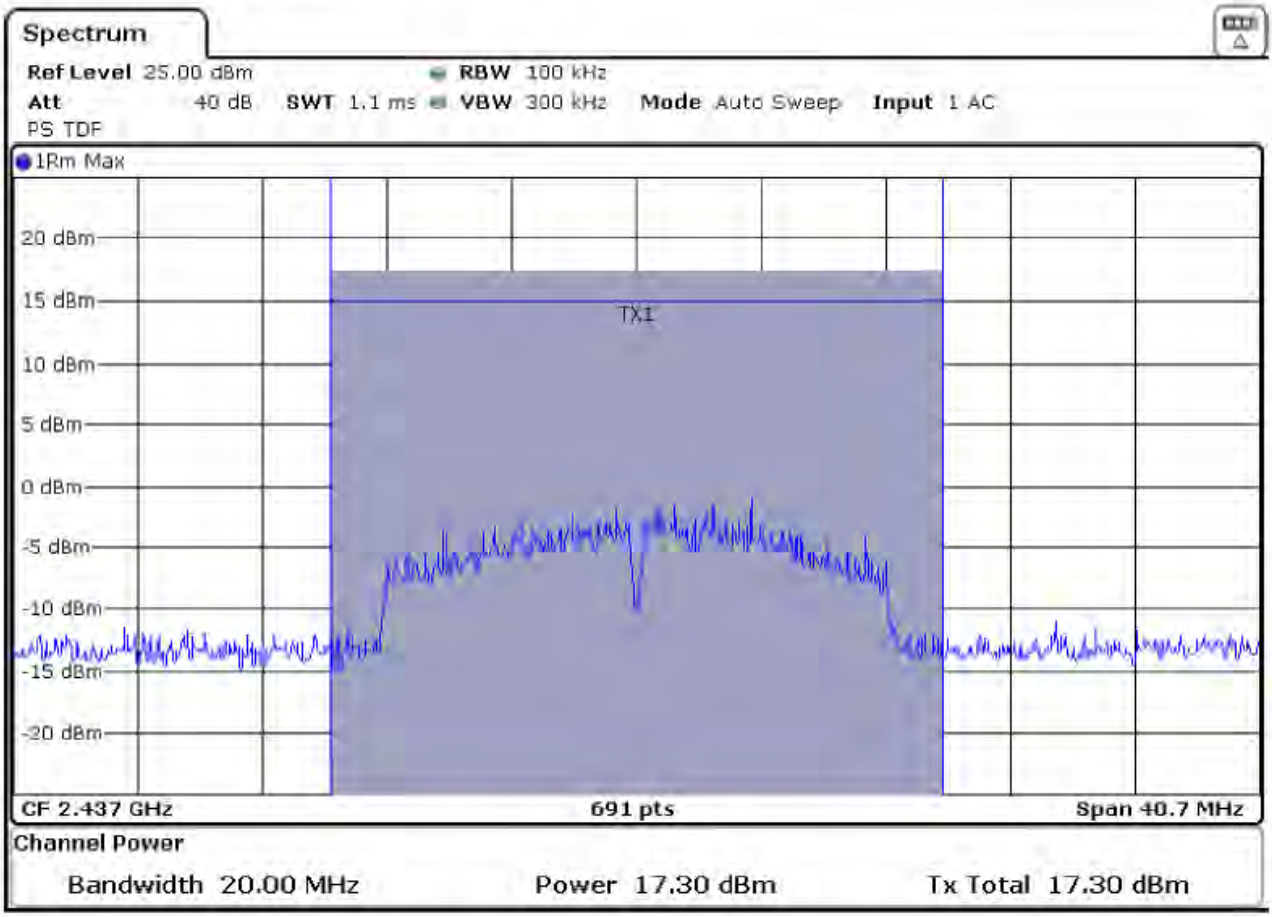
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.6, OFDM, BW = 20 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	17,30	12,70	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2437	16,23	30,00	pass
Position: X	H	2437	19,47	30,00	pass
Position: Y	V	2437	19,45	30,00	pass
Position: Y	H	2437	16,00	30,00	pass
Position: Z	V	2437	19,42	30,00	pass
Position: Z	H	2437	17,30	30,00	pass

Highest operating frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

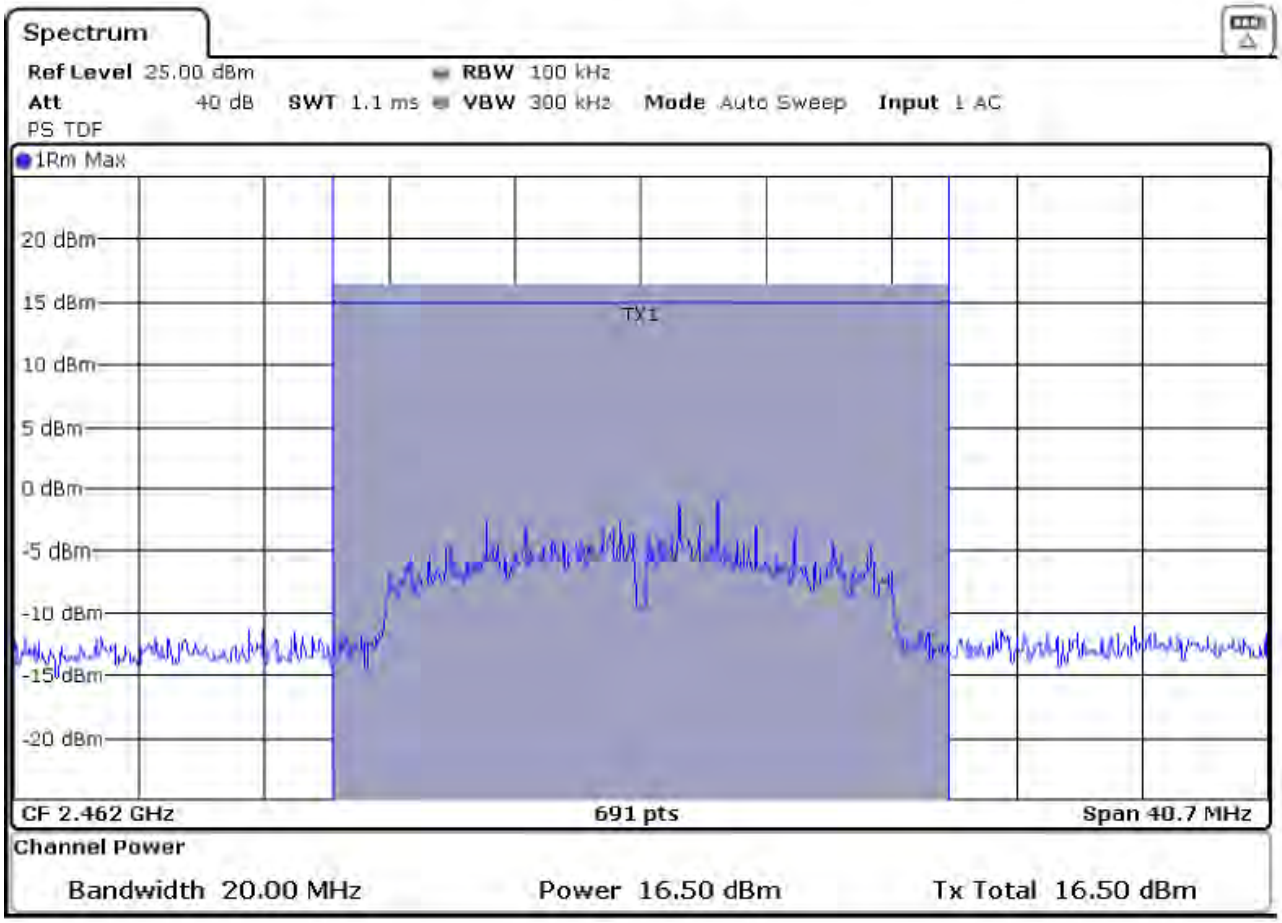
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.11, OFDM, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	16,50	13,50	30,00	**pass**

TESTED IN GERMANY

FCC 1

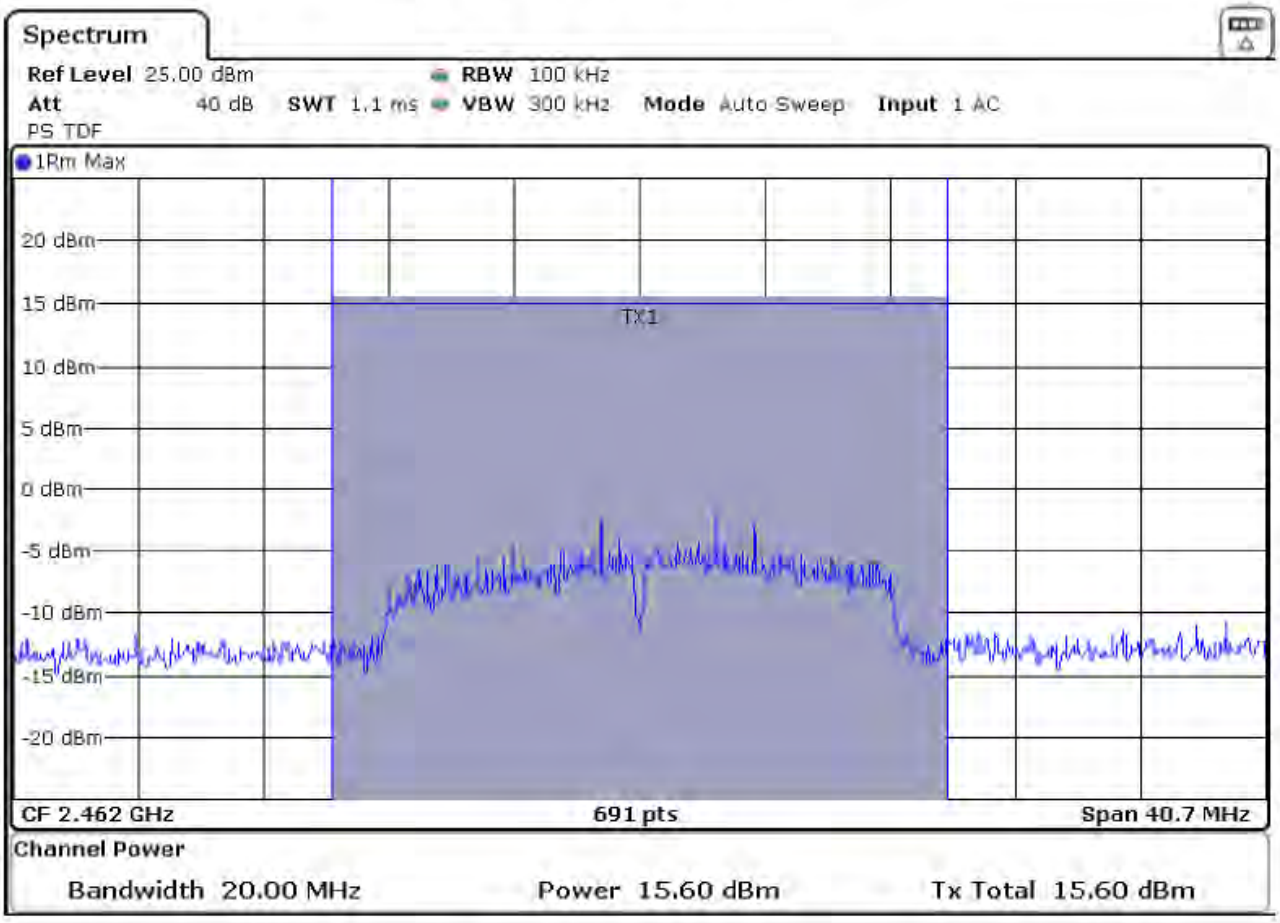
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH 11, OFDM, BW = 20 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	15,60	14,40	30,00	**pass**

TESTED IN GERMANY

FCC 1

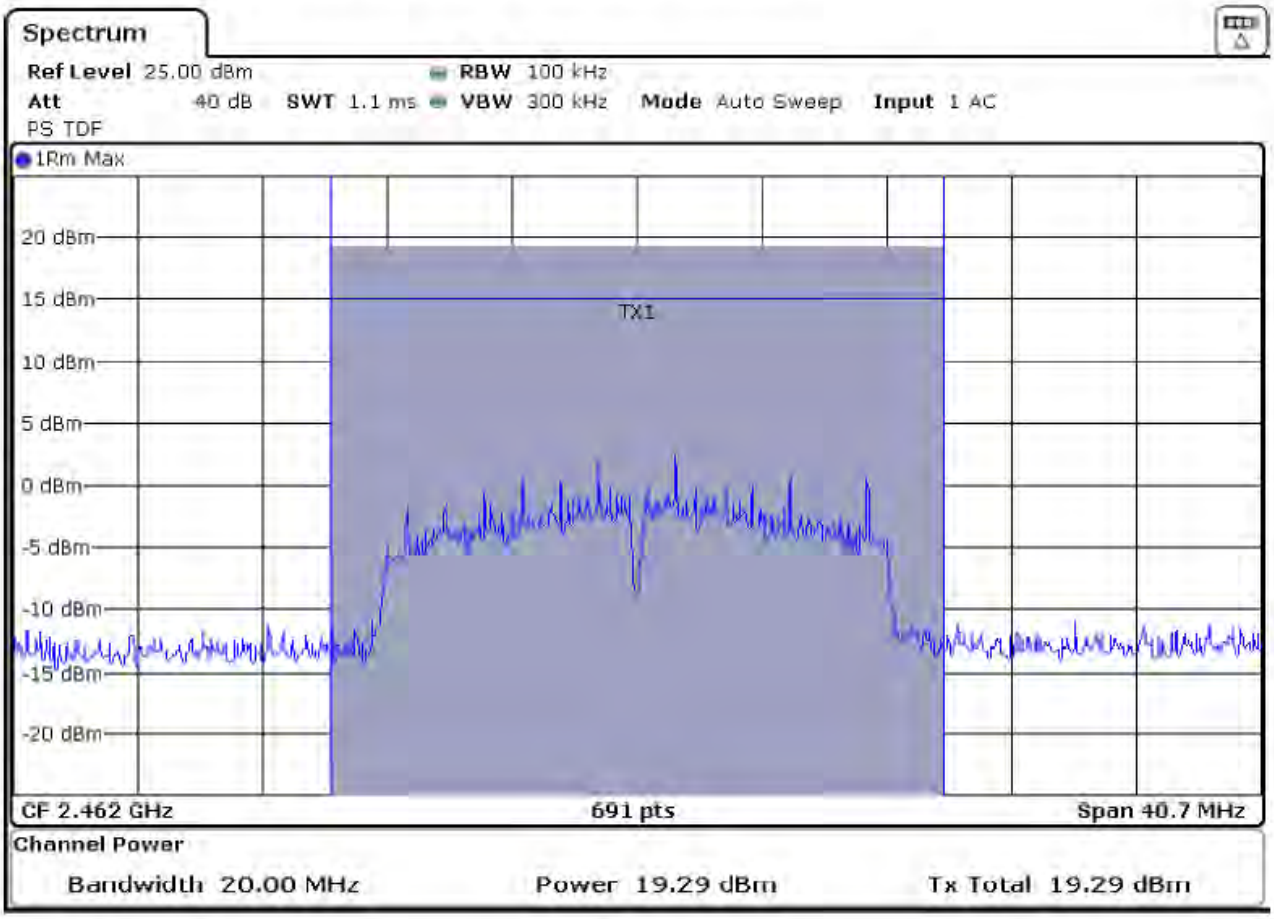
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.11, OFDM, BW = 20 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	19,29	10,71	30,00	**pass**

TESTED IN GERMANY

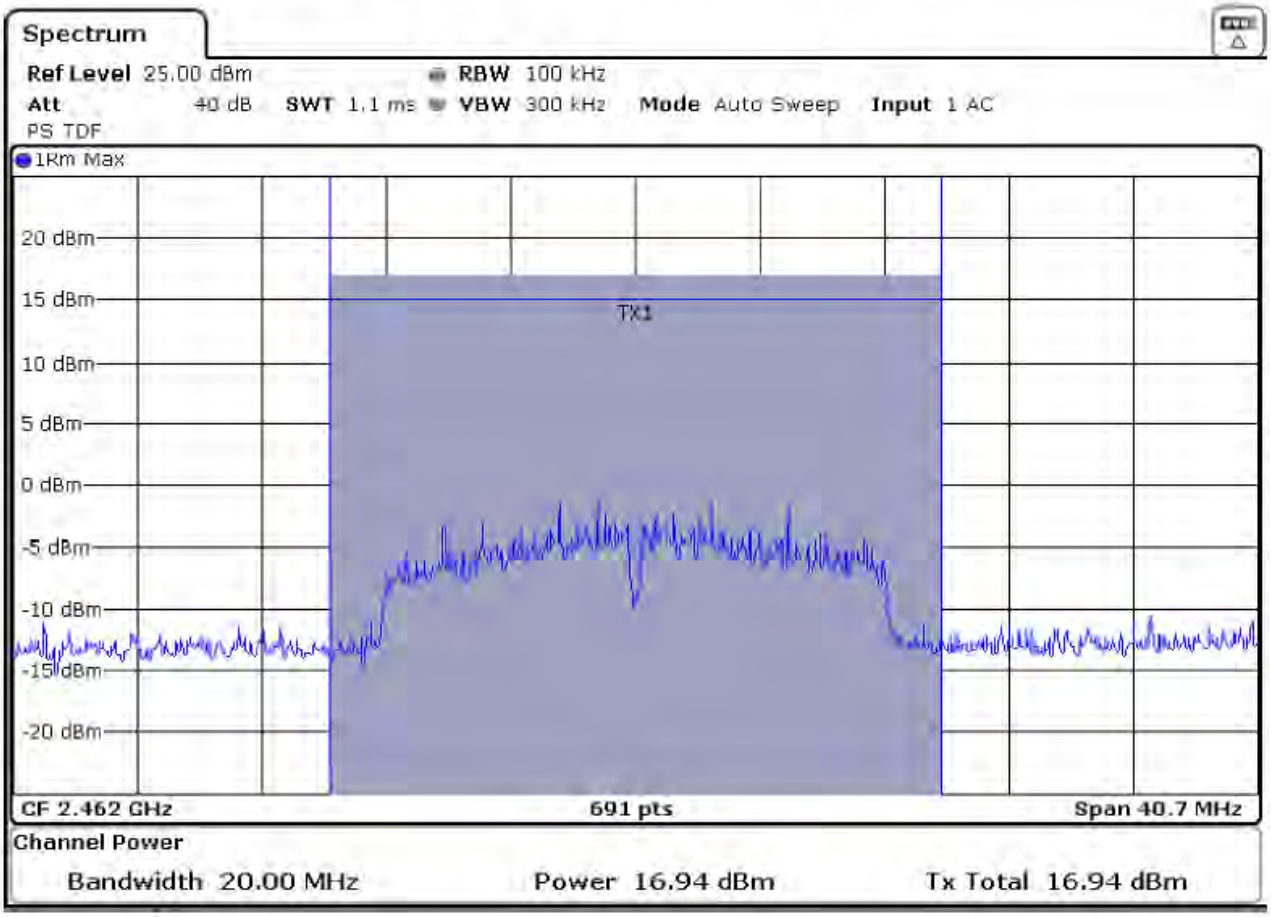
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.11, OFDM, BW = 20 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	16,94	13,06	30,00	**pass**

TESTED IN GERMANY

FCC 1

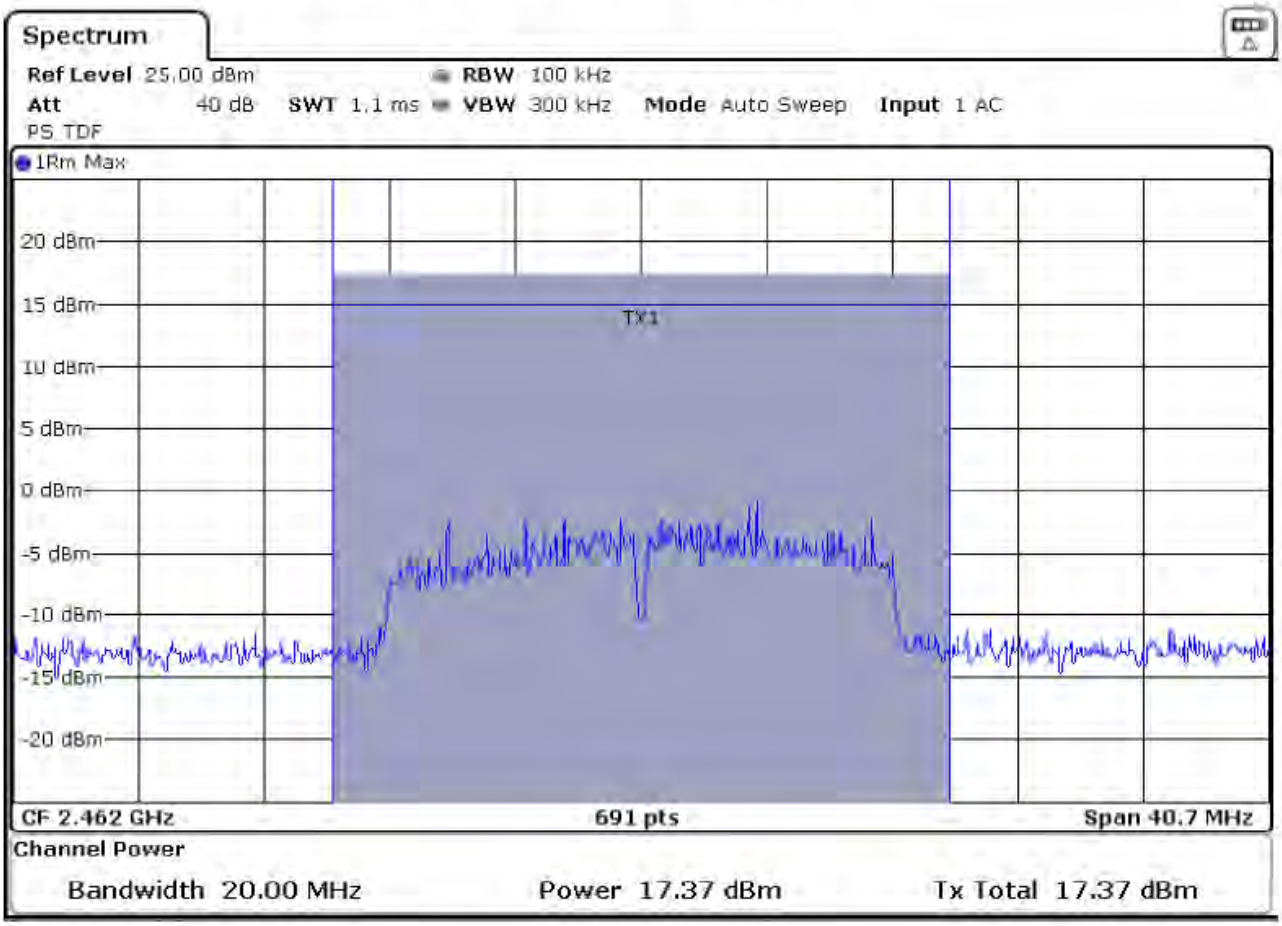
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.11, OFDM, BW = 20 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	17,37	12,63	30,00	**pass**

TESTED IN GERMANY

FCC 1

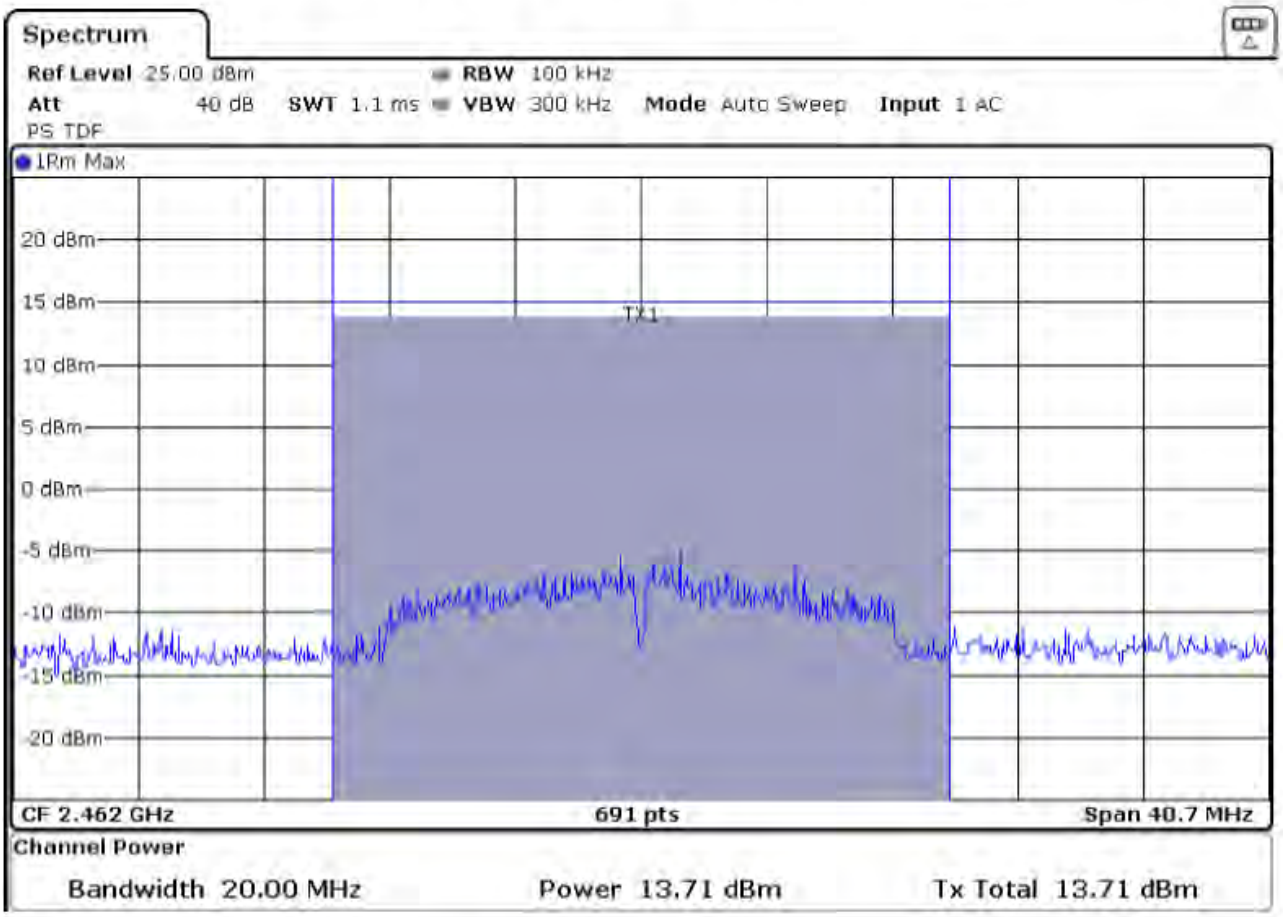
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH 11, OFDM, BW = 20 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	13,71	16,29	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2462	16,50	30,00	pass
Position: X	H	2462	15,60	30,00	pass
Position: Y	V	2462	19,29	30,00	pass
Position: Y	H	2462	16,94	30,00	pass
Position: Z	V	2462	17,37	30,00	pass
Position: Z	H	2462	13,71	30,00	pass

Maximum output power radiated measurement:
802.11g 20MHz / OFDM – MCS=0; 6 MBps / TX/RX1 / external Antenna typ 1

Channel	Frequency [MHz]	Output Power		Limit		Result
		[dBm]	[mW]	[dBm]	[mW]	
1	2412	19.61	91.41	30	1000	Pass
6	2437	19.47	88.51	30	1000	Pass
11	2462	19.29	84,92	30	1000	Pass

Lowest operating frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / TX/RX0 / ext. Antenna typ1

TESTED IN GERMANY

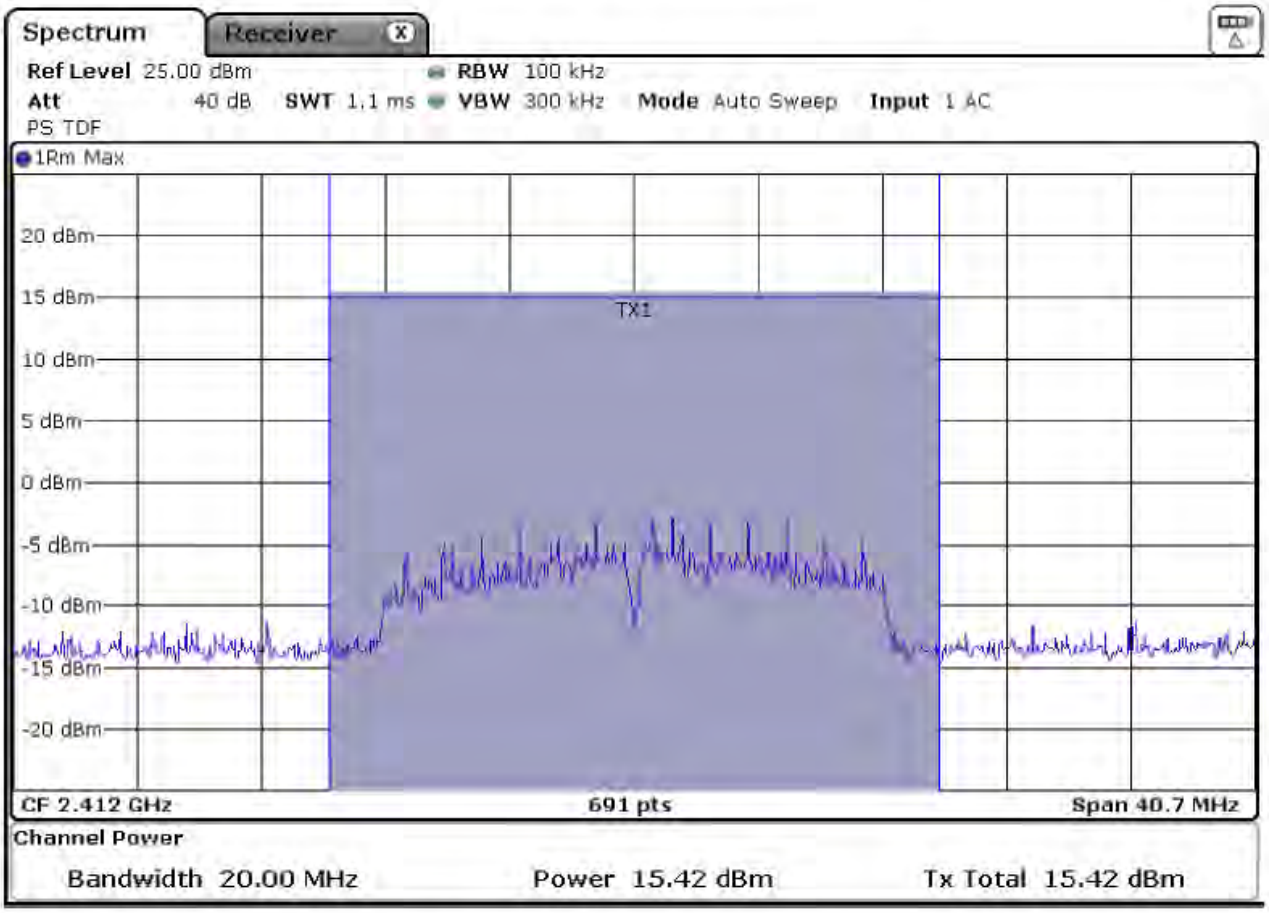
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.01, OFDM, BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	15,42	14,58	30,00	**pass**

TESTED IN GERMANY

FCC 1

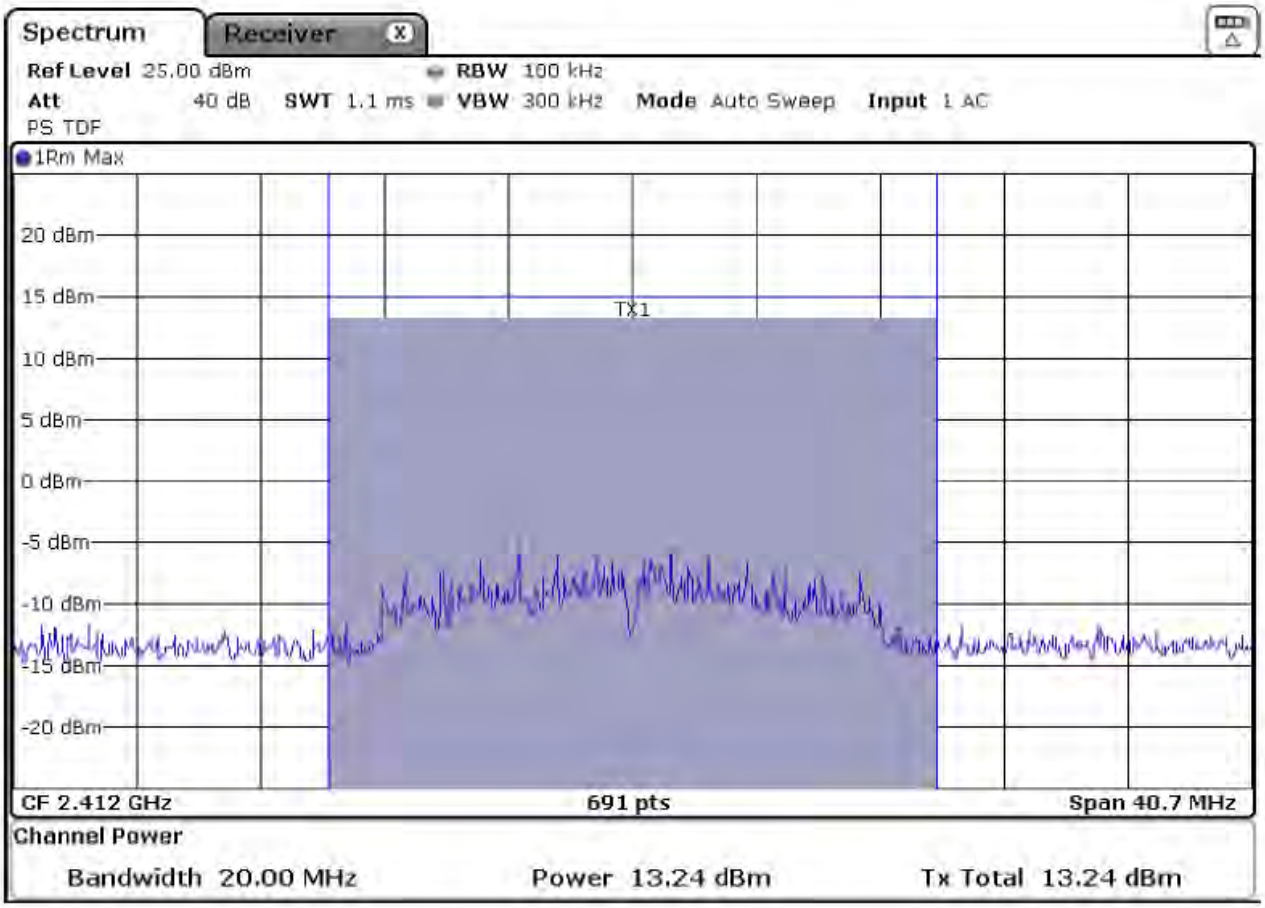
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.01, OFDM, BW = 20 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	13,24	16,76	30,00	**pass**

Middle operating frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / TX/RX0 / ext. Antenna typ 1

TESTED IN GERMANY

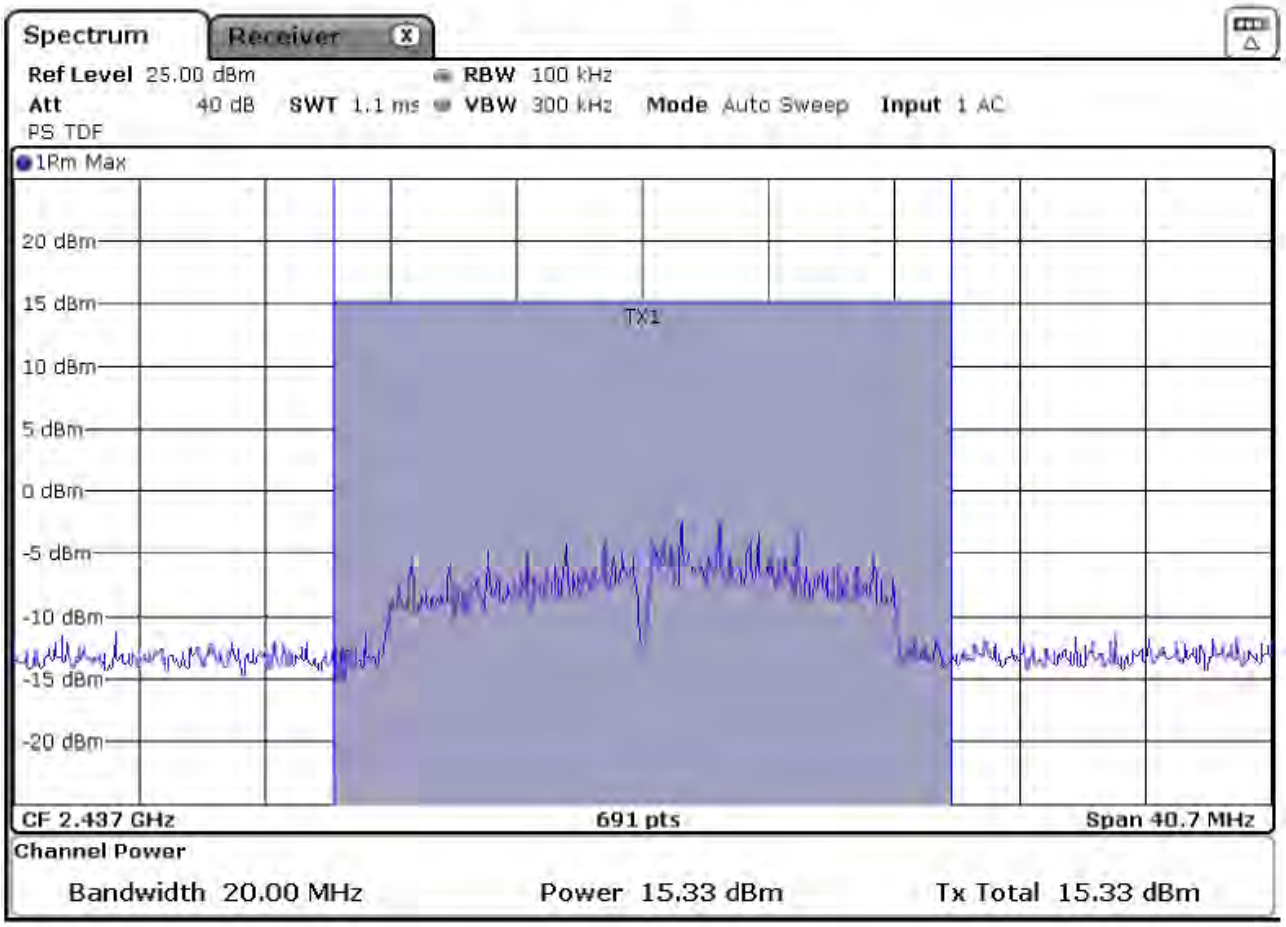
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.06, OFDM, BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	15,33	14,67	30,00	**pass**

TESTED IN GERMANY

FCC 1

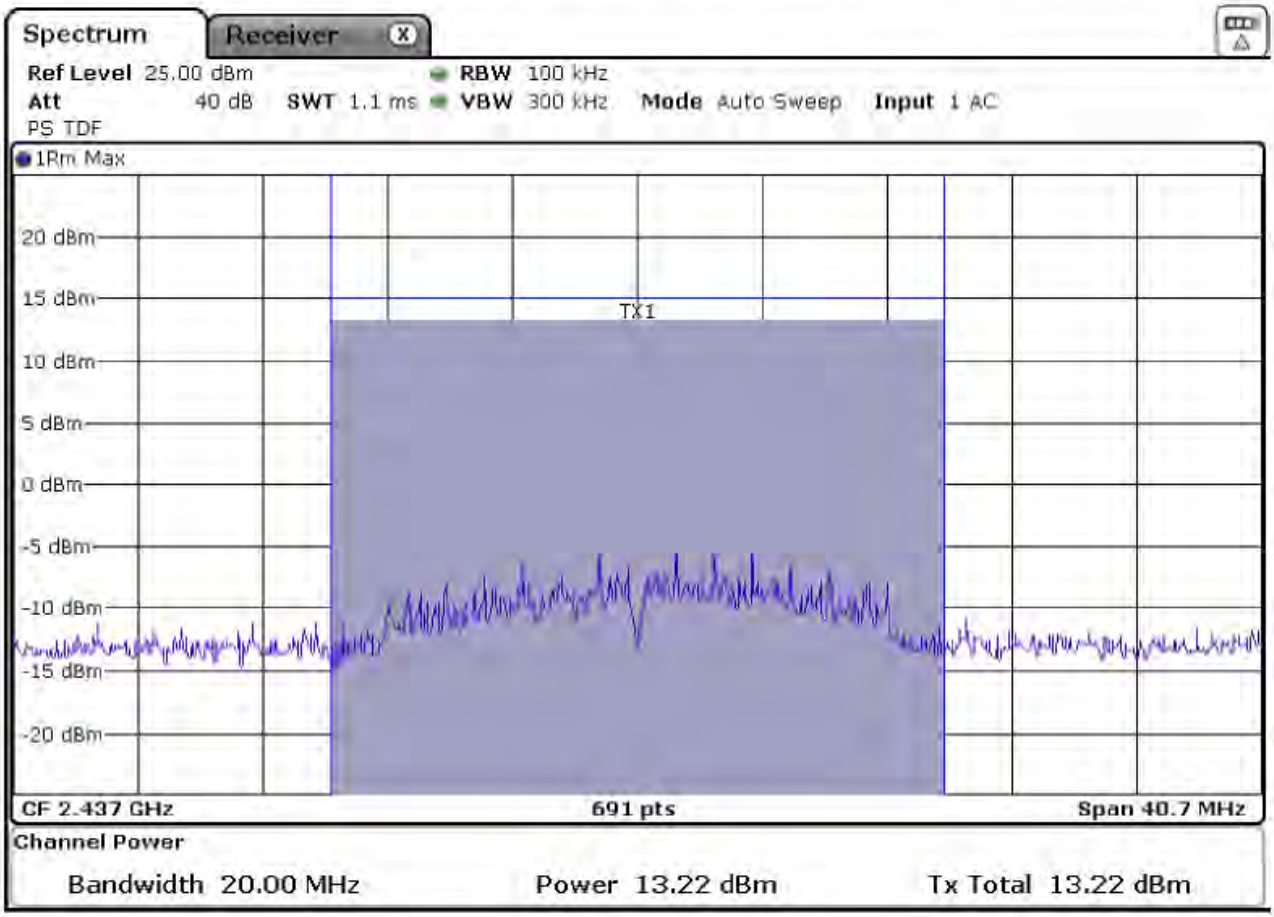
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.06, OFDM, BW = 20 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	13,22	16,78	30,00	**pass**

Highest operating frequency - 802.11g 20MHz / OFDM – MCS=0; 6 MBps / TX/RX0 / ext. Antenna typ 1

TESTED IN GERMANY

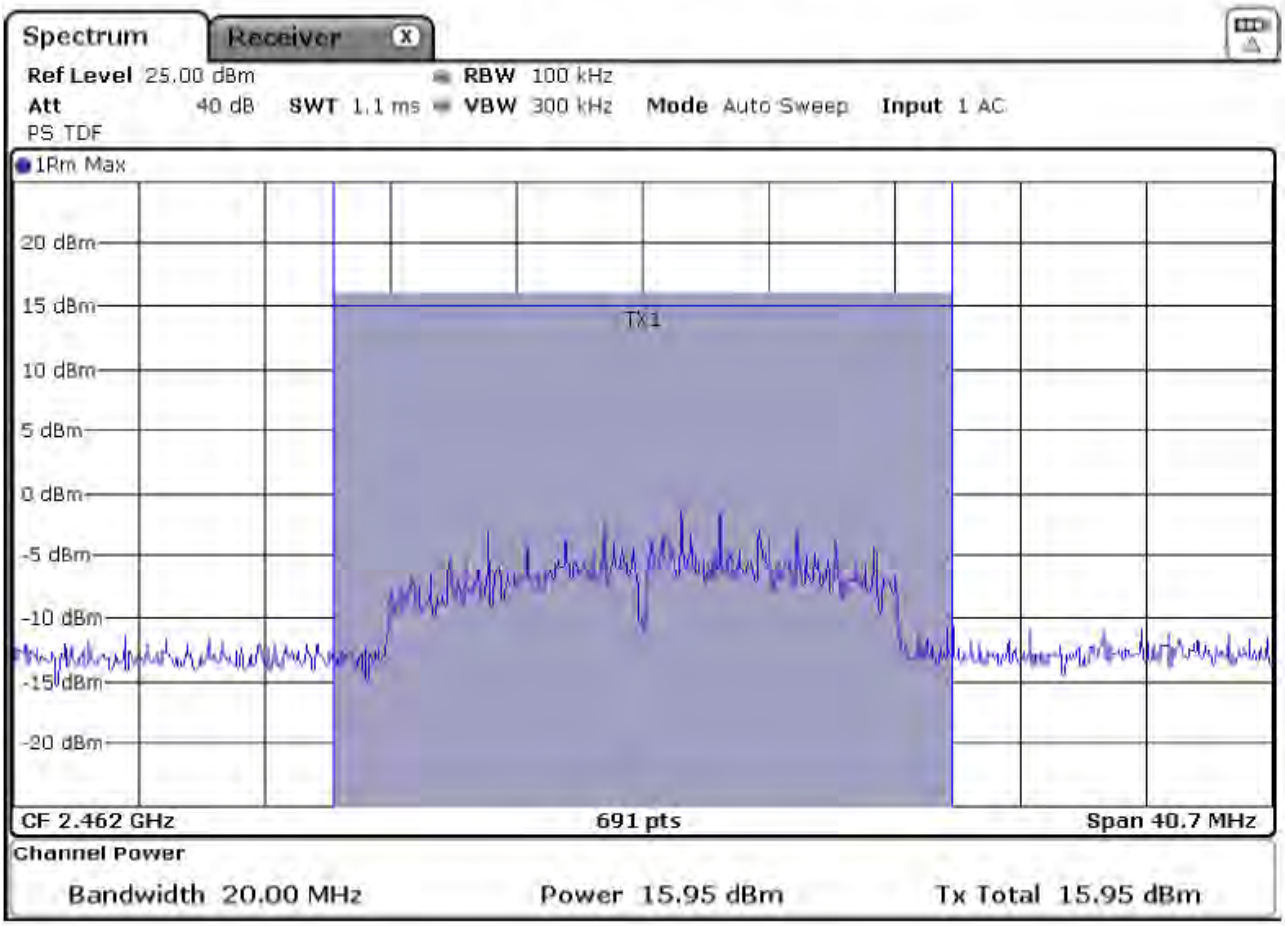
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.11, OFDM, BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	15,95	14,05	30,00	**pass**

TESTED IN GERMANY

FCC 1

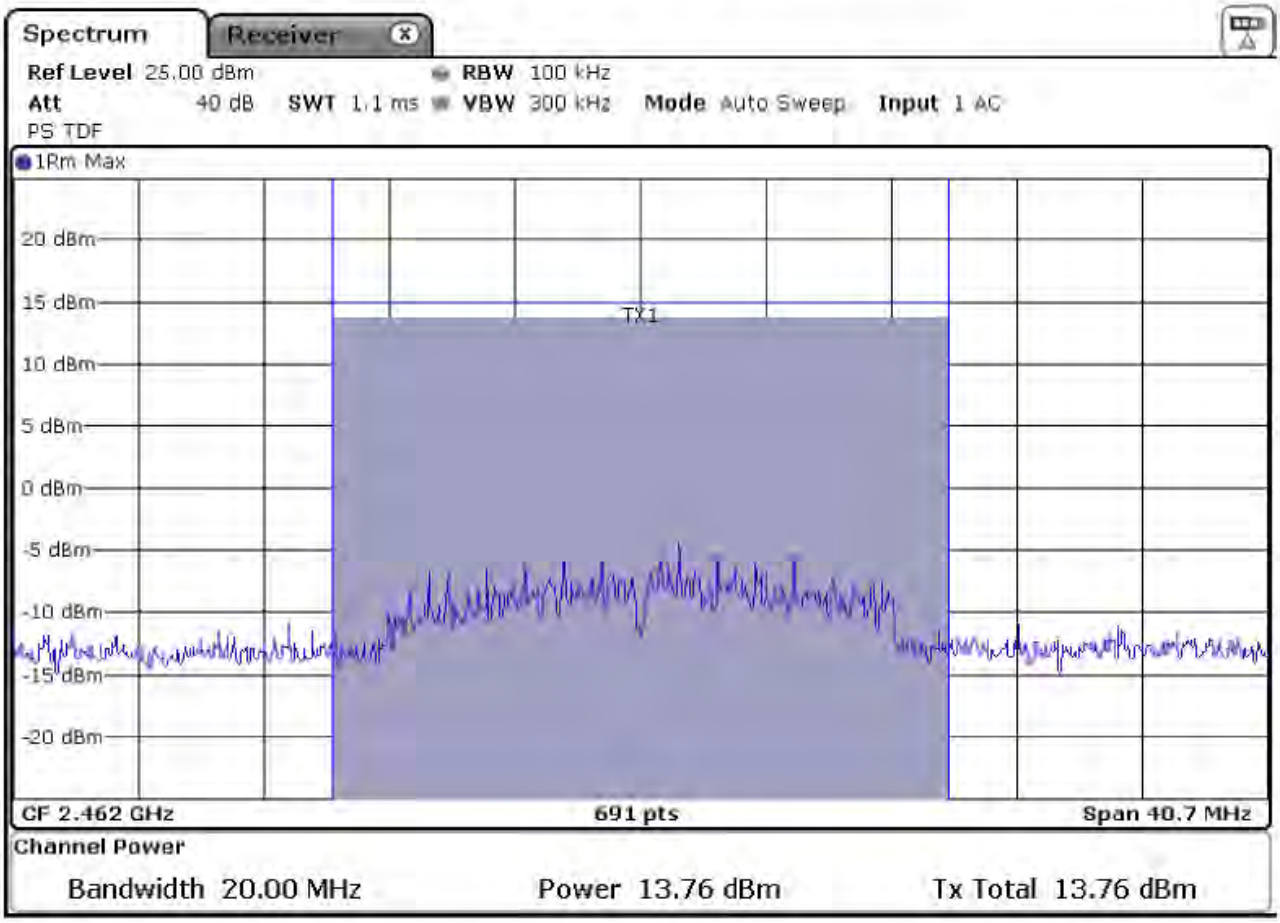
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11g, CH.11, OFDM, BW = 20 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	13,76	16,24	30,00	**pass**

Maximum output power radiated measurement: 802.11g 20MHz / OFDM – MCS=0; 6 MBps / TX/RX0 / external Antenna typ 1						
Channel	Frequency [MHz]	Output Power		Limit		Result
		[dBm]	[mW]	[dBm]	[mW]	
1	2412	15.95	39.36	30	1000	Pass
6	2437	15.33	34.12	30	1000	Pass
11	2462	15.42	34.83	30	1000	Pass

Maximum output power conducted measurement: 802.11g 20MHz / OFDM – MCS=0; 6 MBps / TX/RX0 + TX/RX1 / external Antenna typ 1								
Channel	Frequency [MHz]	Output TX/RX0 [mW]	Output TX/RX1 [mW]	Total Output Power		Limit		Result
				[dBm]	[mW]	[dBm]	[mW]	
1	2412	39.36	91.41	21.17	130.77	30	1000	Pass
6	2437	34.12	88.51	20.89	122.63	30	1000	Pass
11	2462	34.83	84,92	20.78	119,75	30	1000	Pass
According to KDB 662911 D01								

Lowest operating frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

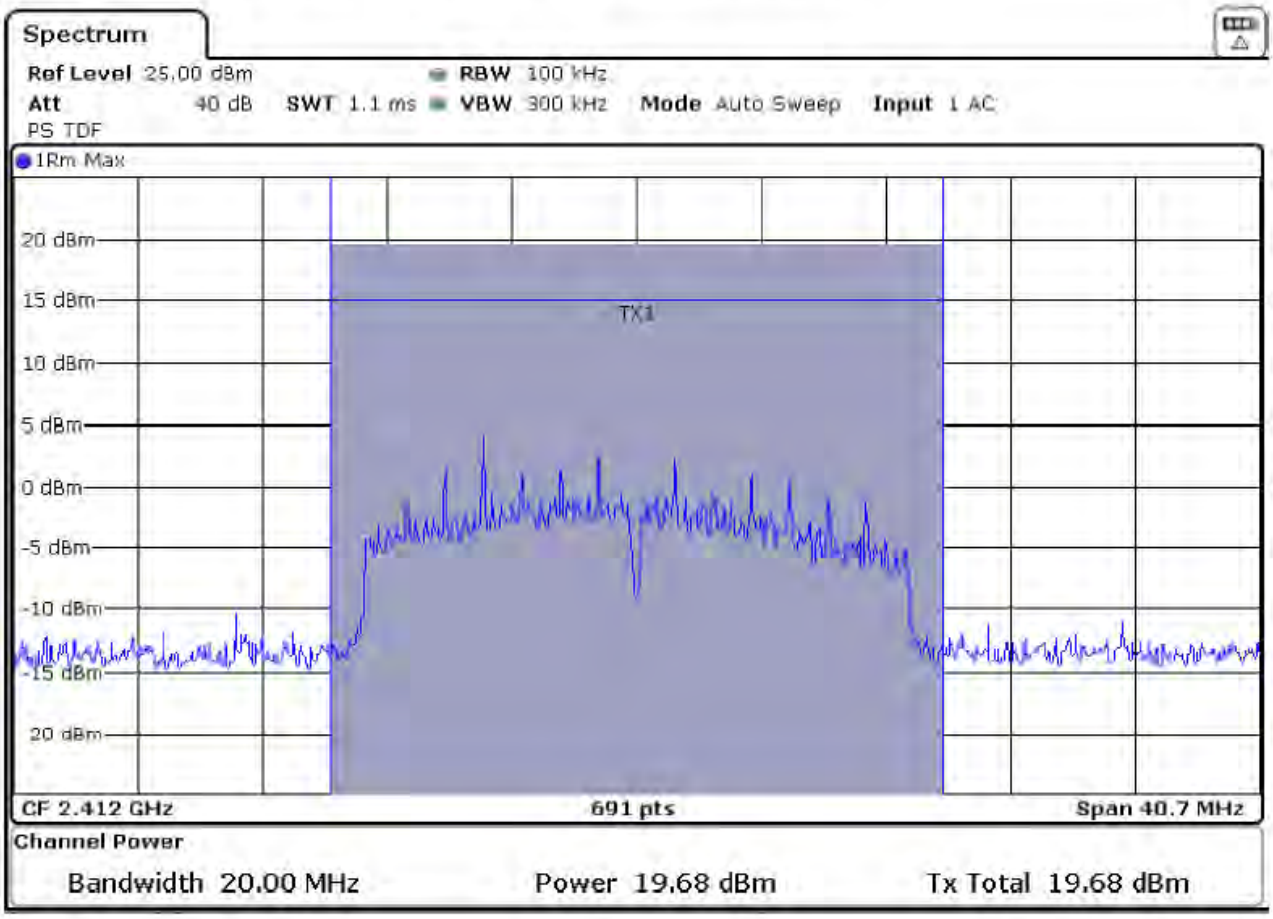
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH 1, HT: Greenfield, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	19,68	10,32	30,00	**pass**

TESTED IN GERMANY

FCC 1

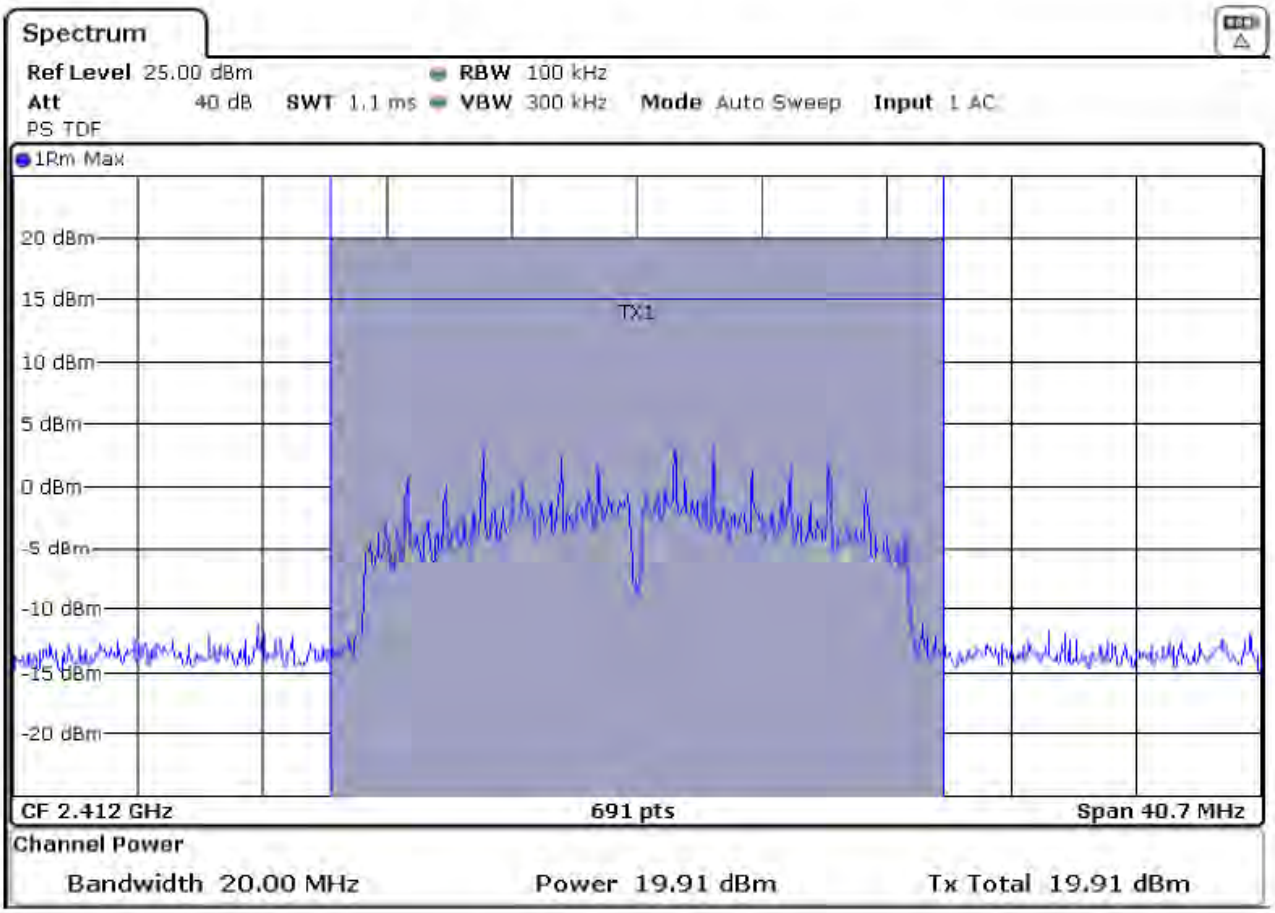
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.1, HT: Greenfield, BW = 20 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	19,91	10,09	30,00	**pass**

TESTED IN GERMANY

FCC 1

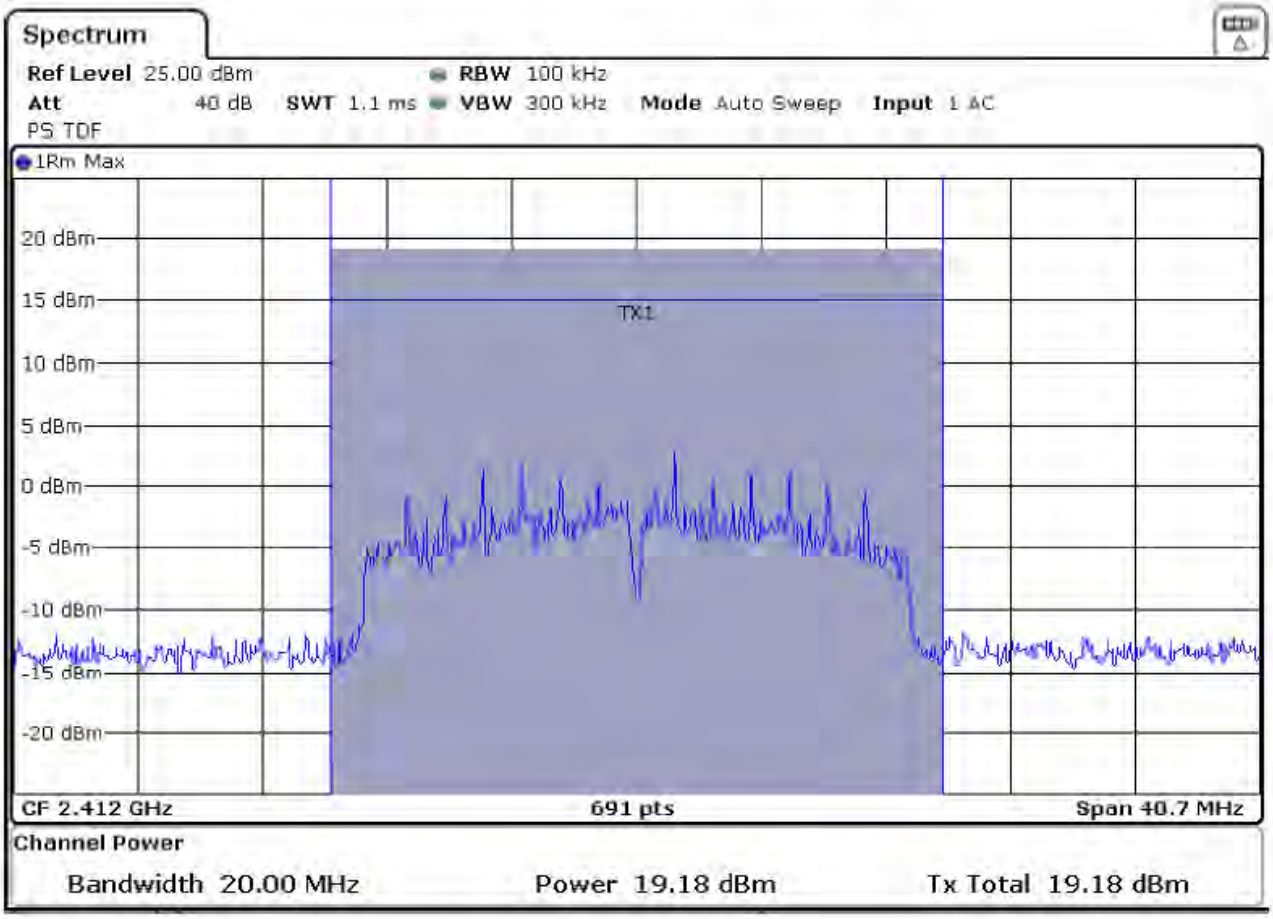
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.1, HT: Greenfield, BW = 20 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	19,18	10,82	30,00	**pass**

TESTED IN GERMANY

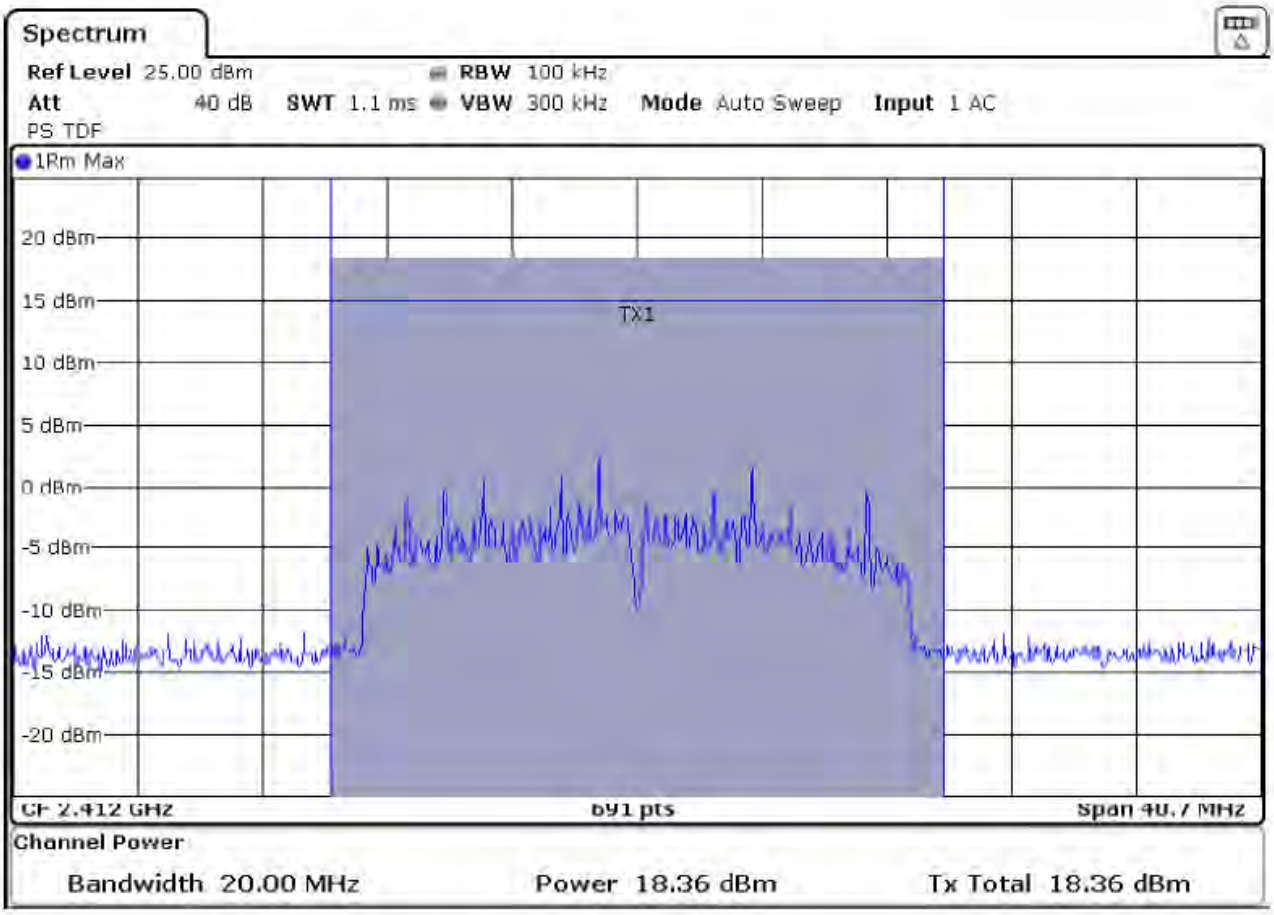
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.1, HT: Greenfield, BW = 20 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	18,36	11,64	30,00	**pass**

TESTED IN GERMANY

FCC 1

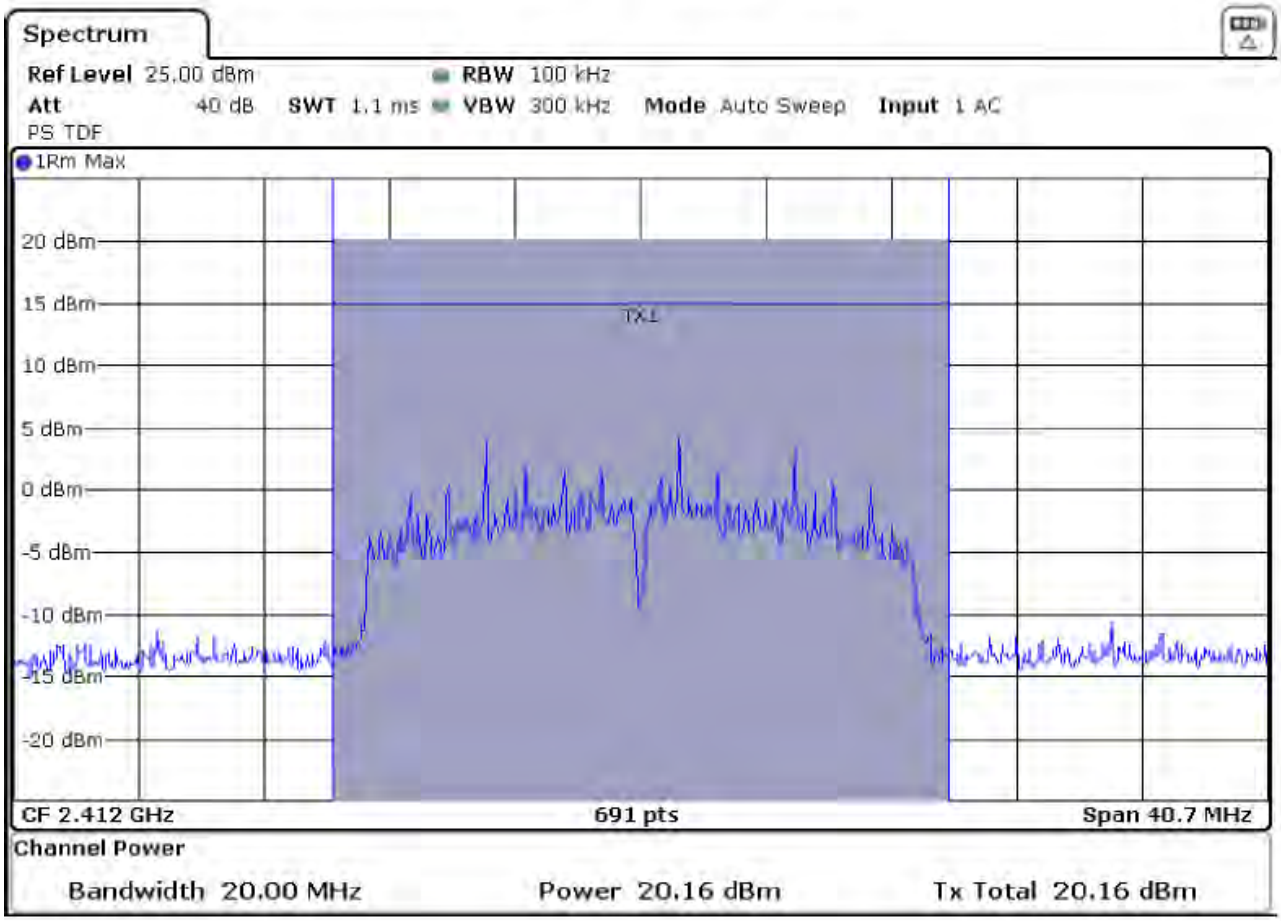
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.1, HT: Greenfield, BW = 20 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	20,16	9,84	30,00	**pass**

TESTED IN GERMANY

FCC 1

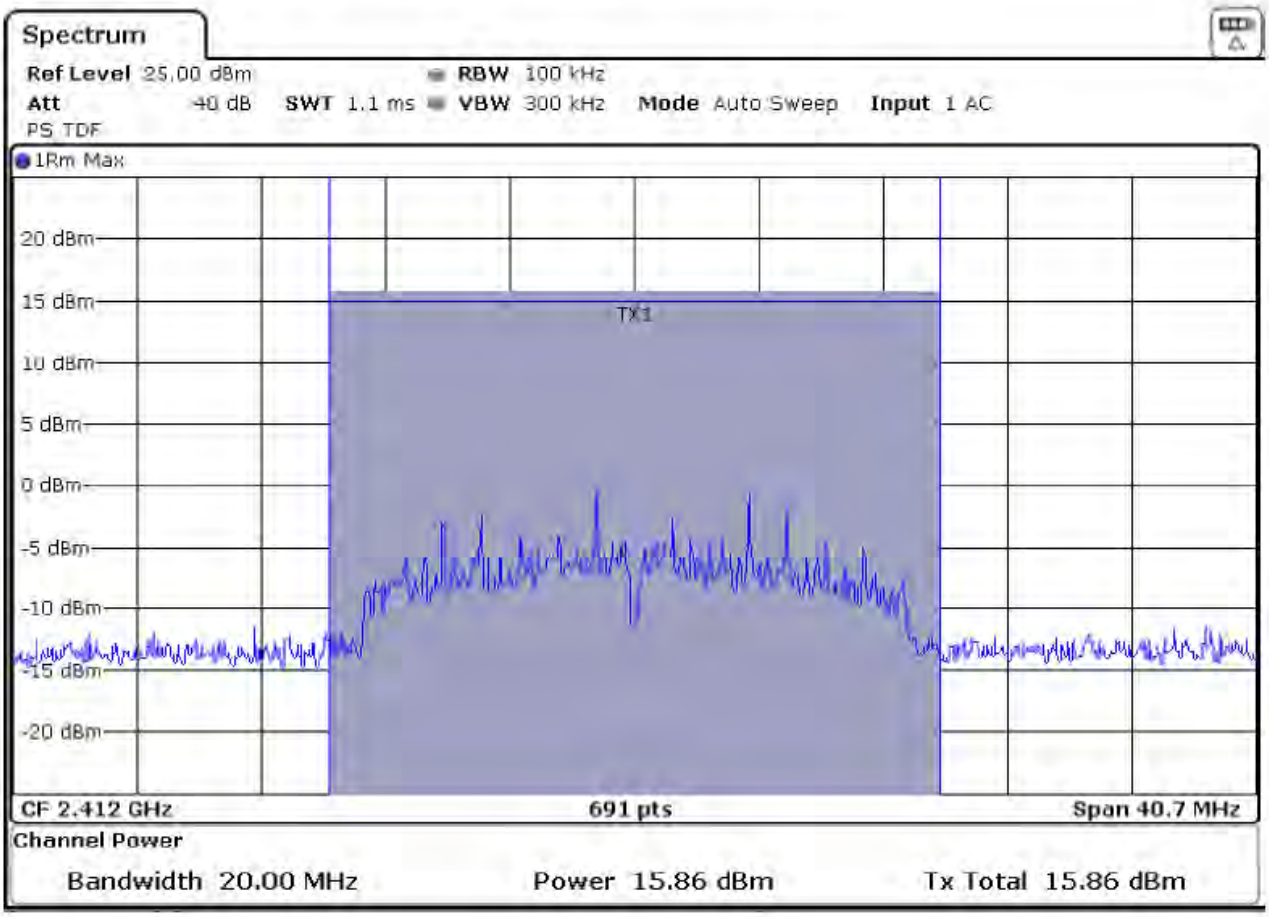
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.1, HT: Greenfield, BW = 20 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	15,86	14,14	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2412	19,68	30,00	pass
Position: X	H	2412	19,91	30,00	pass
Position: Y	V	2412	19,18	30,00	pass
Position: Y	H	2412	18,36	30,00	pass
Position: Z	V	2412	20,16	30,00	pass
Position: Z	H	2412	15,86	30,00	pass

Middle operating frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

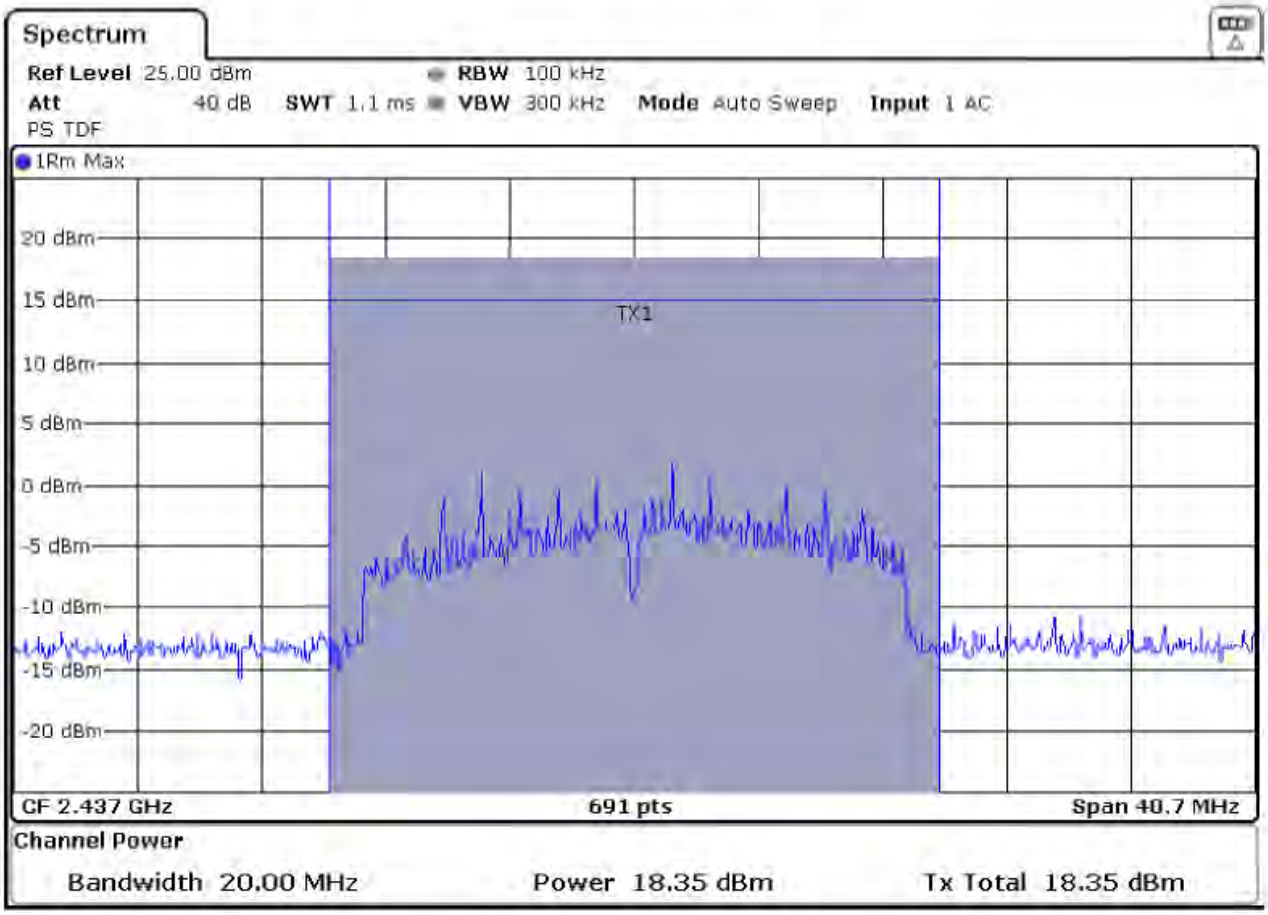
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	18,35	11,65	30,00	**pass**

TESTED IN GERMANY

FCC 1

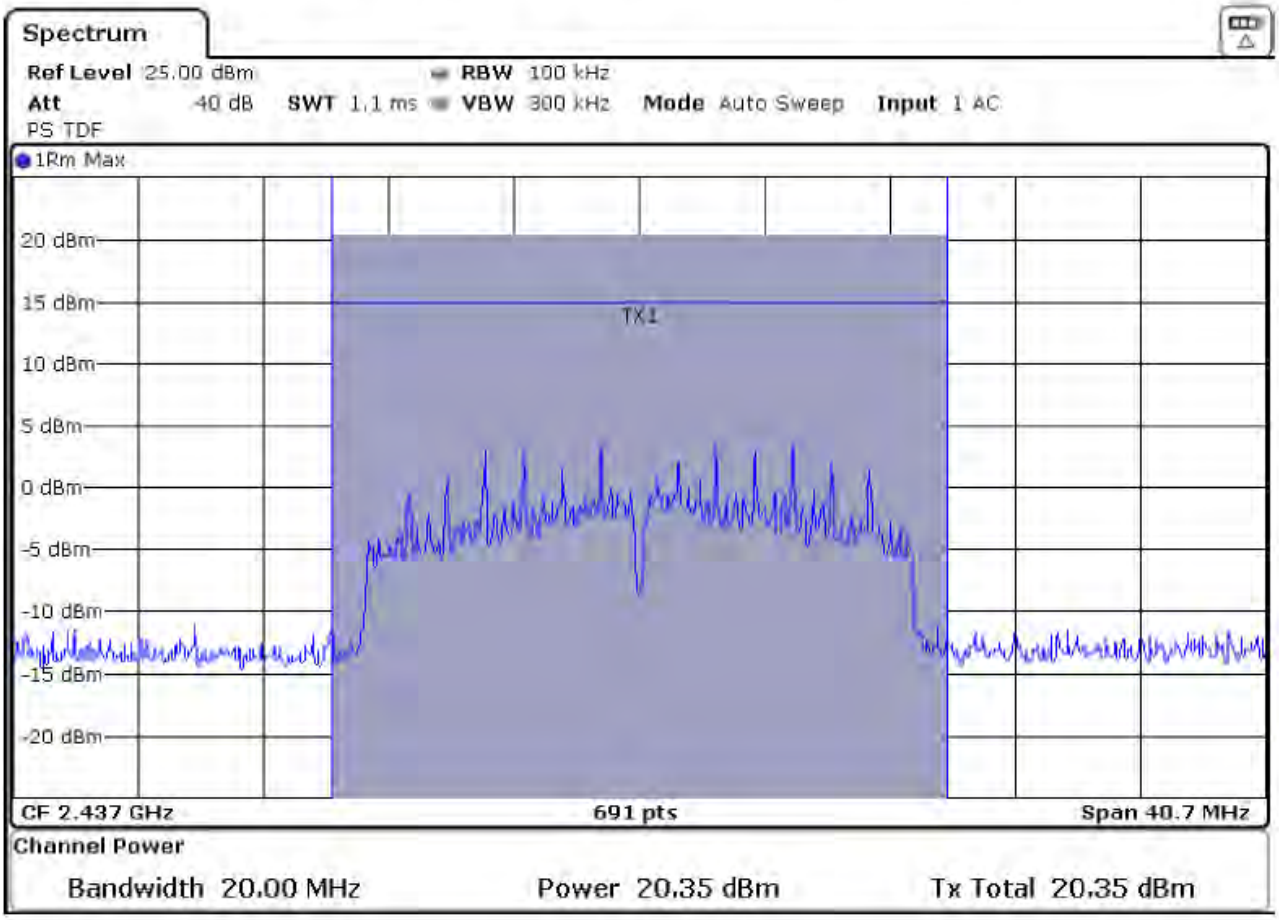
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 20 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	20,35	9,65	30,00	**pass**

TESTED IN GERMANY

FCC 1

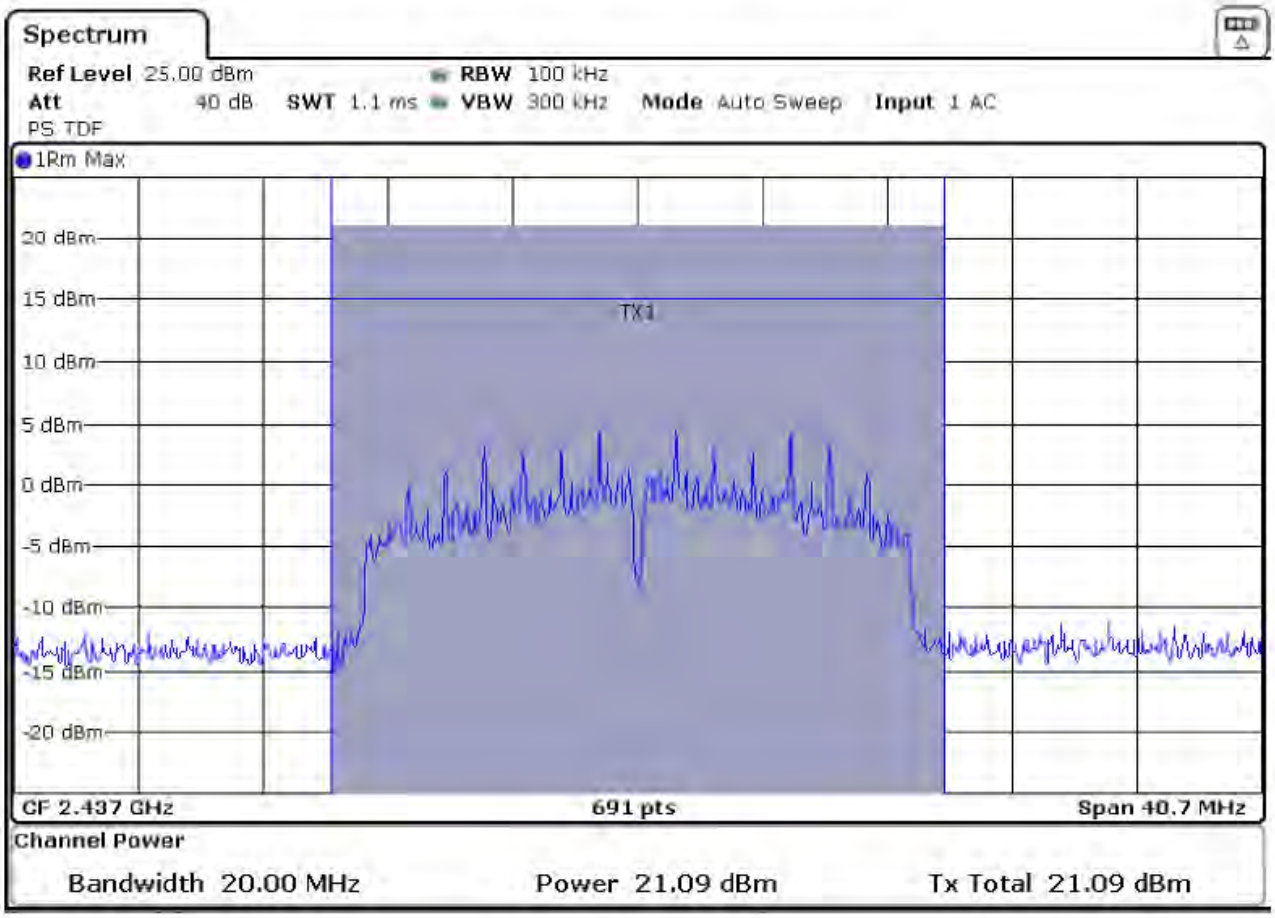
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 20 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	21,09	8,91	30,00	**pass**

TESTED IN GERMANY

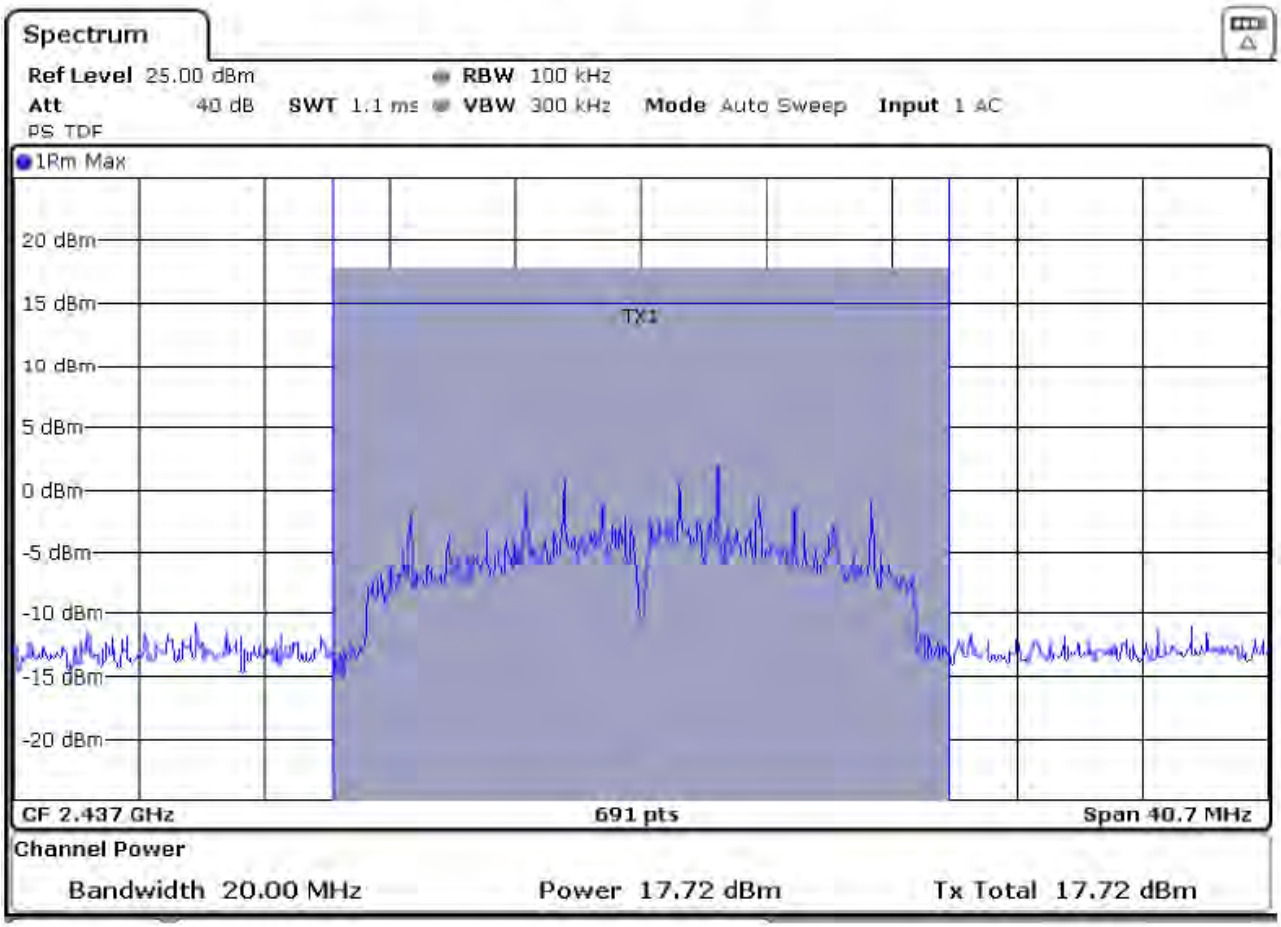
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 20 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	17,72	12,28	30,00	**pass**

TESTED IN GERMANY

FCC 1

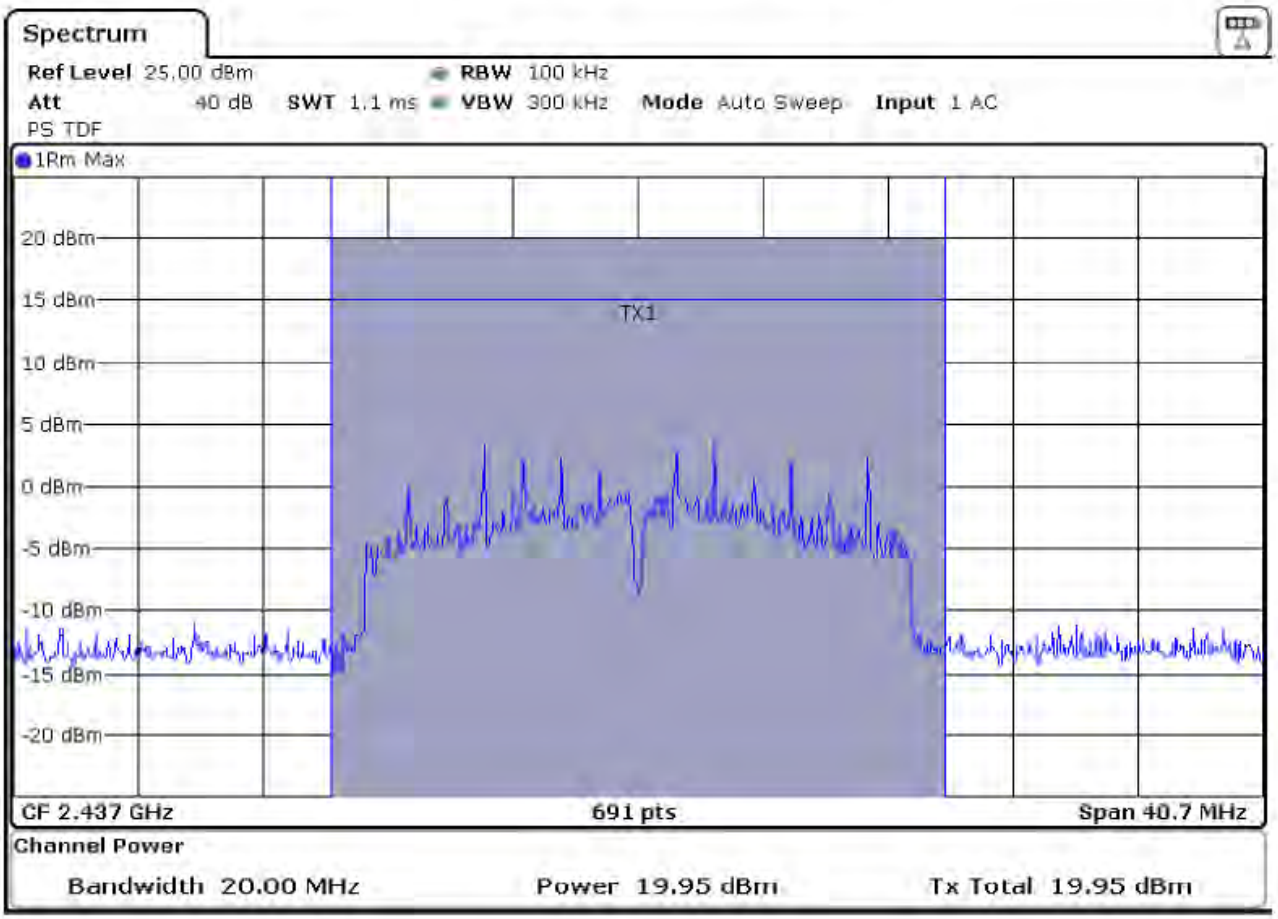
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 20 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	19,95	10,05	30,00	**pass**

TESTED IN GERMANY

FCC 1

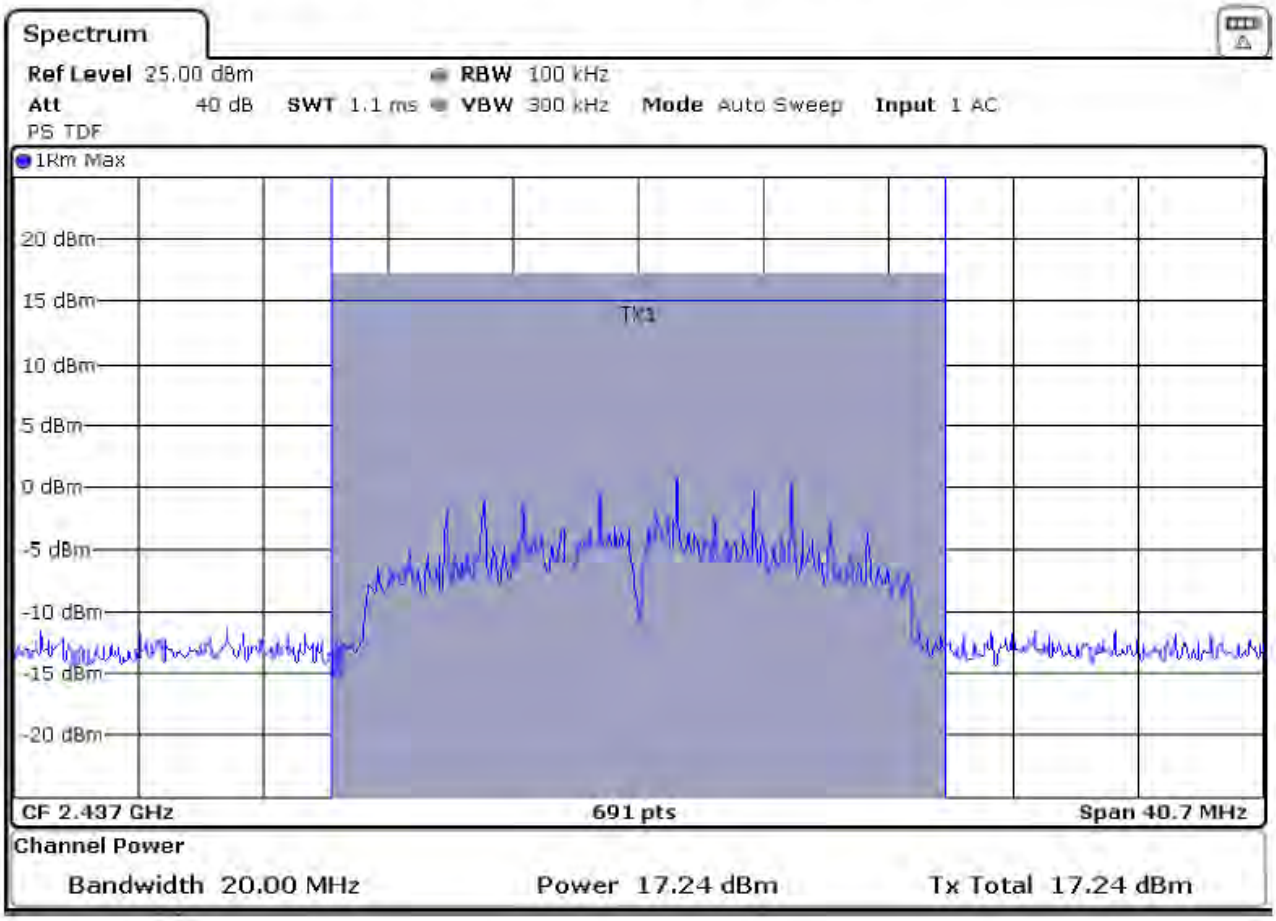
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 20 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	17,24	12,76	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2437	18,35	30,00	pass
Position: X	H	2437	20,35	30,00	pass
Position: Y	V	2437	21,09	30,00	pass
Position: Y	H	2437	17,72	30,00	pass
Position: Z	V	2437	19,95	30,00	pass
Position: Z	H	2437	17,24	30,00	pass

Highest operating frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

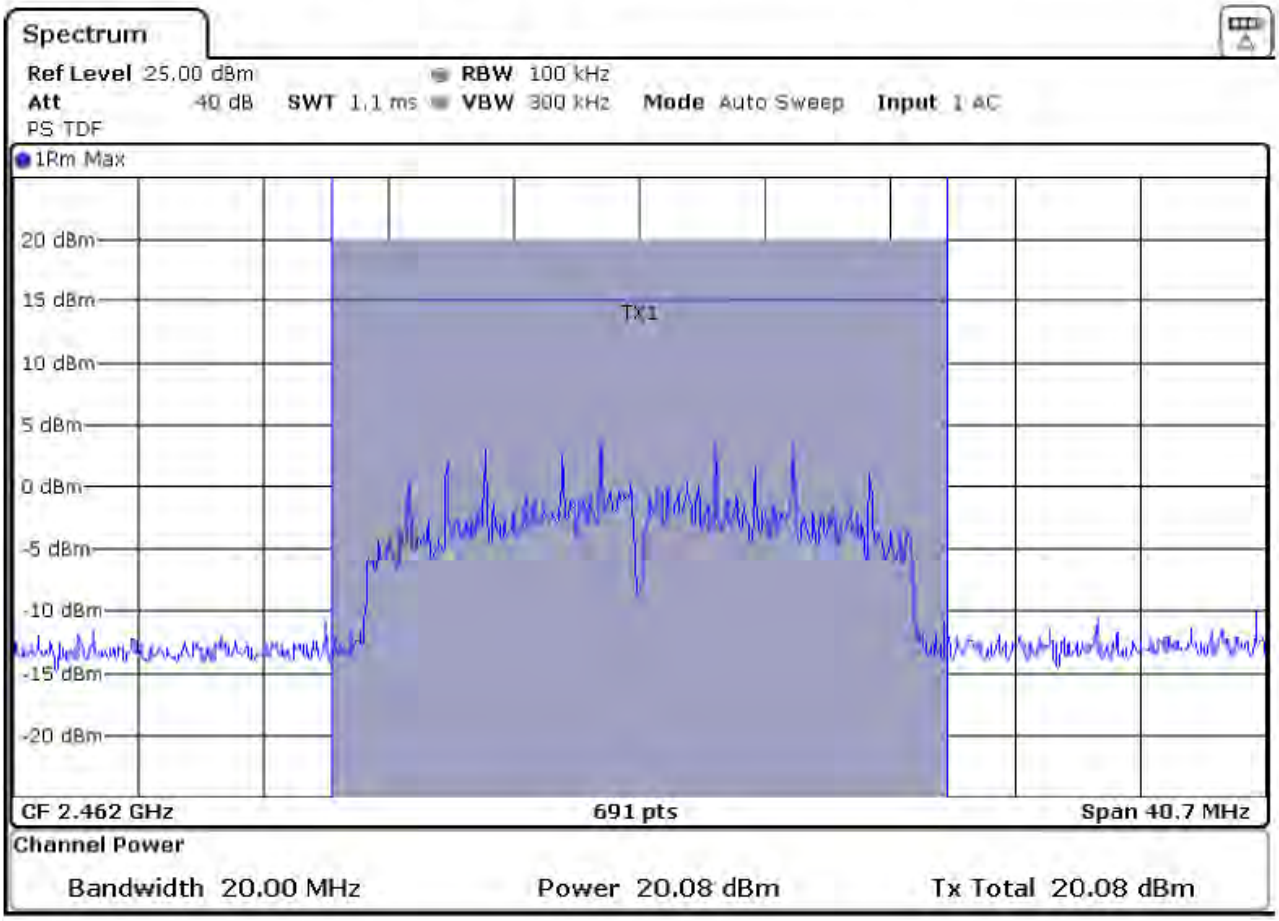
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.11, HT: Greenfield, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	20,08	9,92	30,00	**pass**

TESTED IN GERMANY

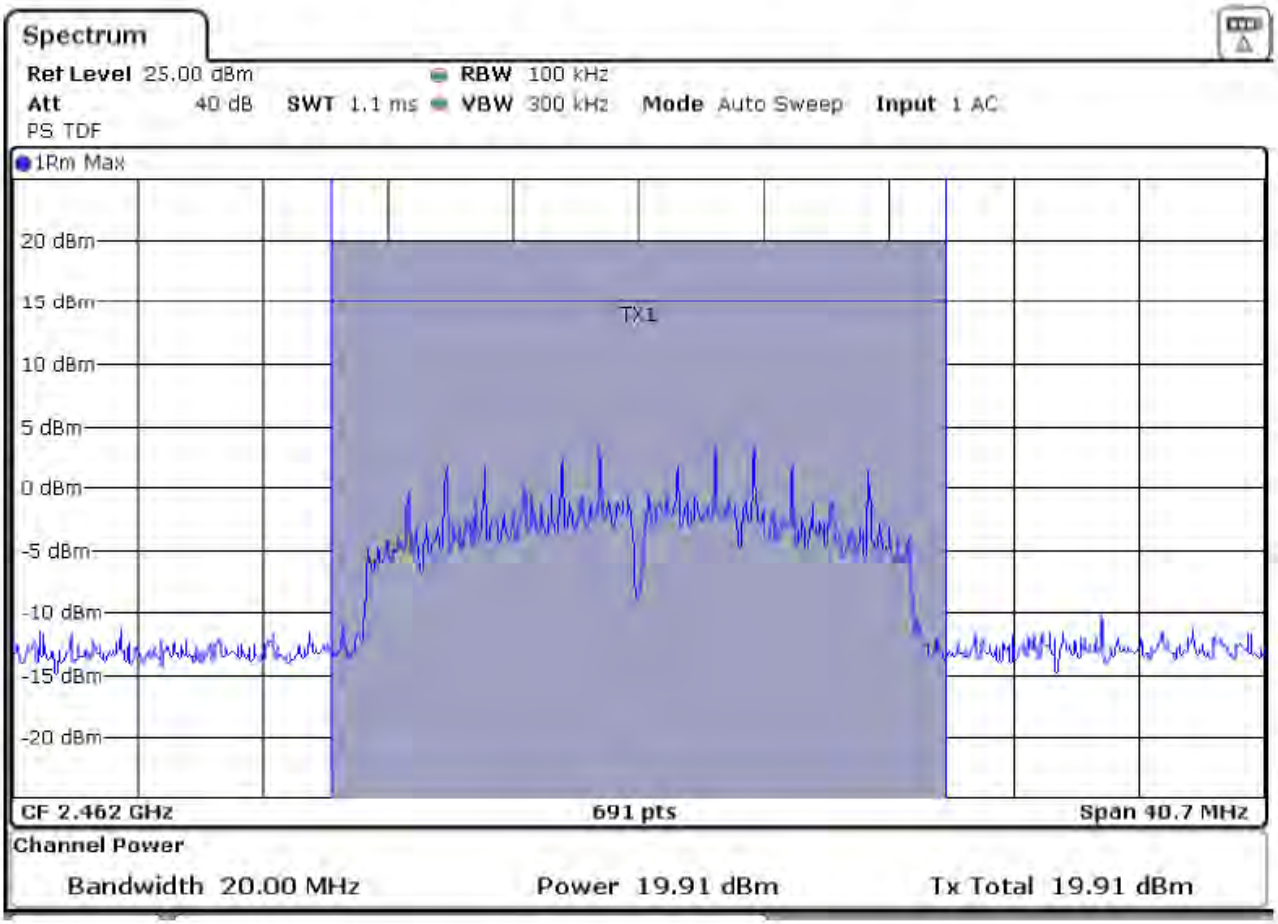
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.11, HT: Greenfield, BW = 20 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	19,91	10,09	30,00	**pass**

TESTED IN GERMANY

FCC 1

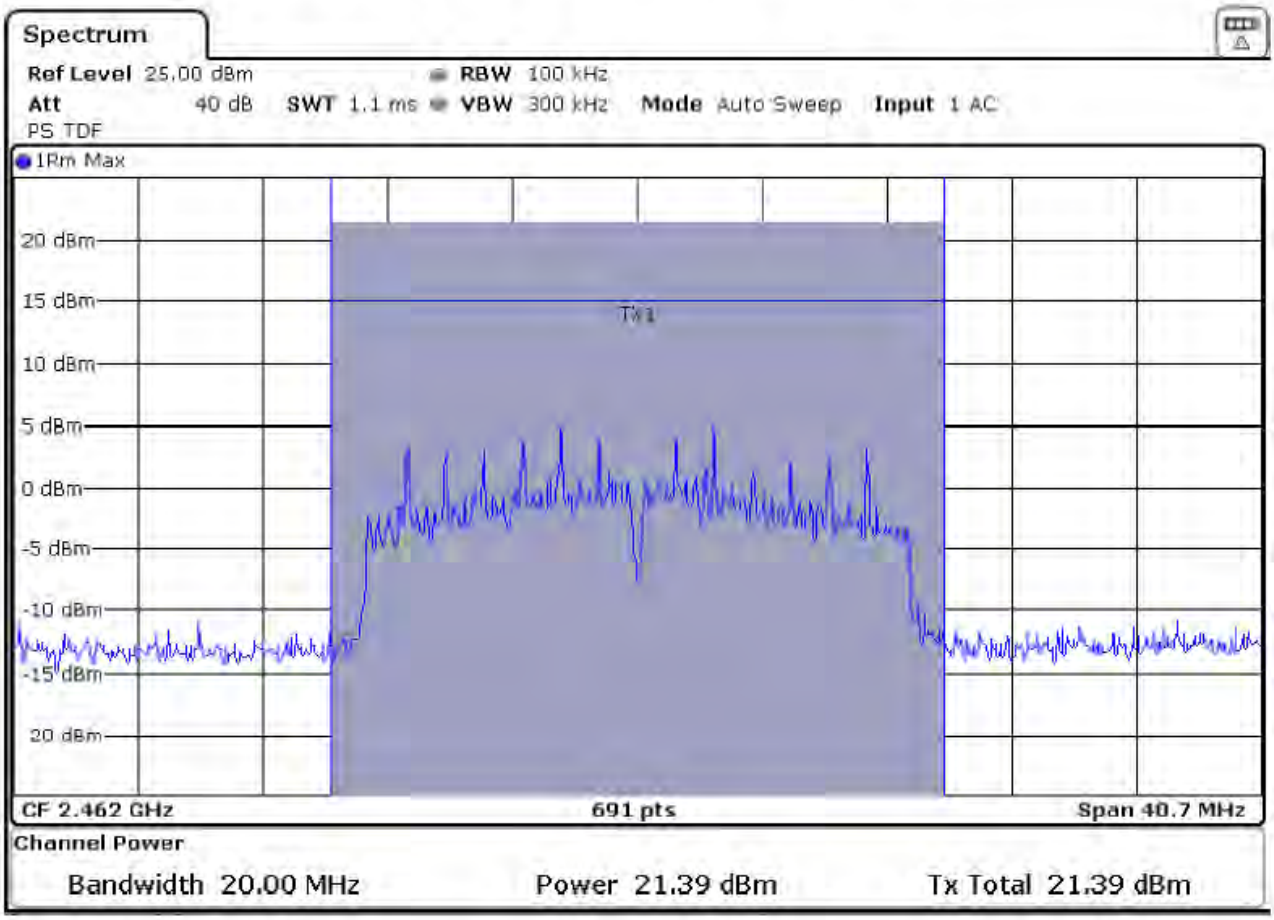
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.11, HT: Greenfield, BW = 20 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	21,39	8,61	30,00	**pass**

TESTED IN GERMANY

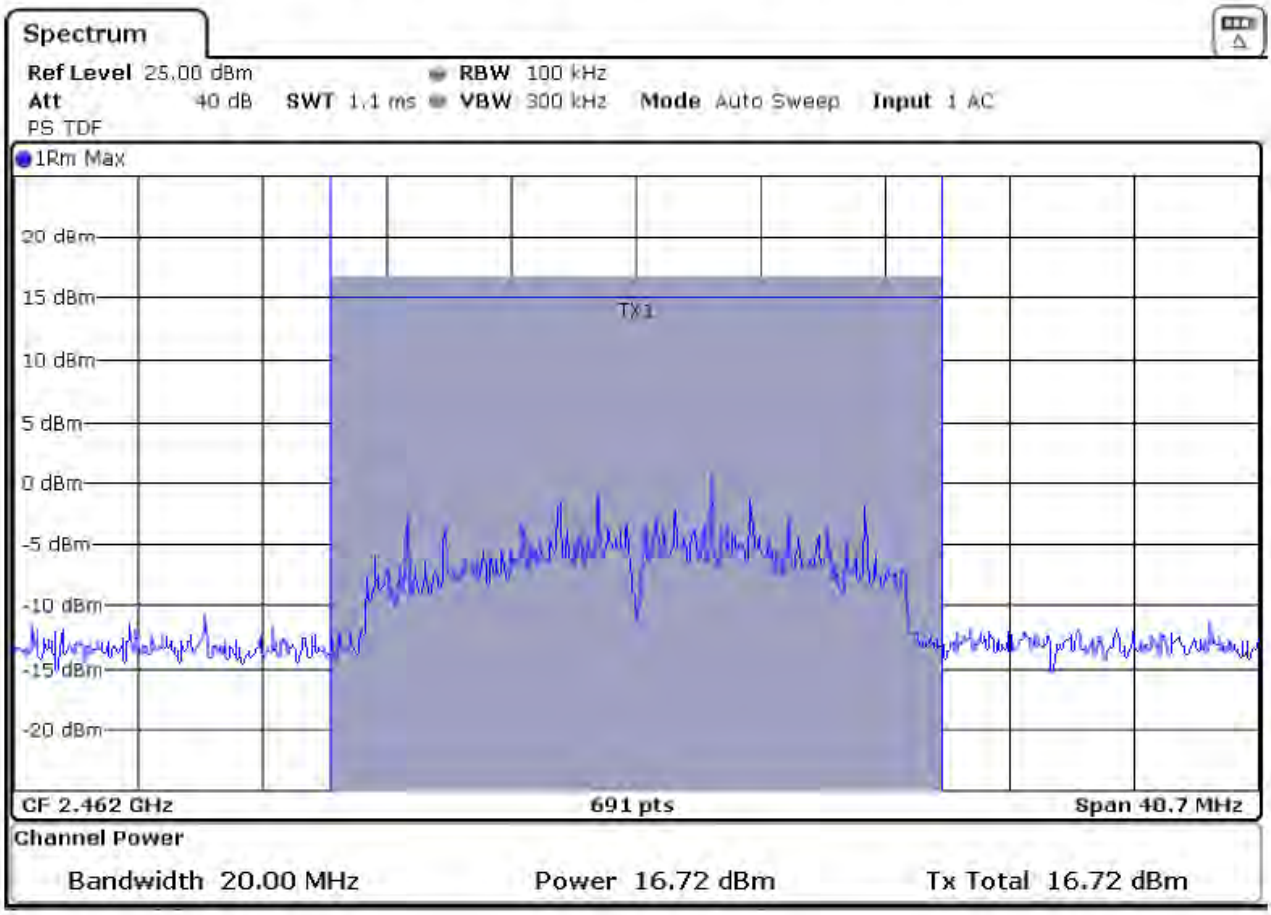
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.11, HT: Greenfield, BW = 20 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	16,72	13,28	30,00	**pass**

TESTED IN GERMANY

FCC 1

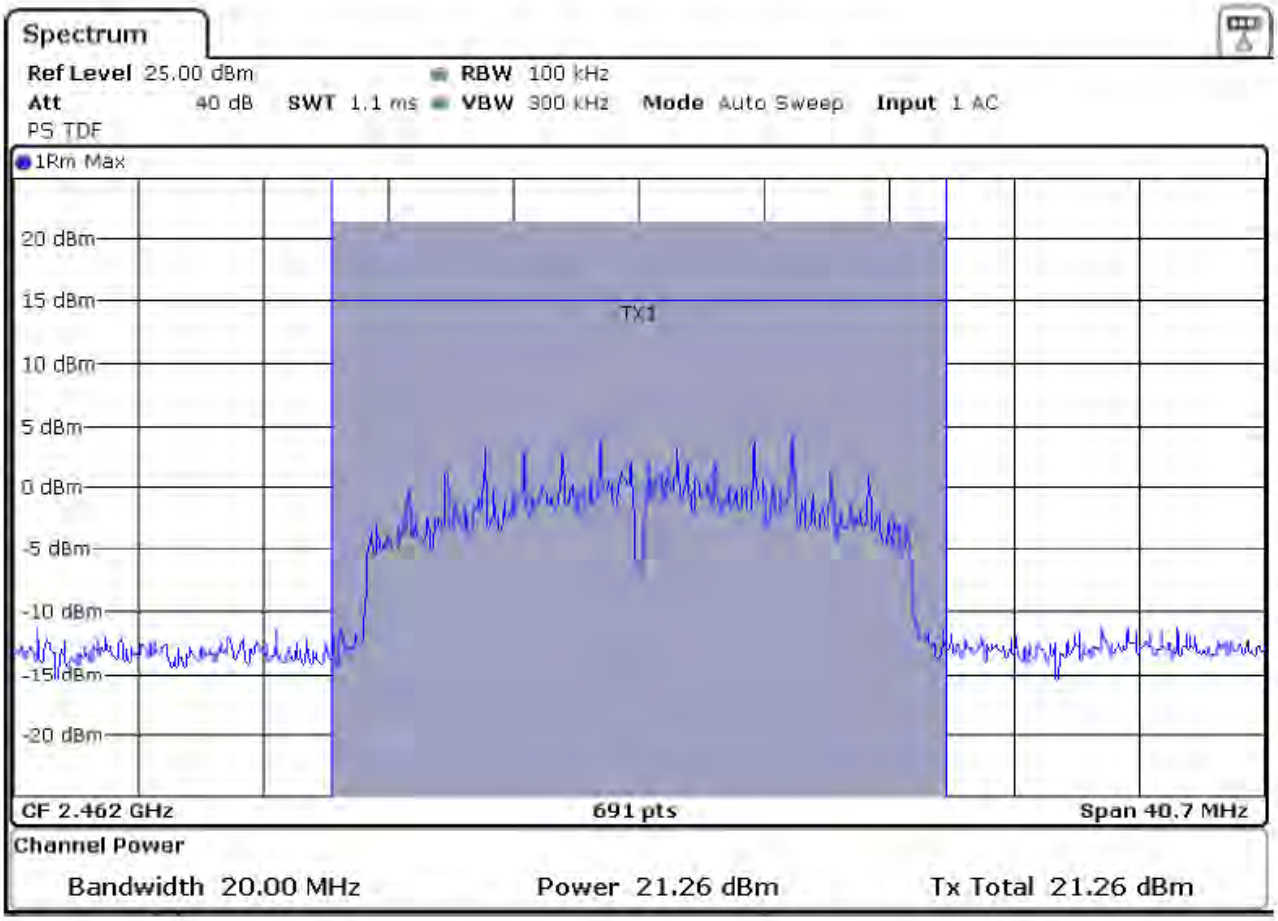
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH 11, HT: Greenfield, BW = 20 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	21,26	8,74	30,00	**pass**

TESTED IN GERMANY

FCC 1

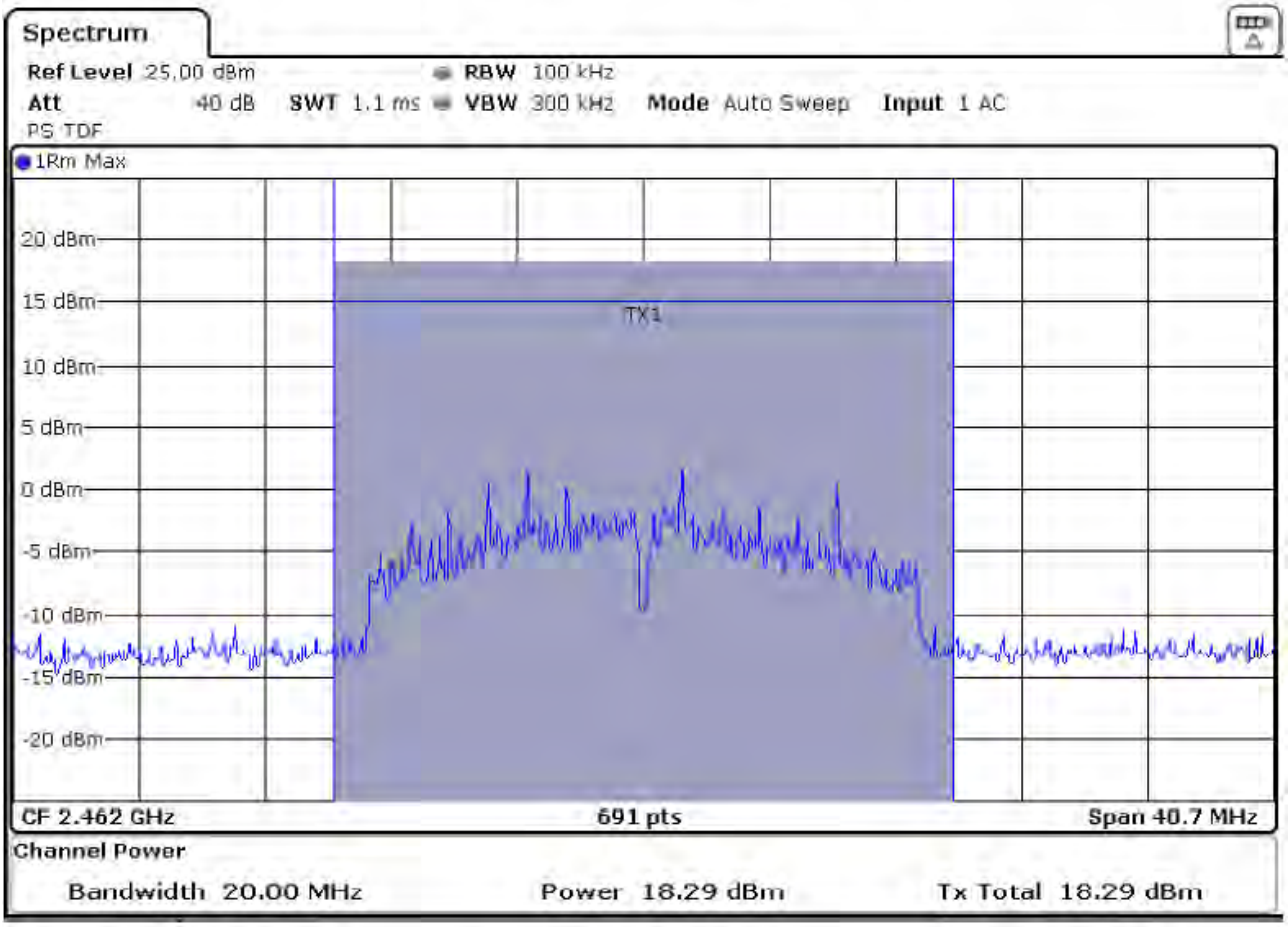
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH 11, HT: Greenfield, BW = 20 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	18,29	11,71	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2462	20,08	30,00	pass
Position: X	H	2462	19,91	30,00	pass
Position: Y	V	2462	21,39	30,00	pass
Position: Y	H	2462	16,72	30,00	pass
Position: Z	V	2462	21,26	30,00	pass
Position: Z	H	2462	18,29	30,00	pass

Maximum output power radiated measurement:
802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX1 / ext. Antenna typ 1

Channel	Frequency [MHz]	Output Power		Limit		Result
		[dBm]	[mW]	[dBm]	[mW]	
1	2412	20.16	103.75	30	1000	Pass
6	2437	21.09	128.53	30	1000	Pass
11	2462	21.39	137,72	30	1000	Pass

Lowest operating frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX0 / ext. Antenna typ 1

TESTED IN GERMANY

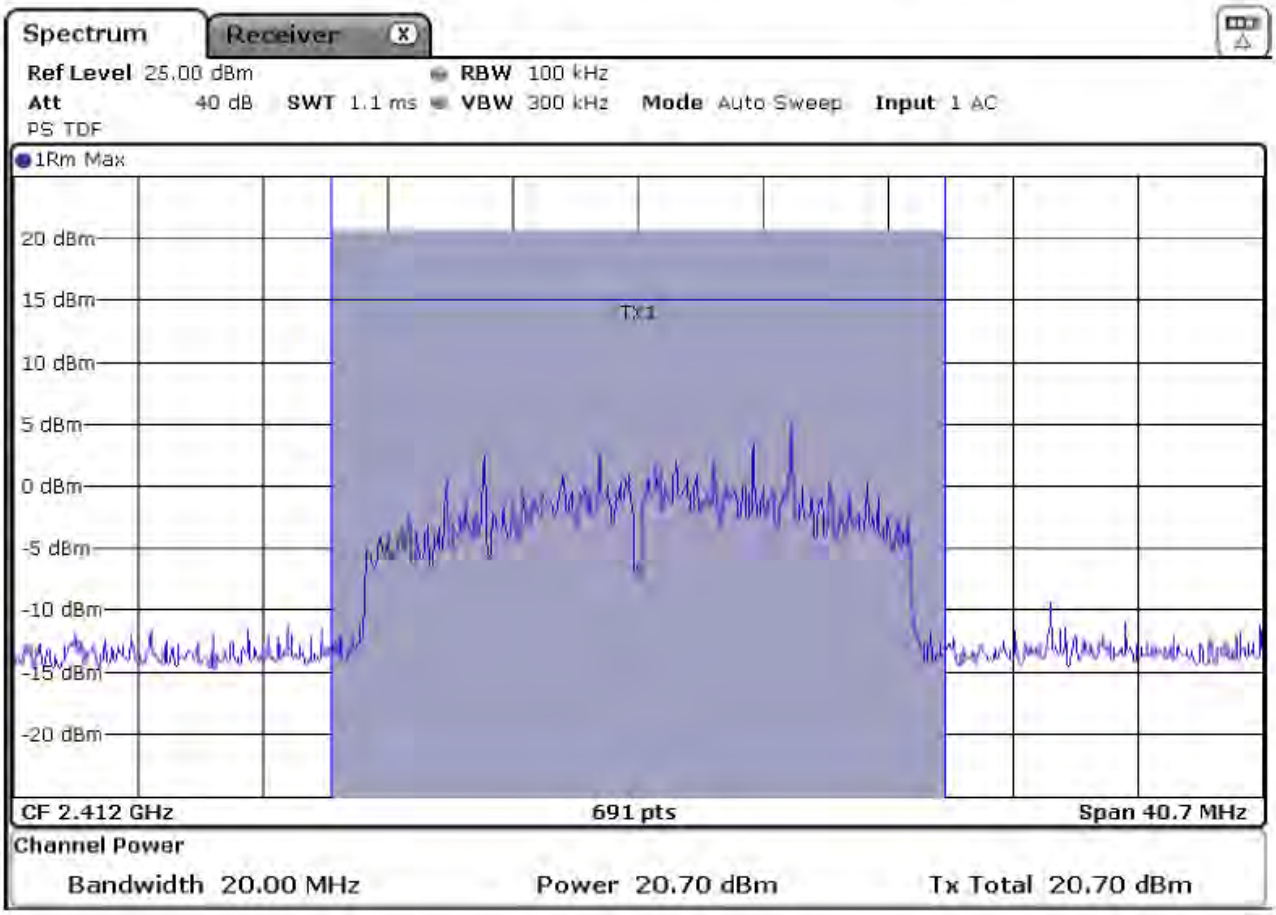
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.01, HT:Greenfield , BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	20,70	9,30	30,00	**pass**

TESTED IN GERMANY

FCC 1

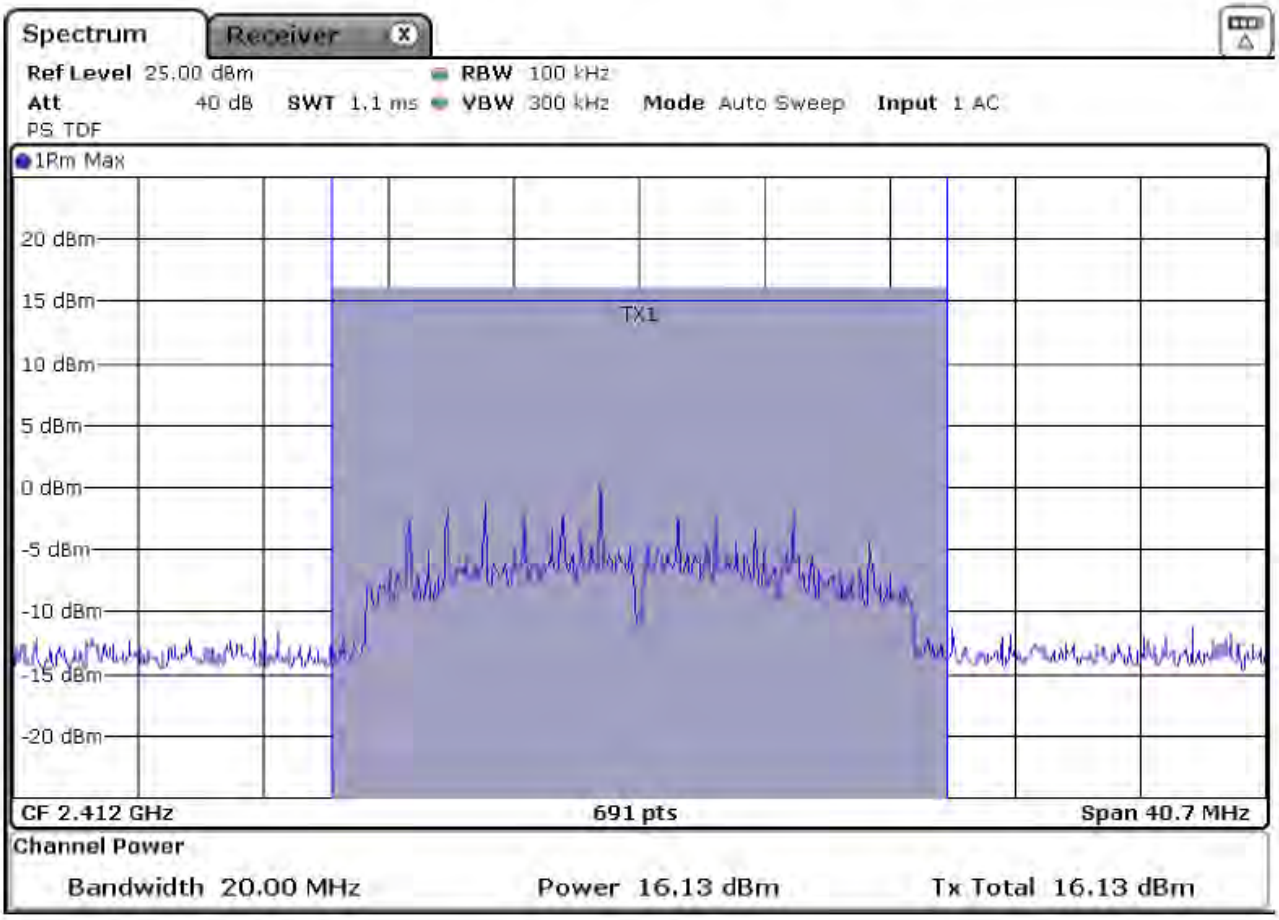
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.01, HT:Greenfield , BW = 20 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	16,13	13,87	30,00	**pass**

Middle operating frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX0 / ext. Antenna typ 1

TESTED IN GERMANY

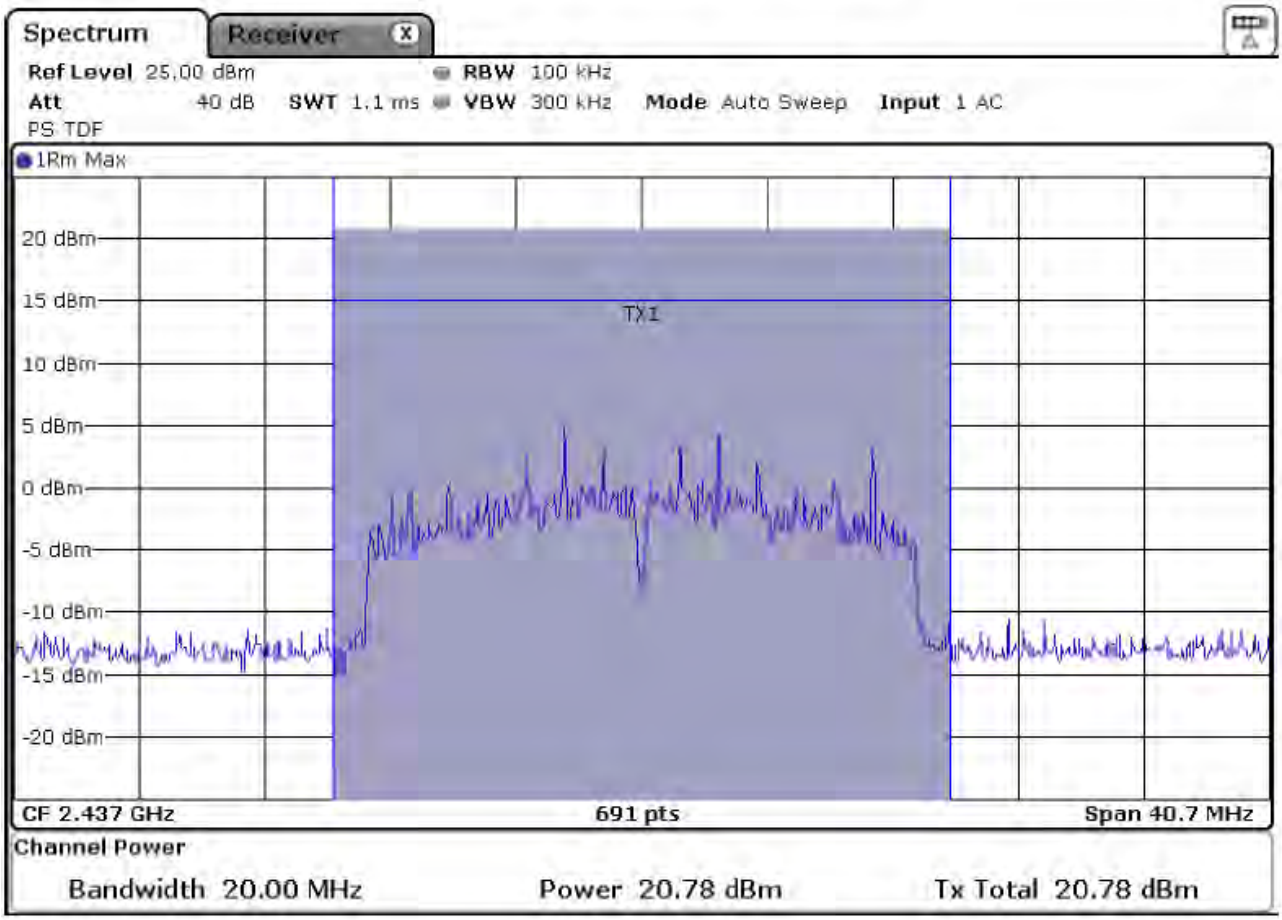
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.06, HT:Greenfield , BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	20,78	9,22	30,00	**pass**

TESTED IN GERMANY

FCC 1

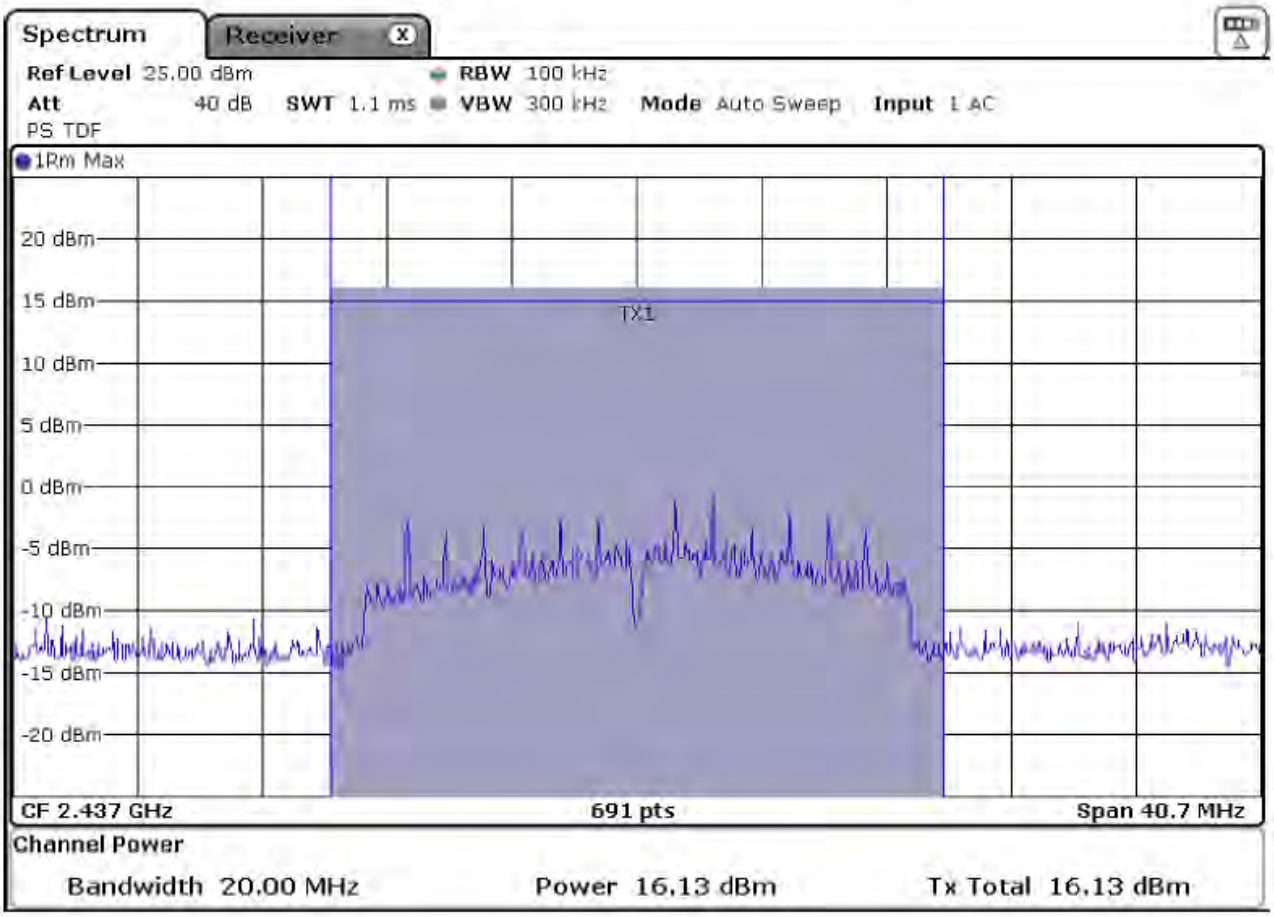
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.06, HT:Greenfield , BW = 20 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	16,13	13,87	30,00	**pass**

Highest operating frequency - 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX0 / ext. Antenna typ 1

TESTED IN GERMANY

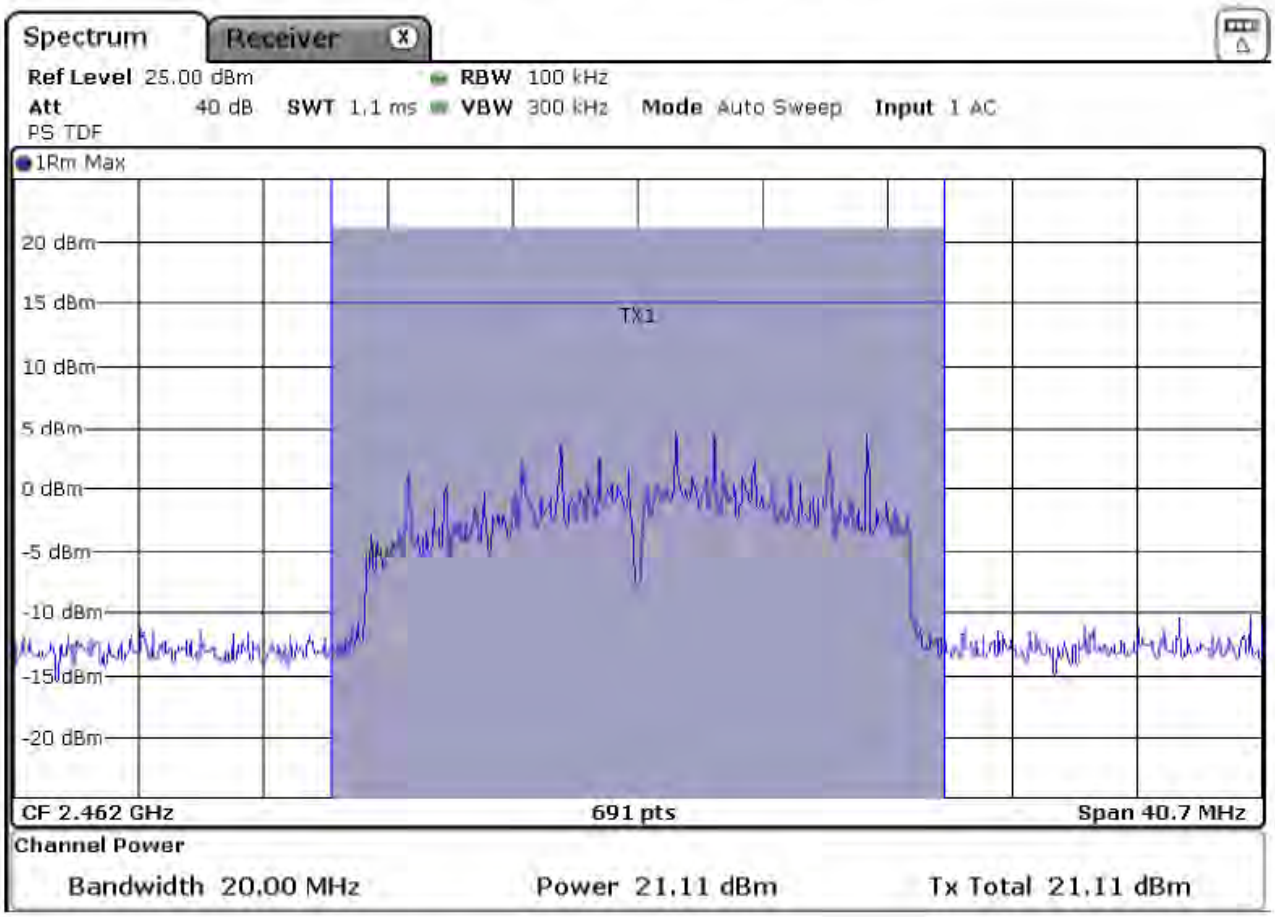
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.11, HT:Greenfield , BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	21,11	8,89	30,00	**pass**

TESTED IN GERMANY

FCC 1

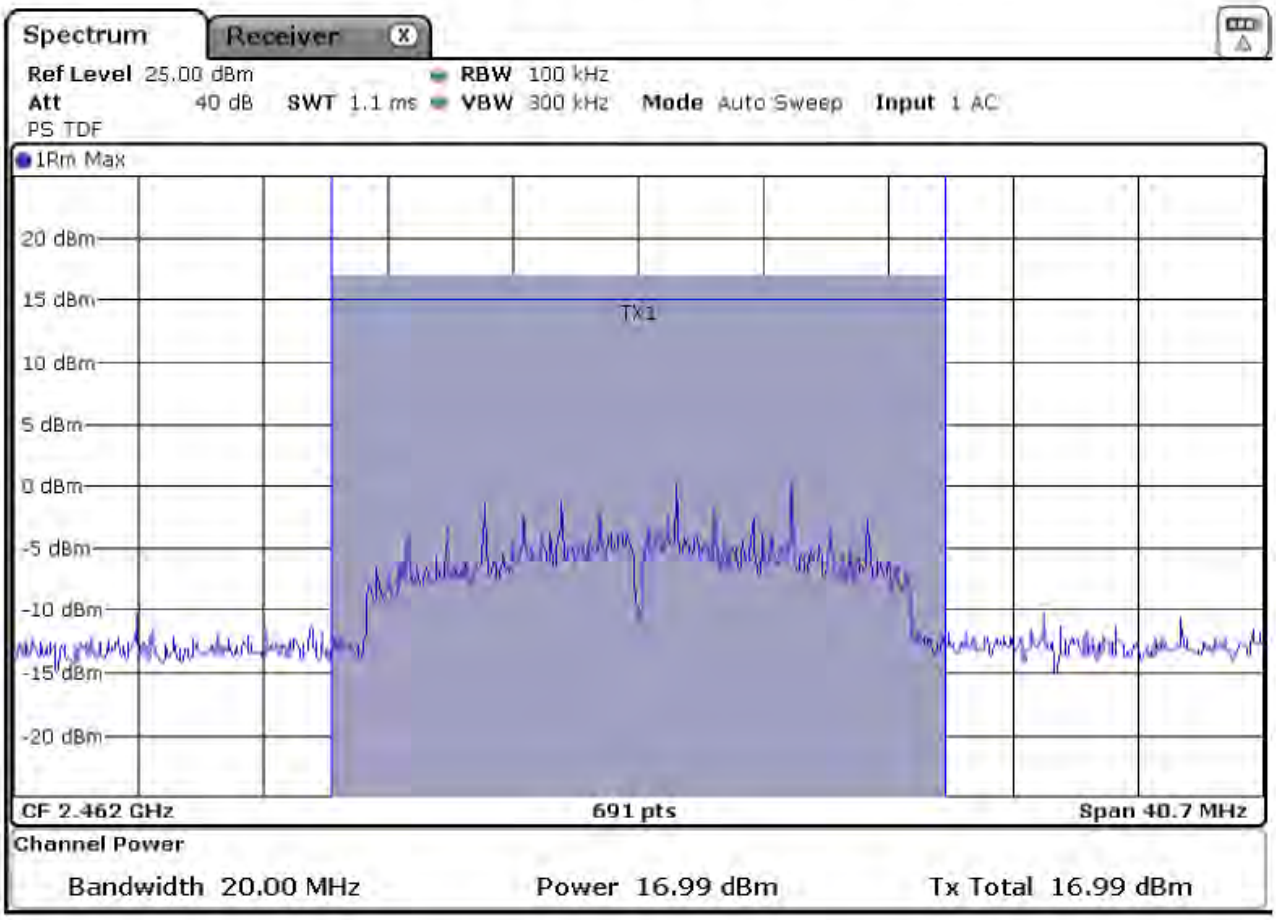
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.11, HT:Greenfield , BW = 20 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	16,99	13,01	30,00	**pass**

Maximum output power radiated measurement: 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX0 / ext. Antenna typ 1						
Channel	Frequency [MHz]	Output Power		Limit		Result
		[dBm]	[mW]	[dBm]	[mW]	
1	2412	20.70	117.49	30	1000	Pass
6	2437	20.78	119.67	30	1000	Pass
11	2462	21.11	129.12	30	1000	Pass

Maximum output power conducted measurement: 802.11n 20MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX0 + TX/RX1 / external Antenna typ 1								
Channel	Frequency [MHz]	Output TX/RX0 [mW]	Output TX/RX1 [mW]	Total Output Power		Limit		Result
				[dBm]	[mW]	[dBm]	[mW]	
1	2412	117.49	103.75	23.45	221.24	30	1000	Pass
6	2437	119.67	128.53	23.95	248.20	30	1000	Pass
11	2462	129.12	137,72	24.26	266,84	30	1000	Pass
According to KDB 662911 D01								

Lowest operating frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

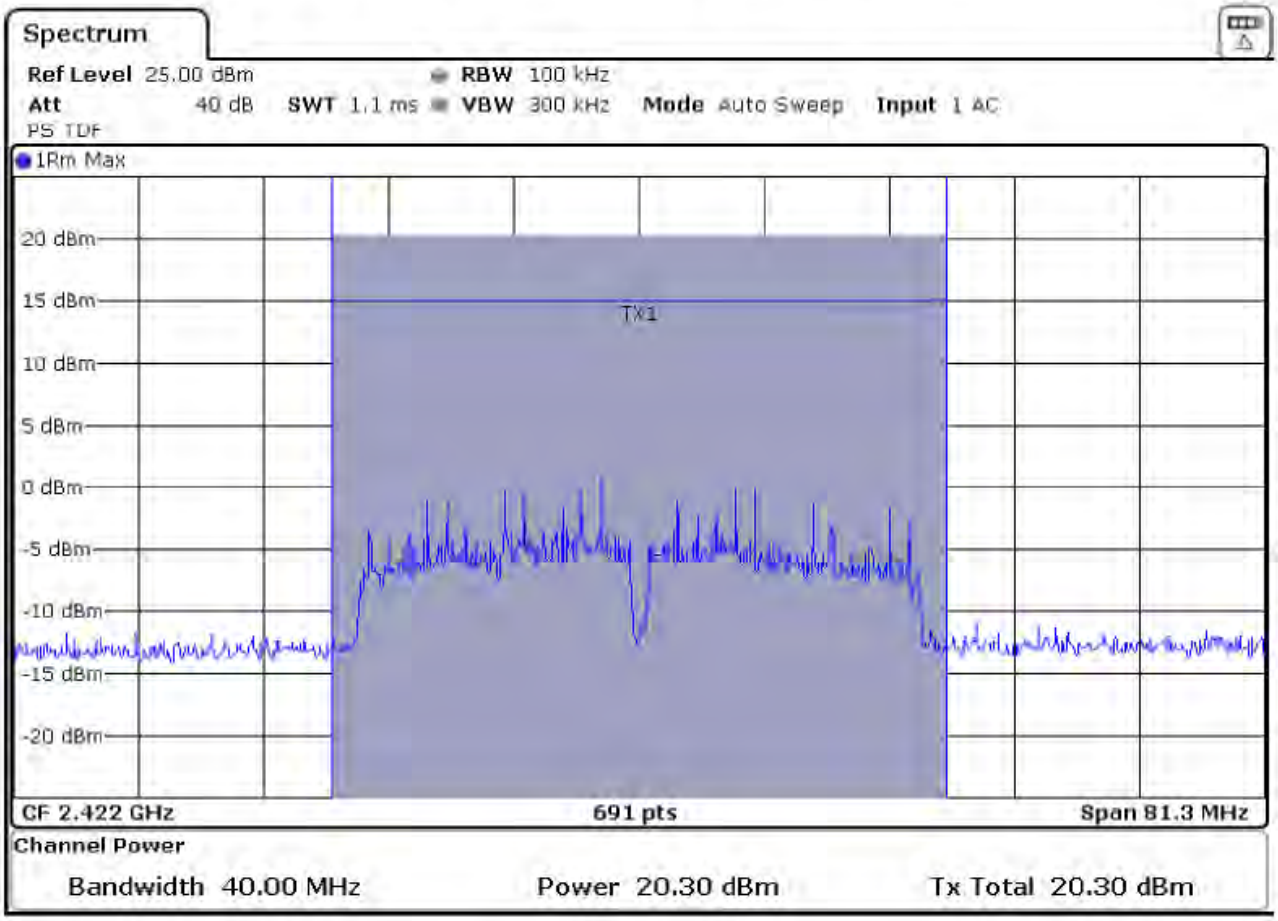
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.3, HT: Greenfield, BW = 40 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2422	20,30	9,70	30,00	**pass**

TESTED IN GERMANY

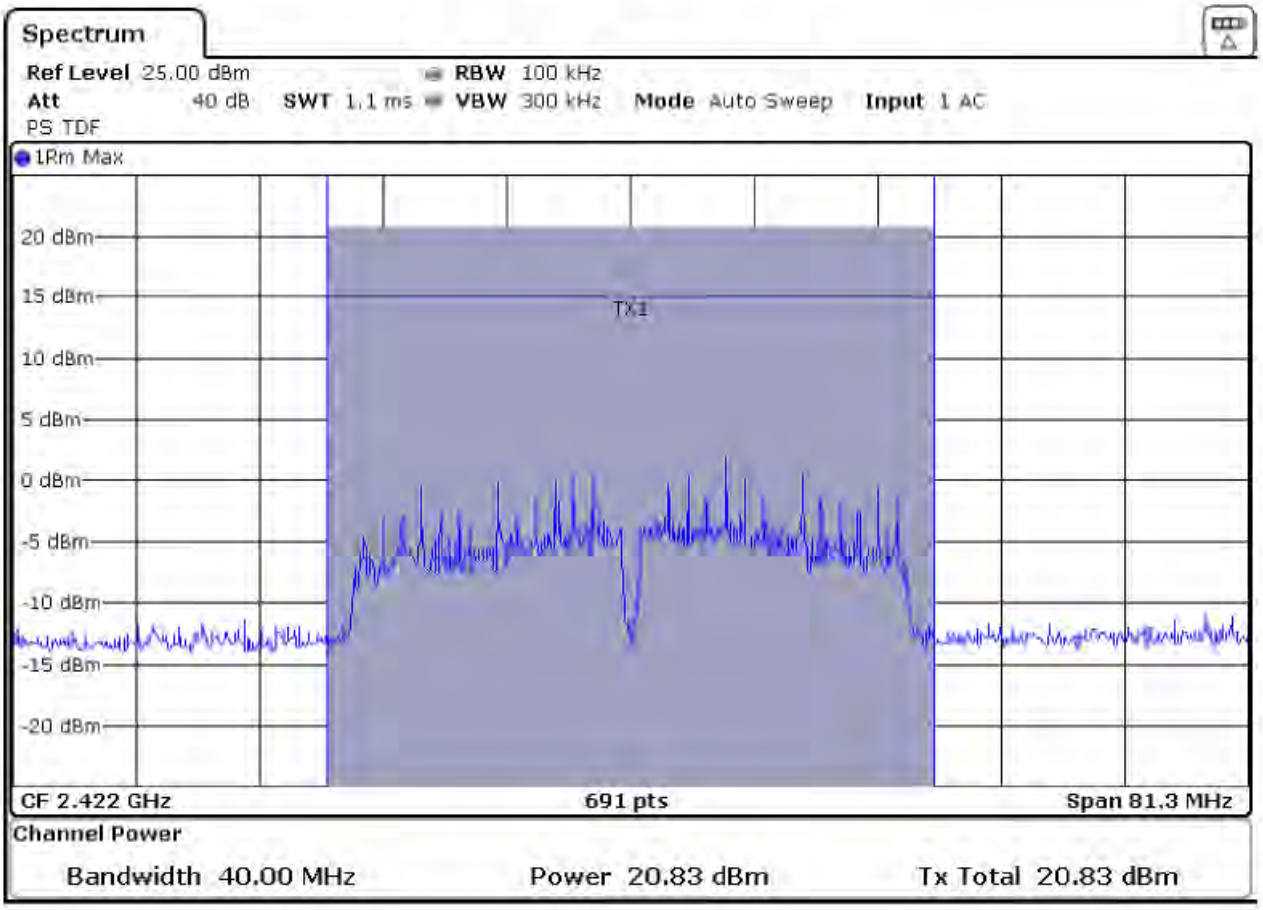
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.3, HT: Greenfield, BW = 40 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2422	20,83	9,17	30,00	**pass**

TESTED IN GERMANY

FCC 1

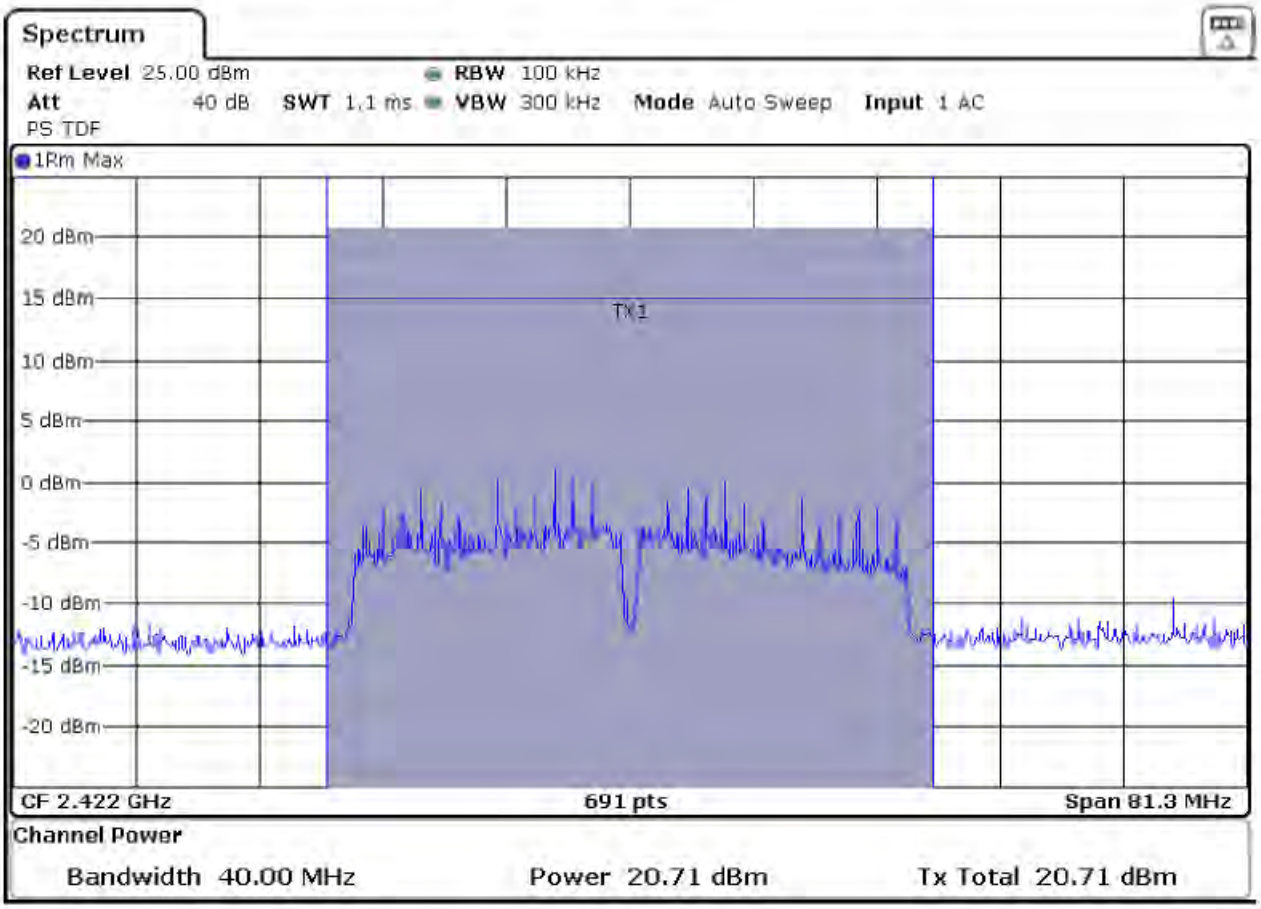
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.3, HT: Greenfield, BW = 40 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2422	20,71	9,29	30,00	**pass**

TESTED IN GERMANY

FCC 1

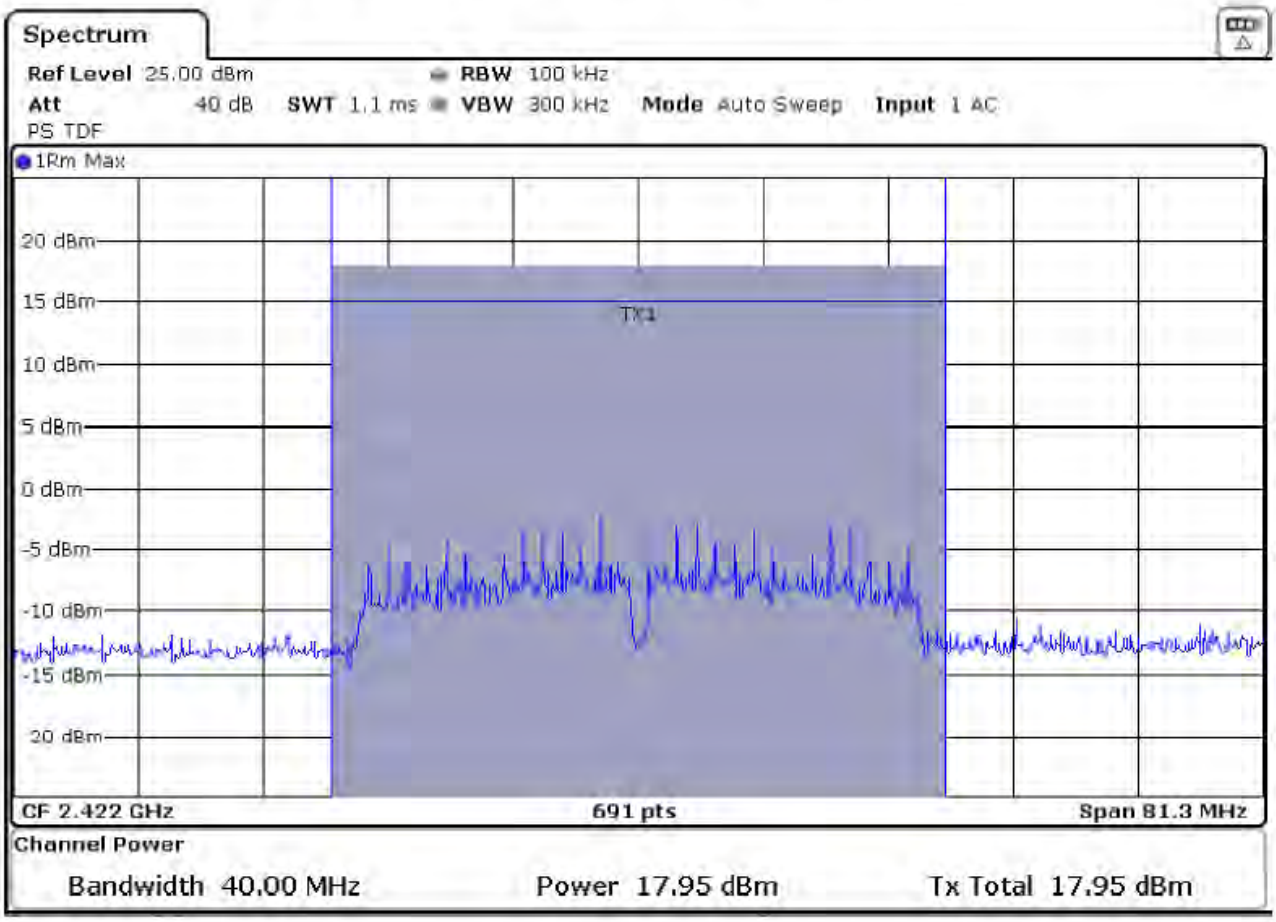
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.3, HT: Greenfield, BW = 40 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2422	17,95	12,05	30,00	**pass**

TESTED IN GERMANY

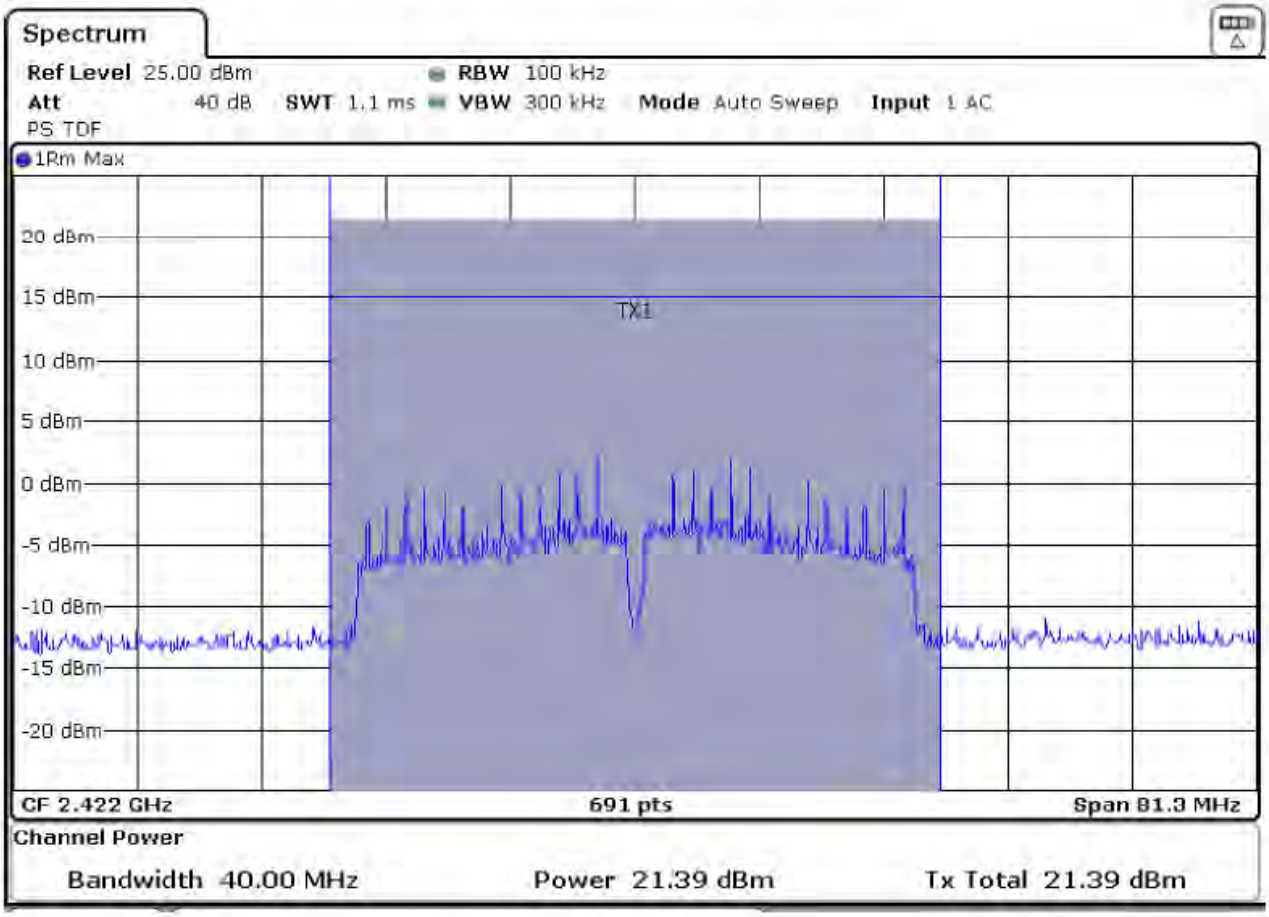
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.3, HT: Greenfield, BW = 40 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2422	21,39	8,61	30,00	**pass**

TESTED IN GERMANY

FCC 1

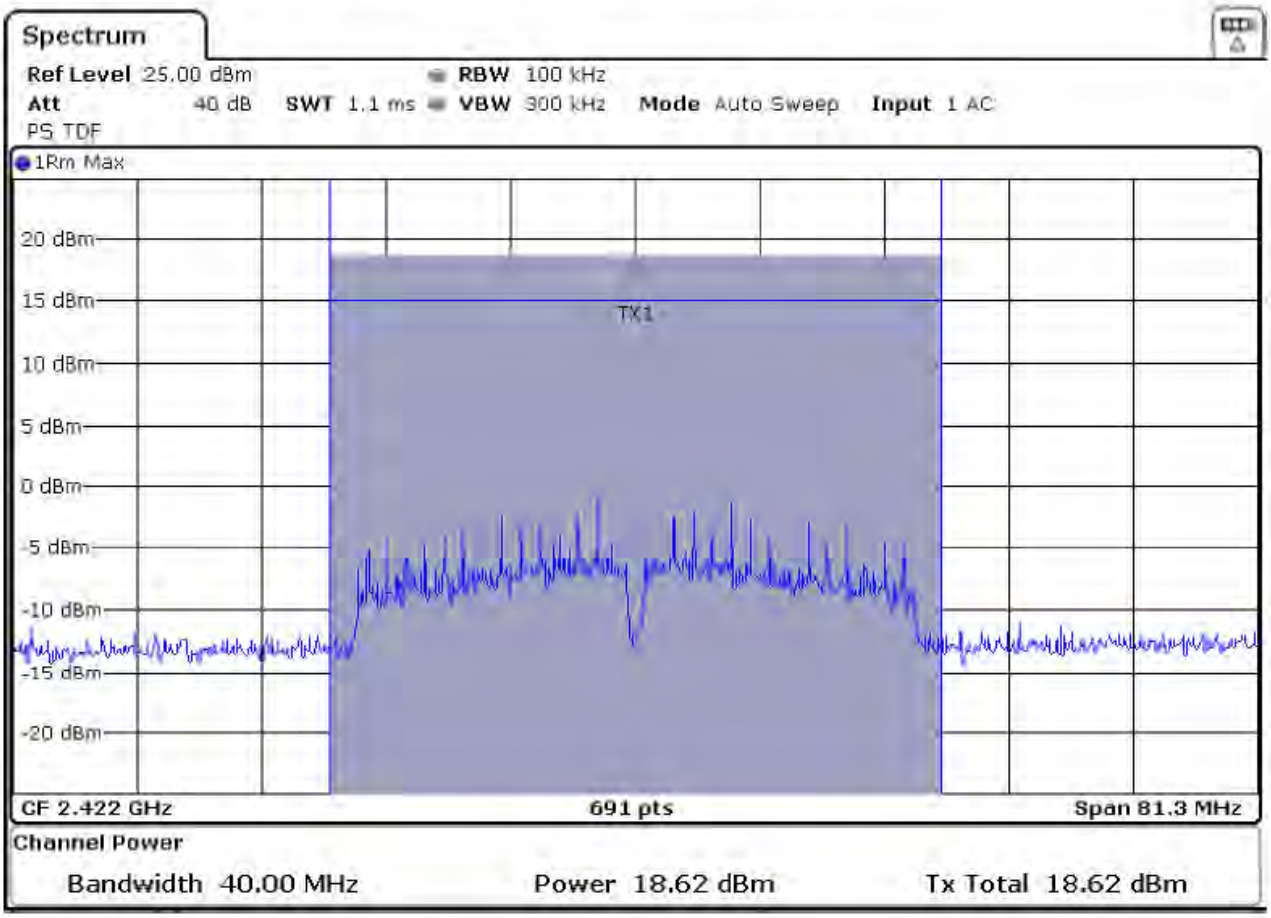
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.3, HT: Greenfield, BW = 40 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2422	18,62	11,38	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2422	20,30	30,00	pass
Position: X	H	2422	20,83	30,00	pass
Position: Y	V	2422	20,71	30,00	pass
Position: Y	H	2422	17,95	30,00	pass
Position: Z	V	2422	21,39	30,00	pass
Position: Z	H	2422	18,62	30,00	pass

Middle operating frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

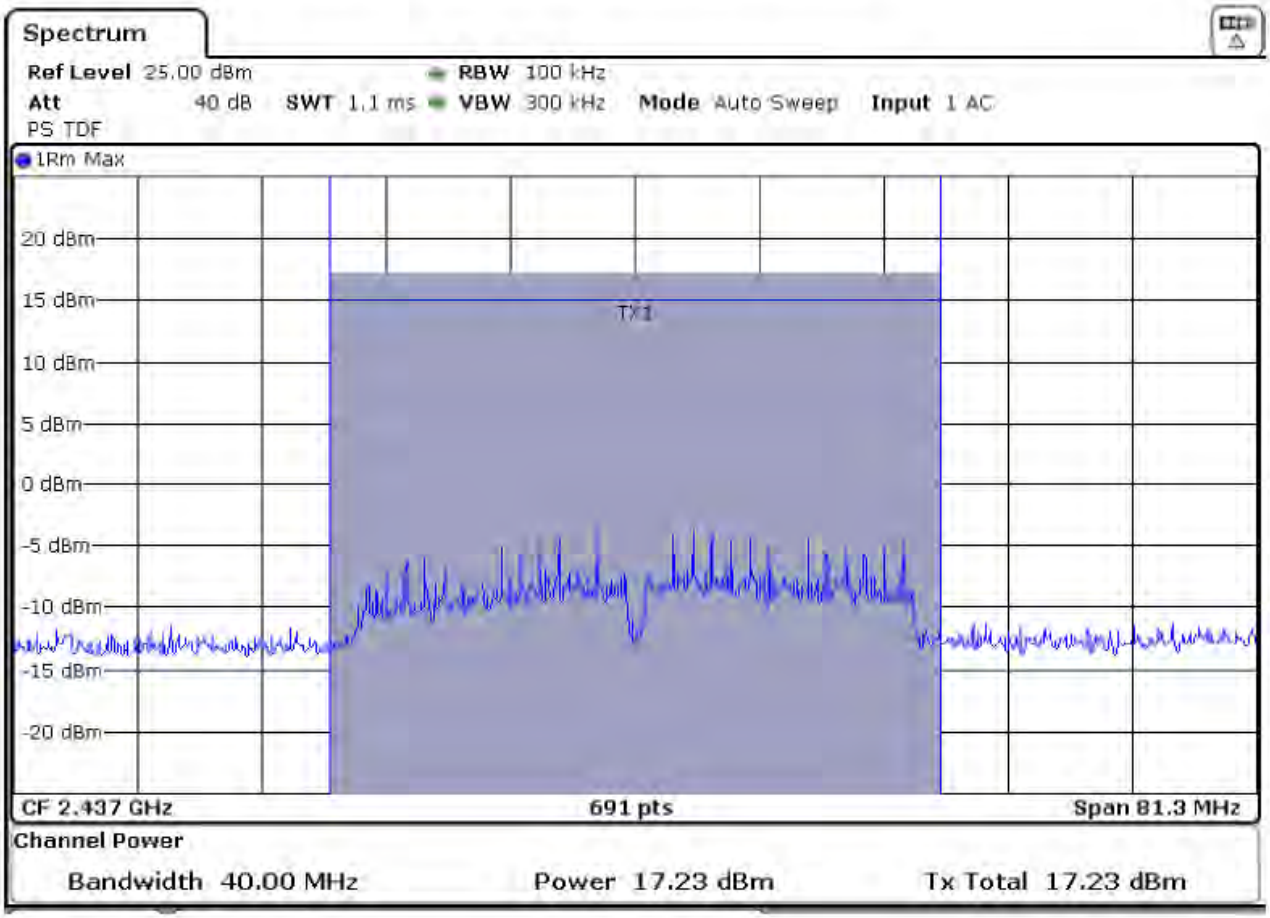
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 40 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	17,23	12,77	30,00	**pass**

TESTED IN GERMANY

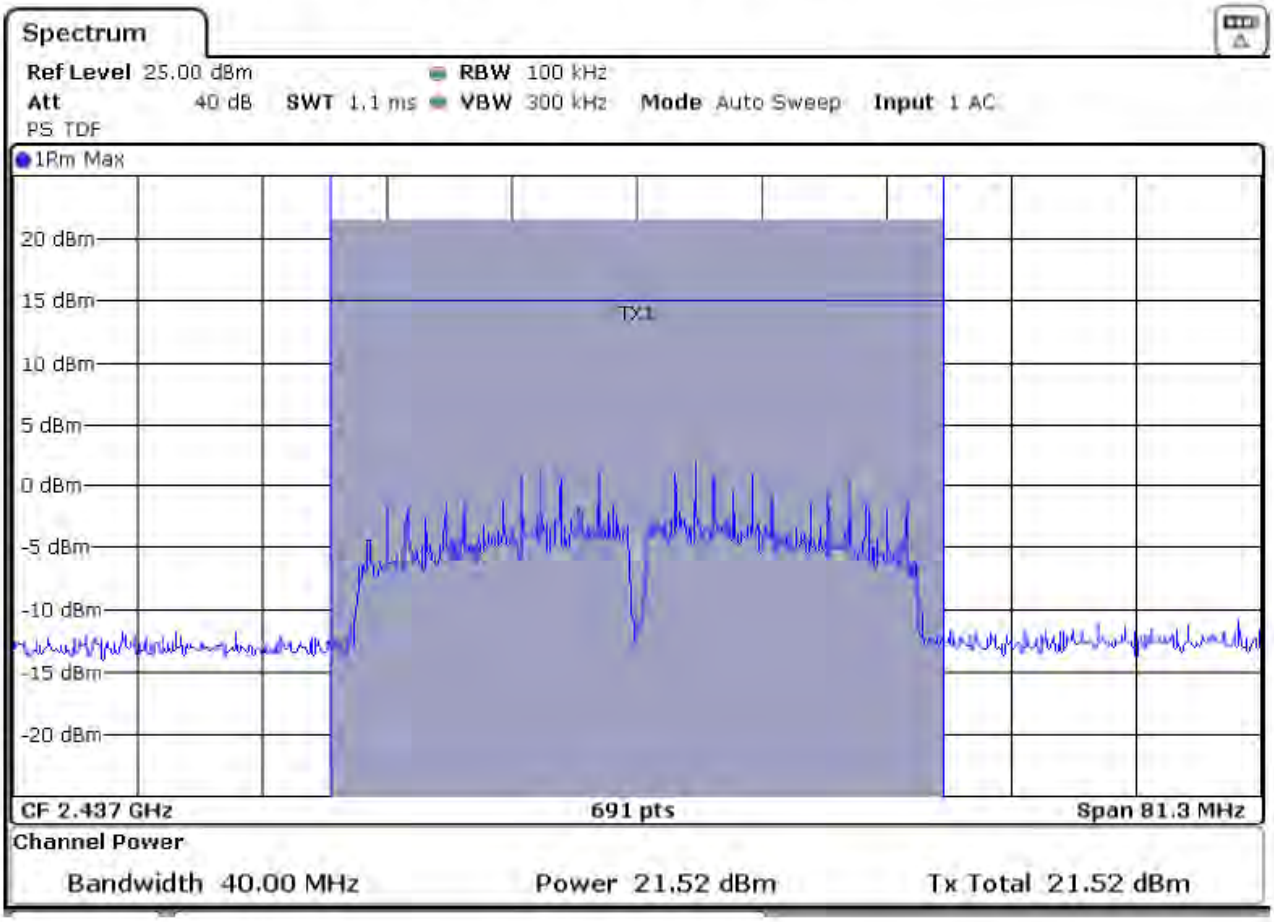
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 40 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	21,52	8,48	30,00	**pass**

TESTED IN GERMANY

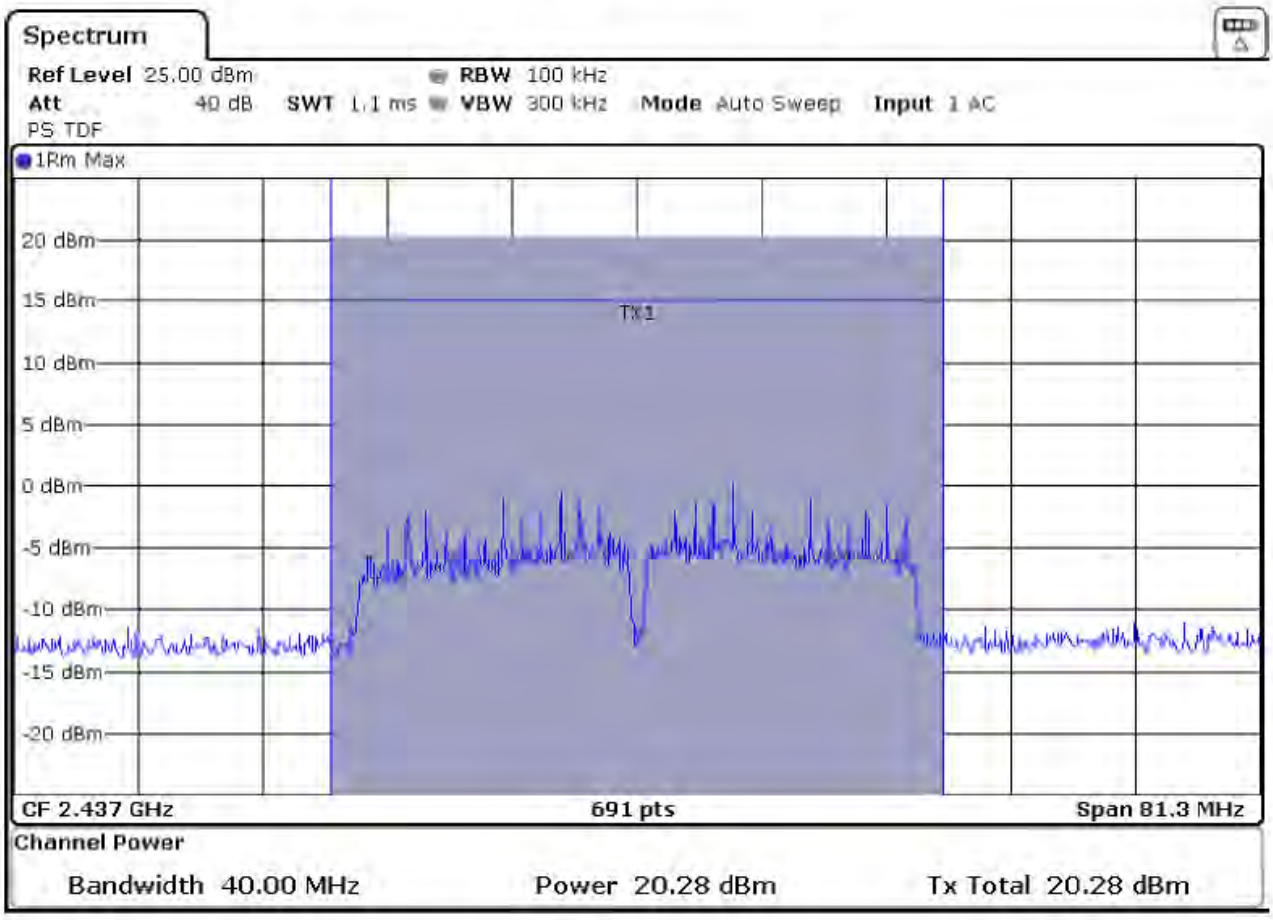
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 40 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	20,28	9,72	30,00	**pass**

TESTED IN GERMANY

FCC 1

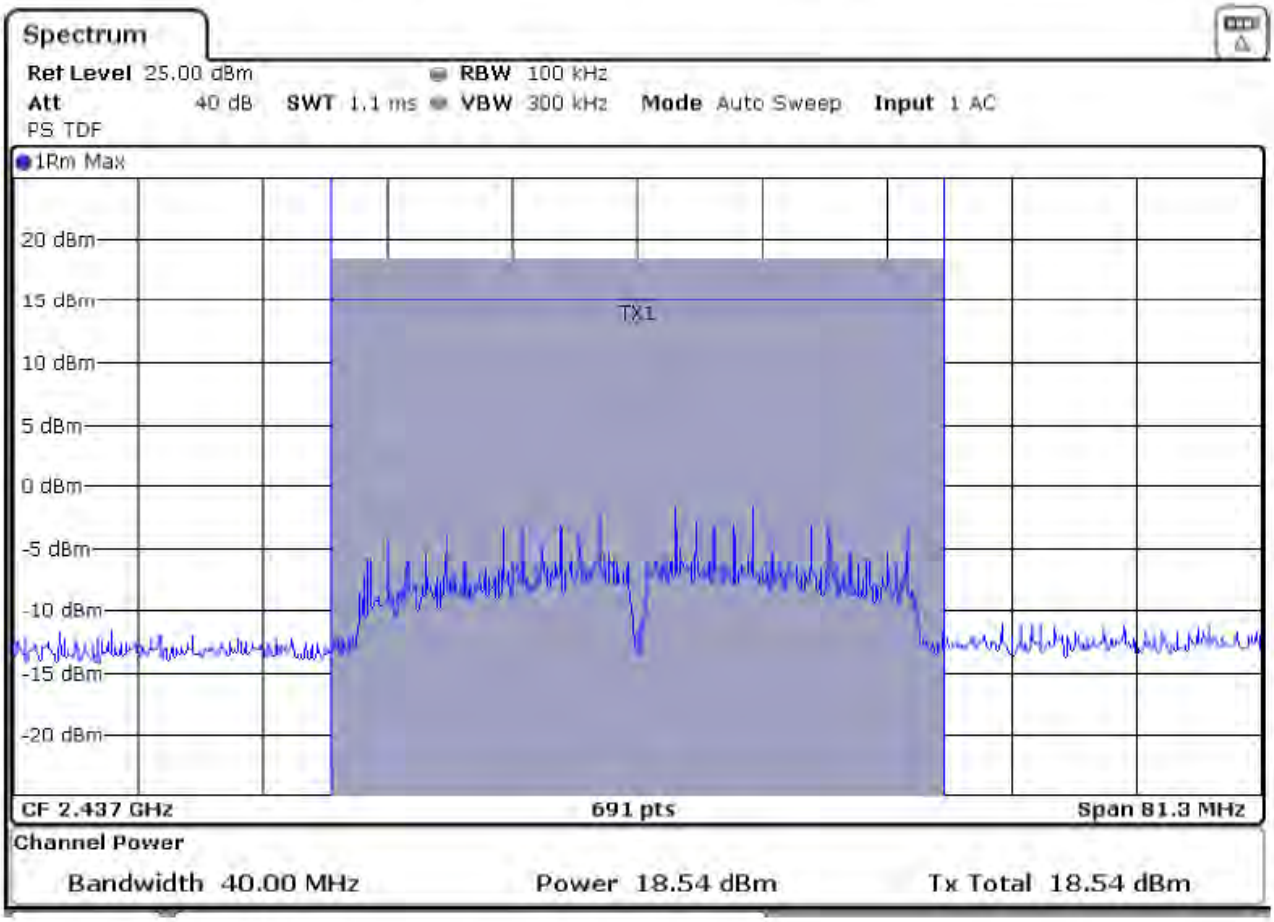
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 40 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	18,54	11,46	30,00	**pass**

TESTED IN GERMANY

FCC 1

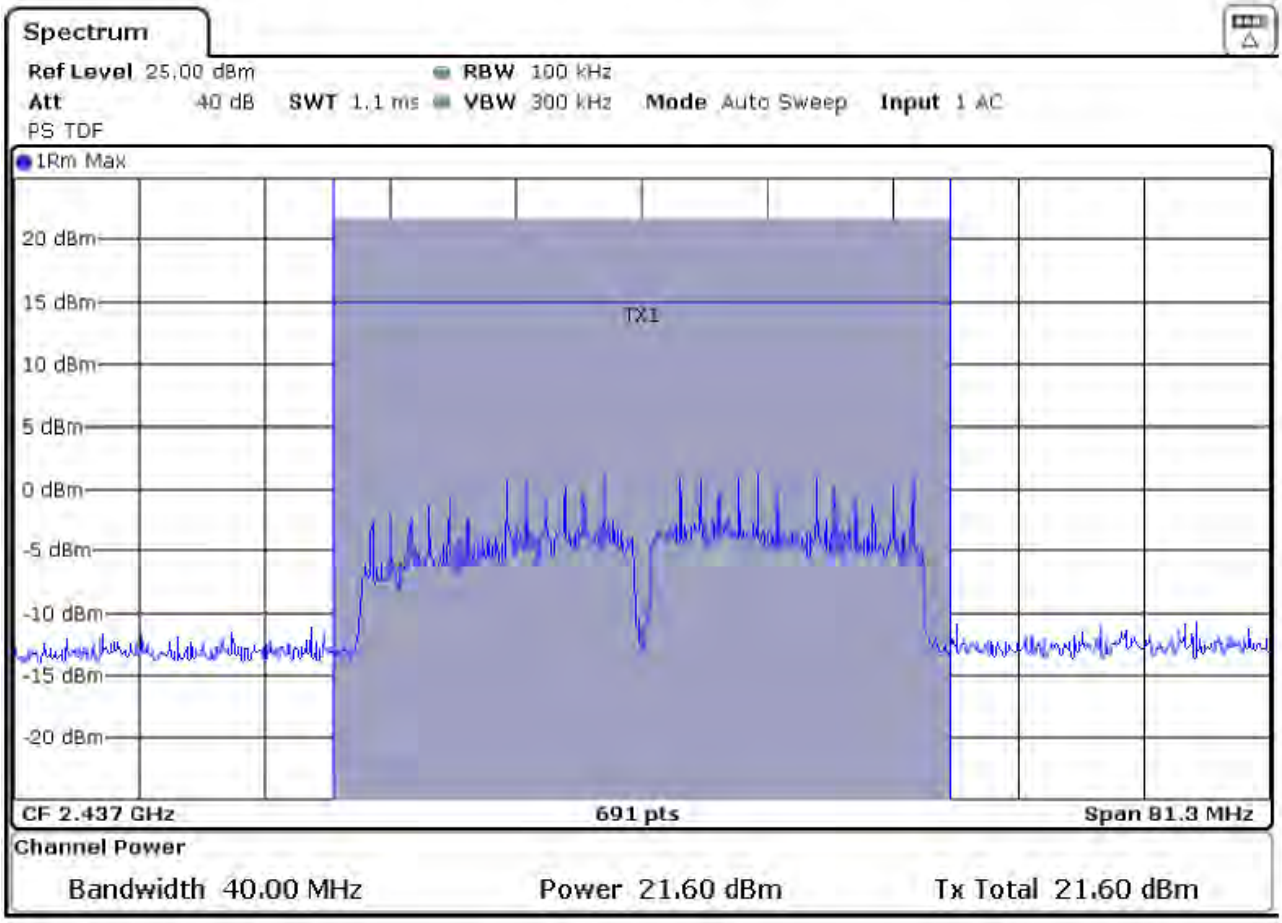
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 40 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	21,60	8,40	30,00	**pass**

TESTED IN GERMANY

FCC 1

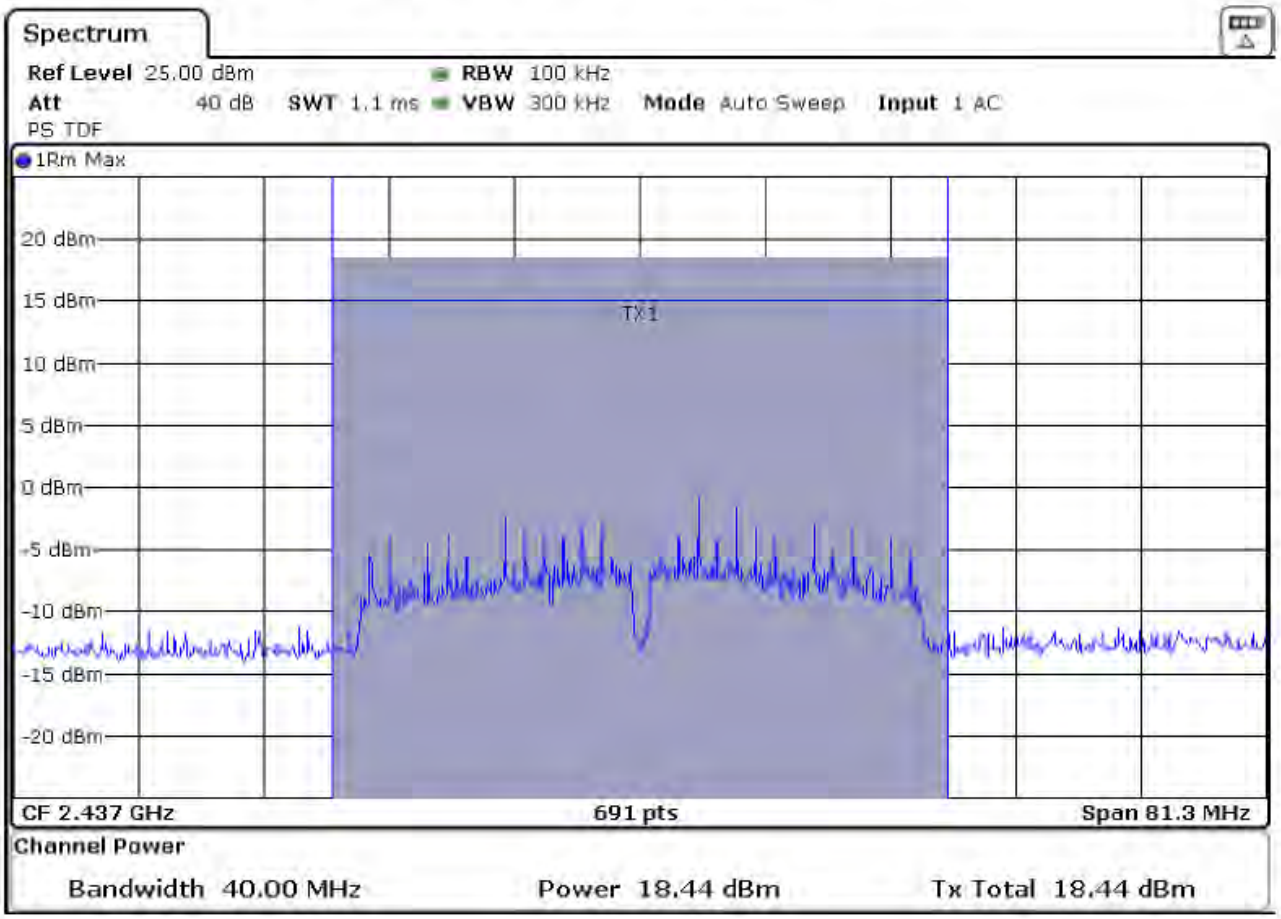
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.6, HT: Greenfield, BW = 40 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	18,44	11,56	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2437	17,23	30,00	pass
Position: X	H	2437	21,52	30,00	pass
Position: Y	V	2437	20,28	30,00	pass
Position: Y	H	2437	18,54	30,00	pass
Position: Z	V	2437	21,60	30,00	pass
Position: Z	H	2437	18,44	30,00	pass

Highest operating frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX1 / ext. Antenna typ 1

TESTED IN GERMANY

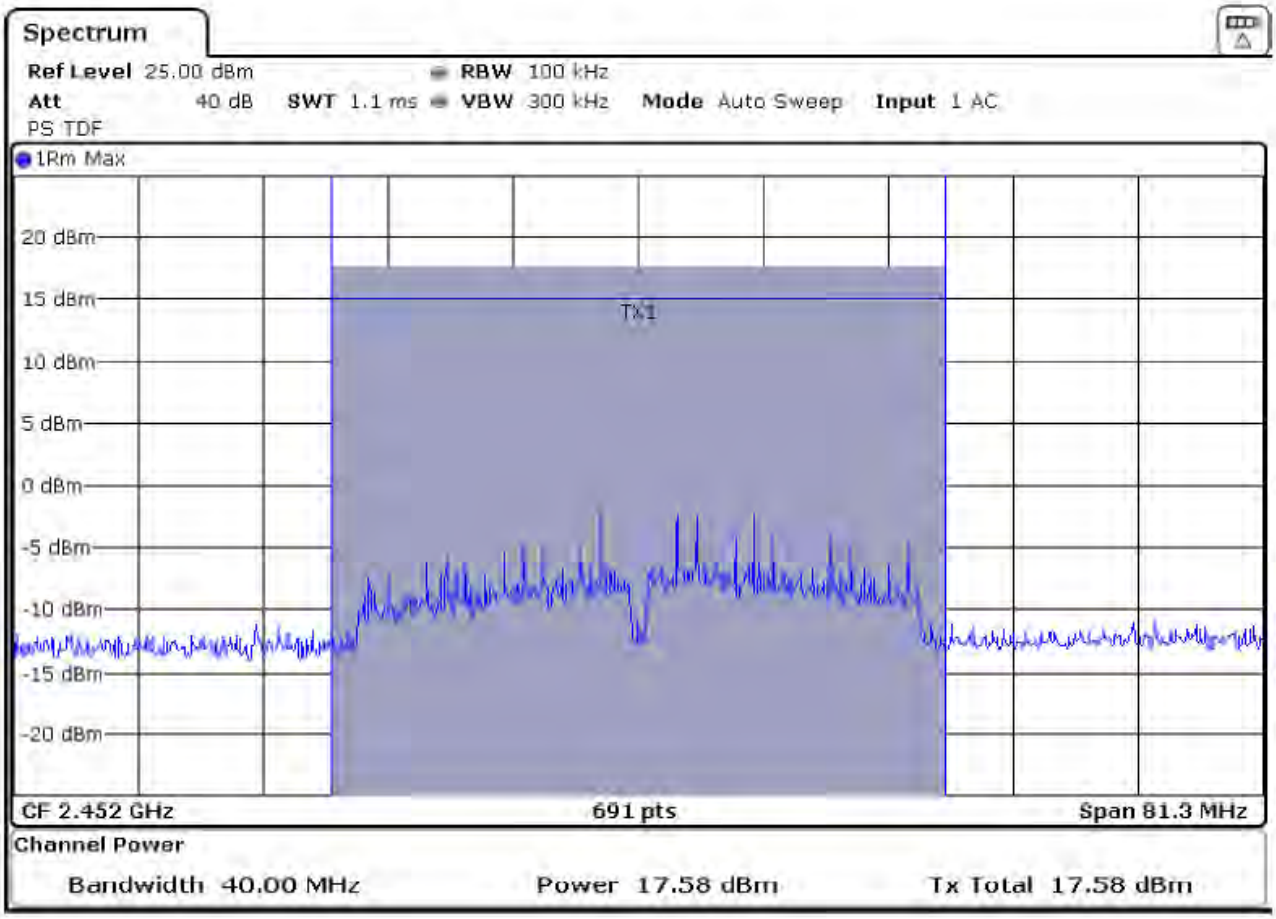
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.9, HT: Greenfield, BW = 40 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2452	17,58	12,42	30,00	**pass**

TESTED IN GERMANY

FCC 1

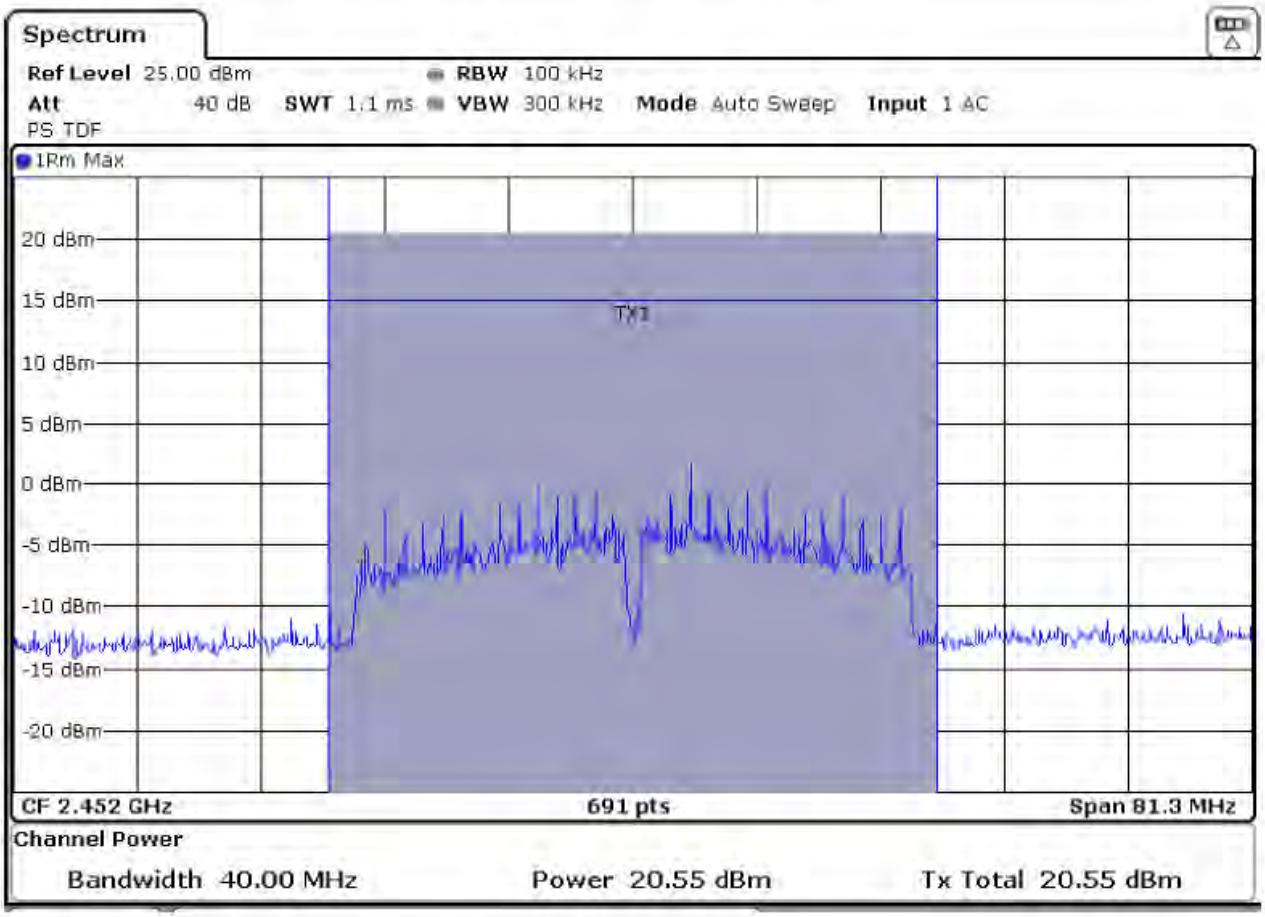
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.9, HT: Greenfield, BW = 40 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2452	20,55	9,45	30,00	**pass**

TESTED IN GERMANY

FCC 1

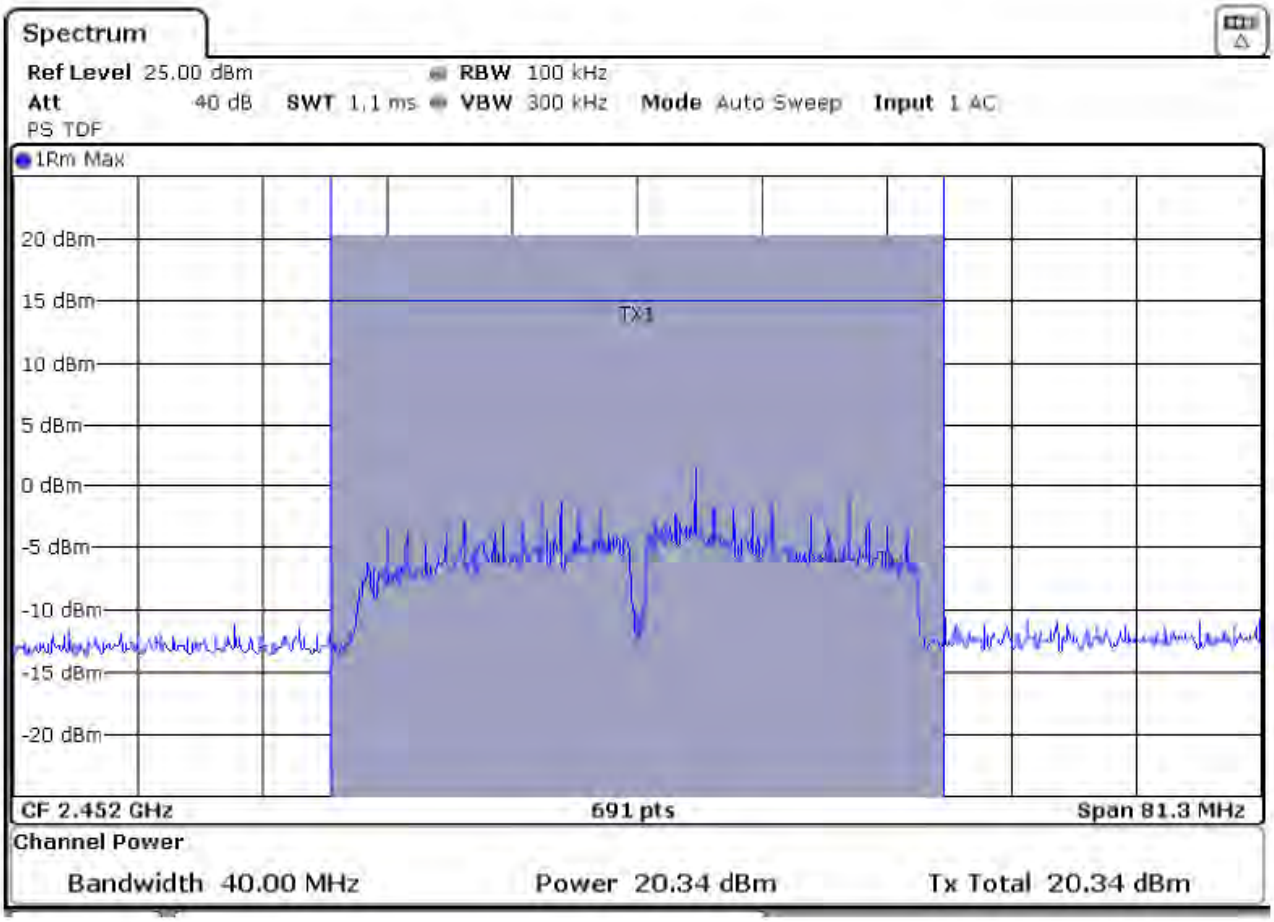
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.9, HT: Greenfield, BW = 40 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2452	20,34	9,66	30,00	**pass**

TESTED IN GERMANY

FCC 1

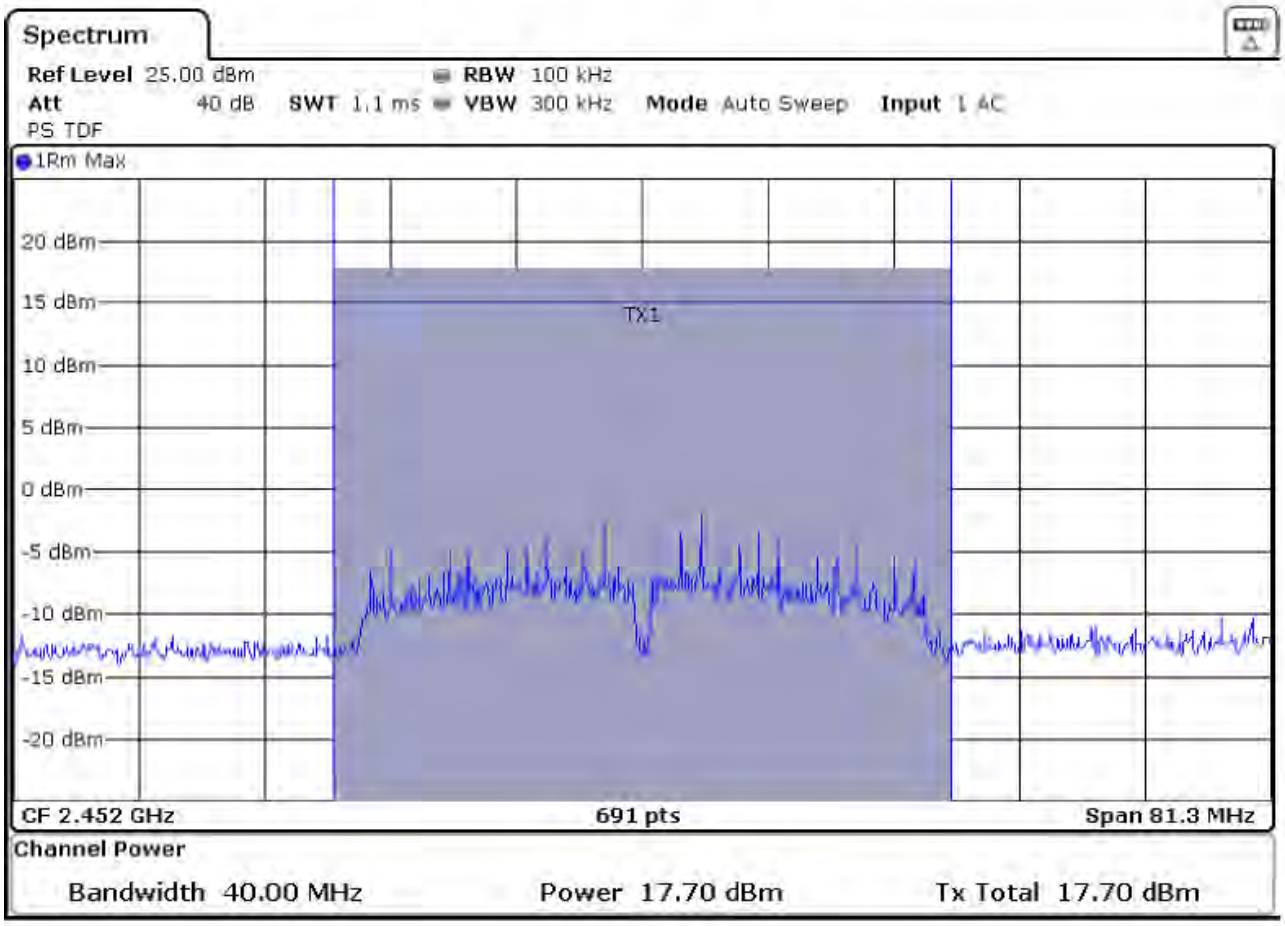
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.9, HT: Greenfield, BW = 40 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2452	17,70	12,20	30,00	**pass**

TESTED IN GERMANY

FCC 1

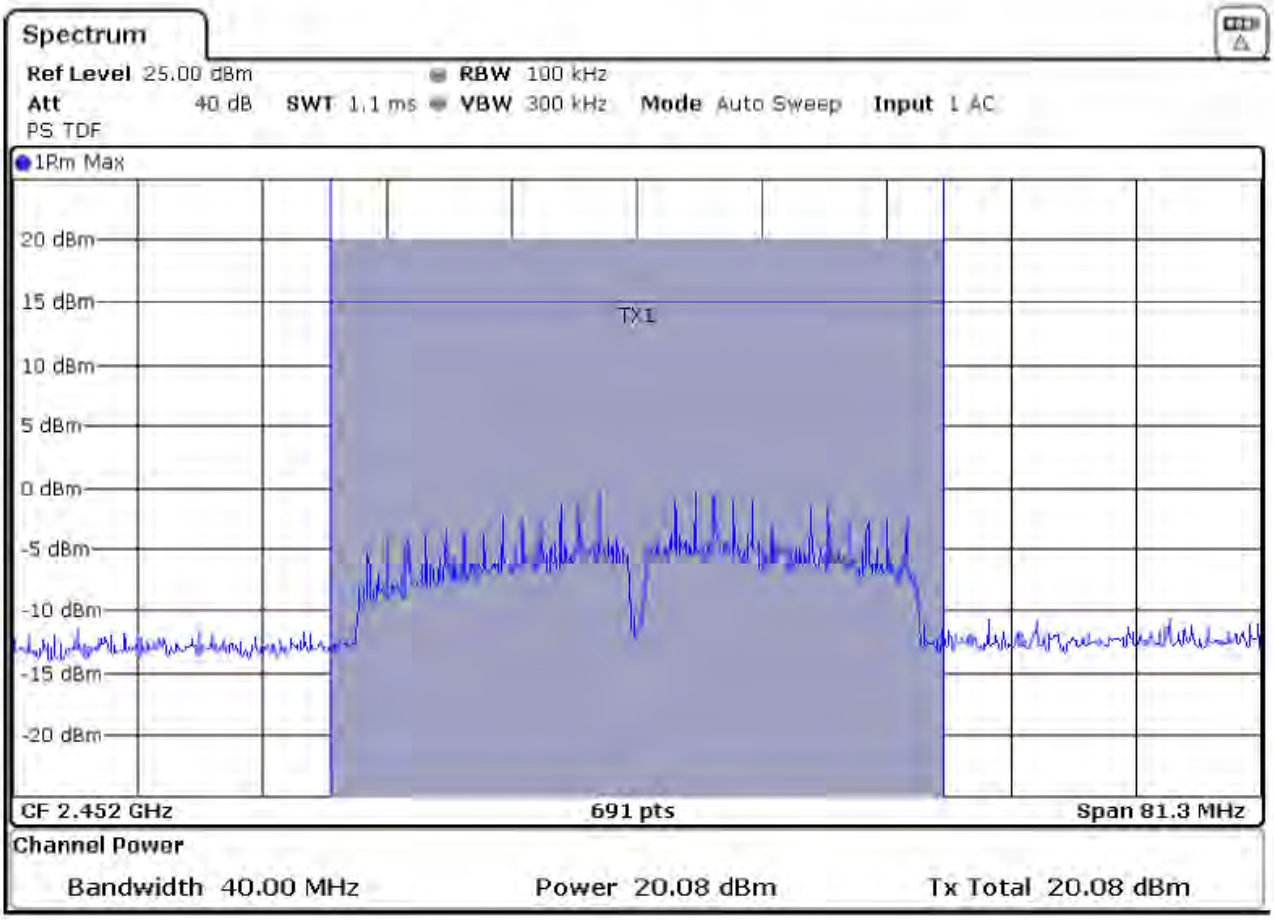
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.9, HT: Greenfield, BW = 40 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2452	20,08	9,92	30,00	**pass**

TESTED IN GERMANY

FCC 1

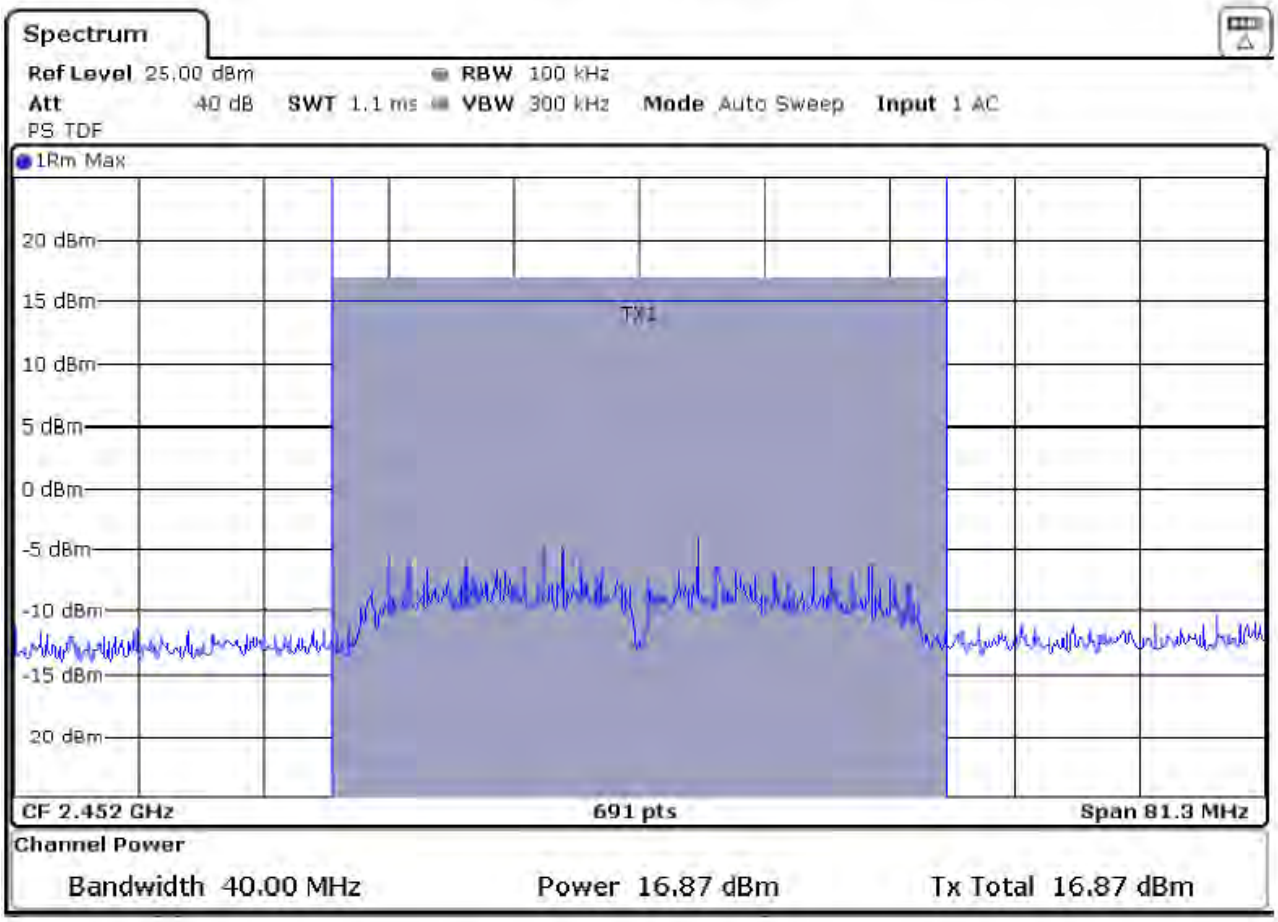
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.9, HT: Greenfield, BW = 40 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2452	16,87	13,13	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2452	17,58	30,00	pass
Position: X	H	2452	20,55	30,00	pass
Position: Y	V	2452	20,34	30,00	pass
Position: Y	H	2452	17,70	30,00	pass
Position: Z	V	2452	20,08	30,00	pass
Position: Z	H	2452	16,87	30,00	pass

Maximum output power radiated measurement:
802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX1 / ext. Antenna typ 1

Channel	Frequency [MHz]	Output Power		Limit		Result
		[dBm]	[mW]	[dBm]	[mW]	
1	2422	21.39	137.72	30	1000	Pass
6	2437	21.60	144.54	30	1000	Pass
9	2452	20.55	113.50	30	1000	Pass

Lowest operating frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX0 / ext. Antenna typ 1

TESTED IN GERMANY

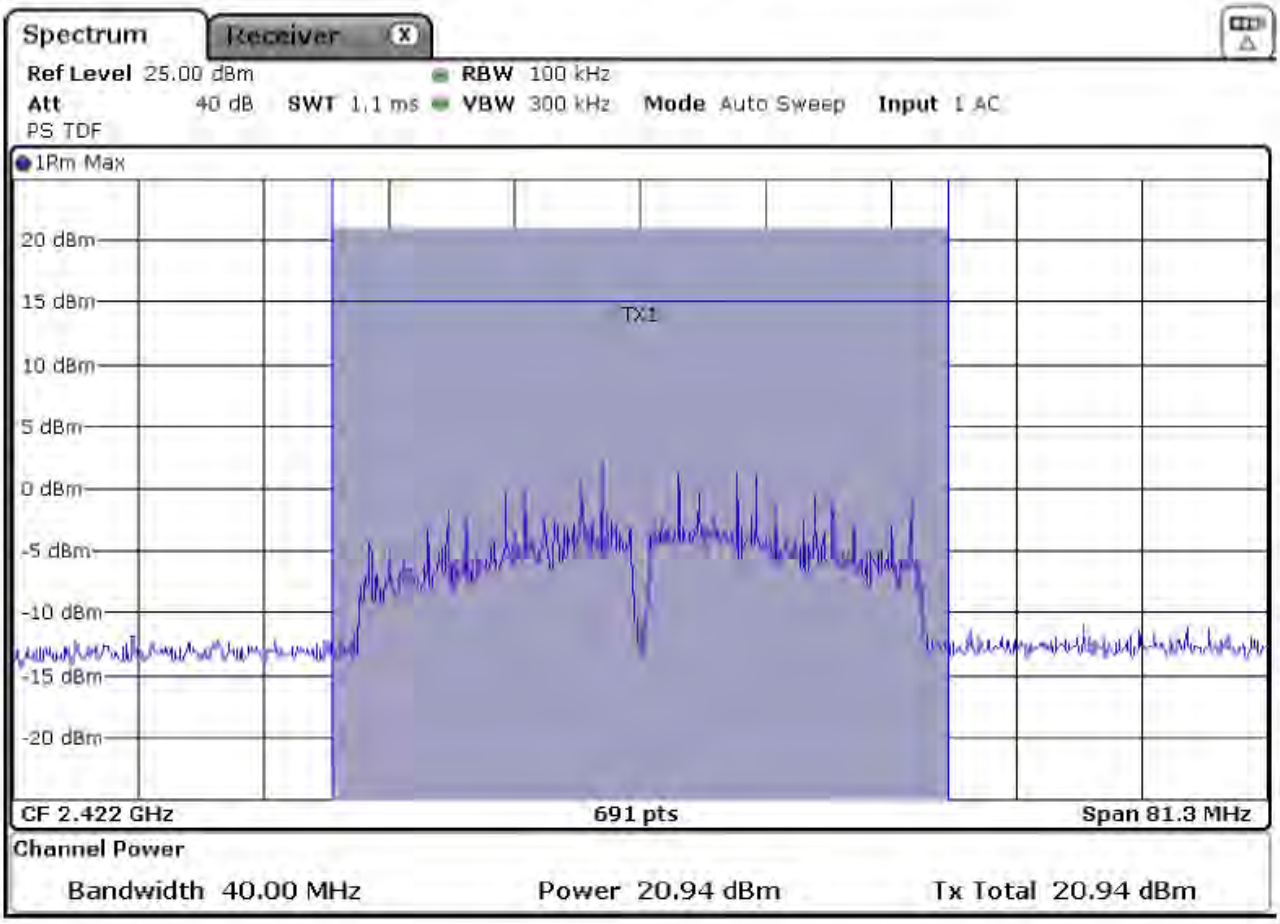
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.03, HT:Greenfield , BW = 40 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2422	20,94	9,06	30,00	**pass**

TESTED IN GERMANY

FCC 1

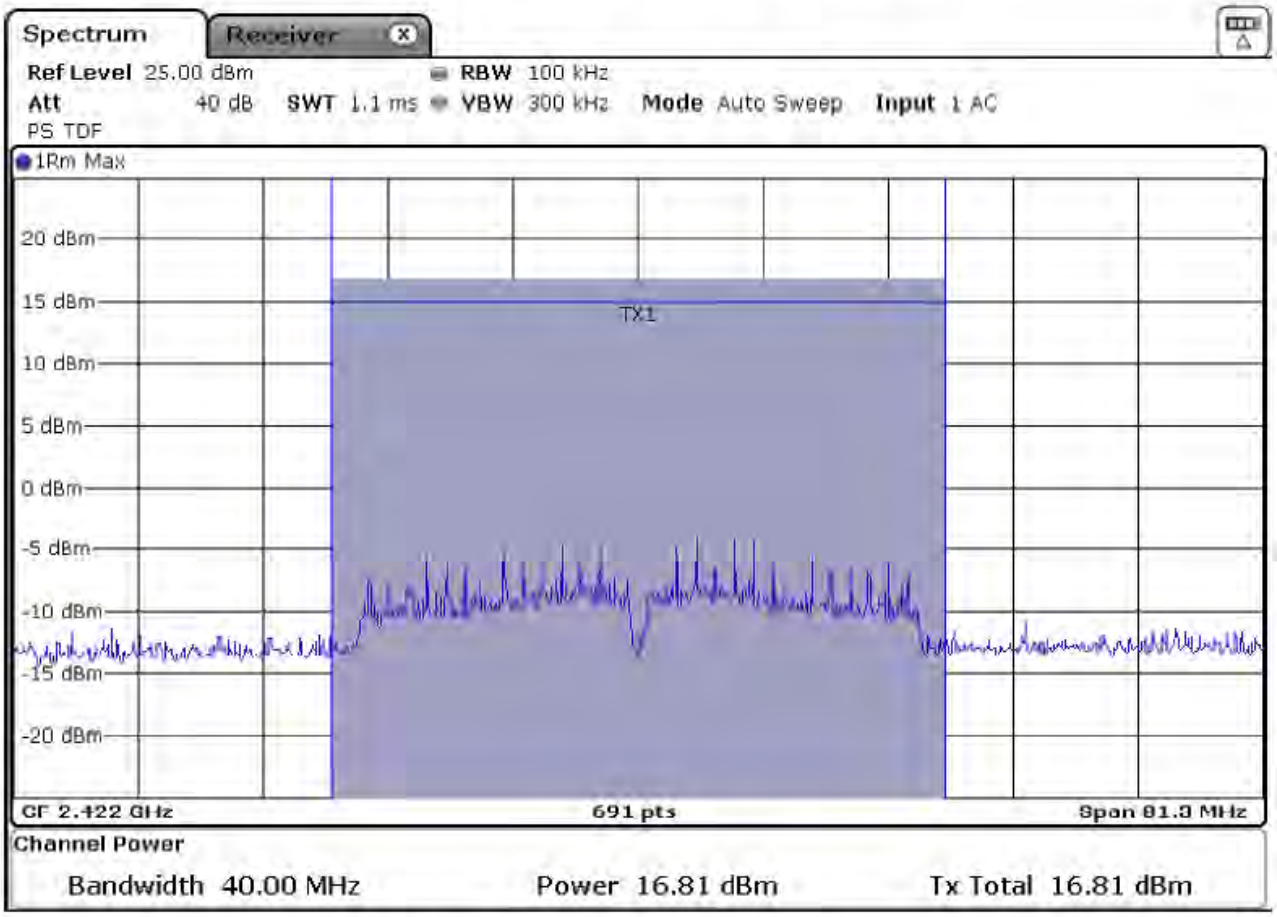
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.03, HT:Greenfield , BW = 40 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2422	16,81	13,19	30,00	**pass**

Middle operating frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX0 / ext. Antenna typ 1

TESTED IN GERMANY

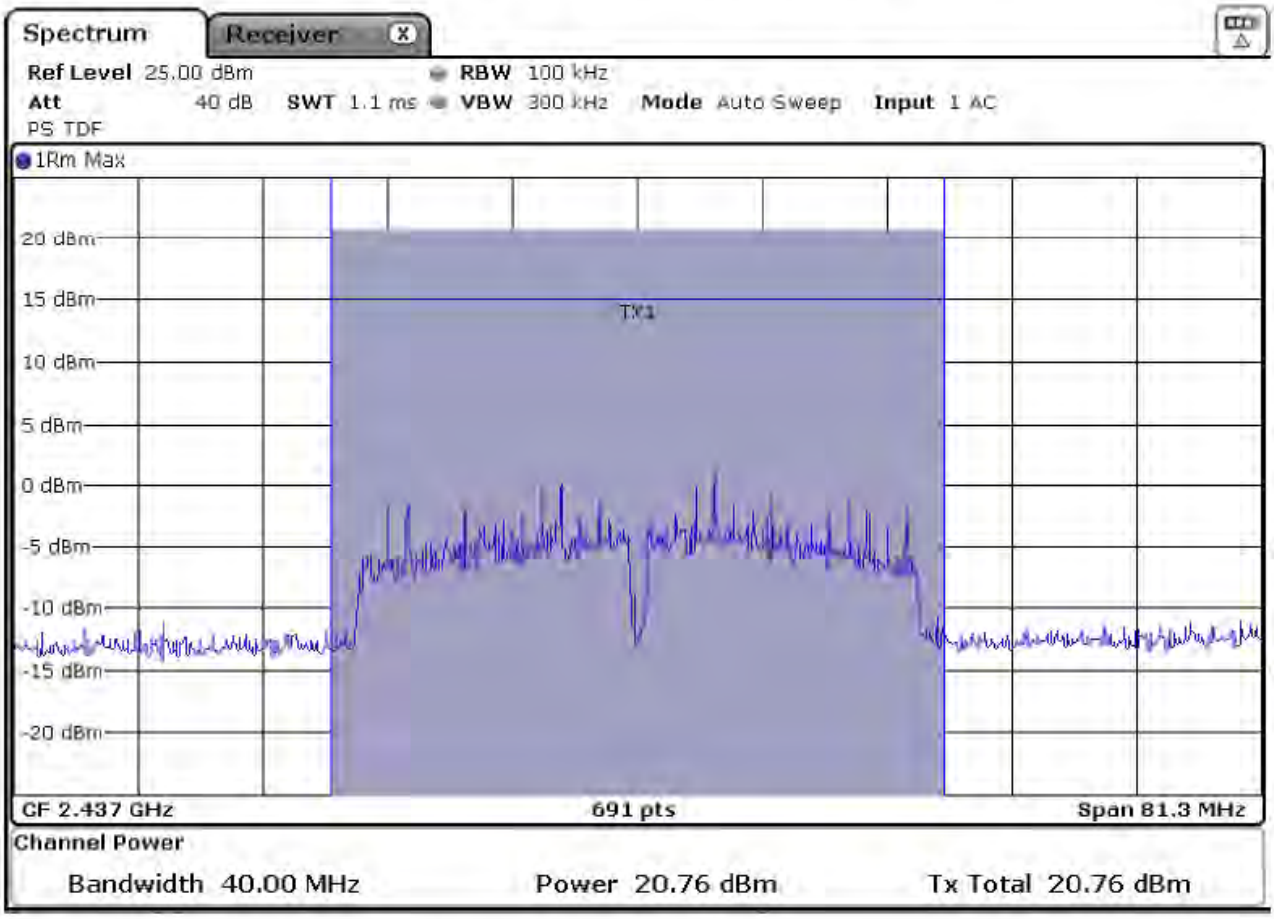
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.06, HT:Greenfield , BW = 40 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	20,76	9,24	30,00	**pass**

TESTED IN GERMANY

FCC 1

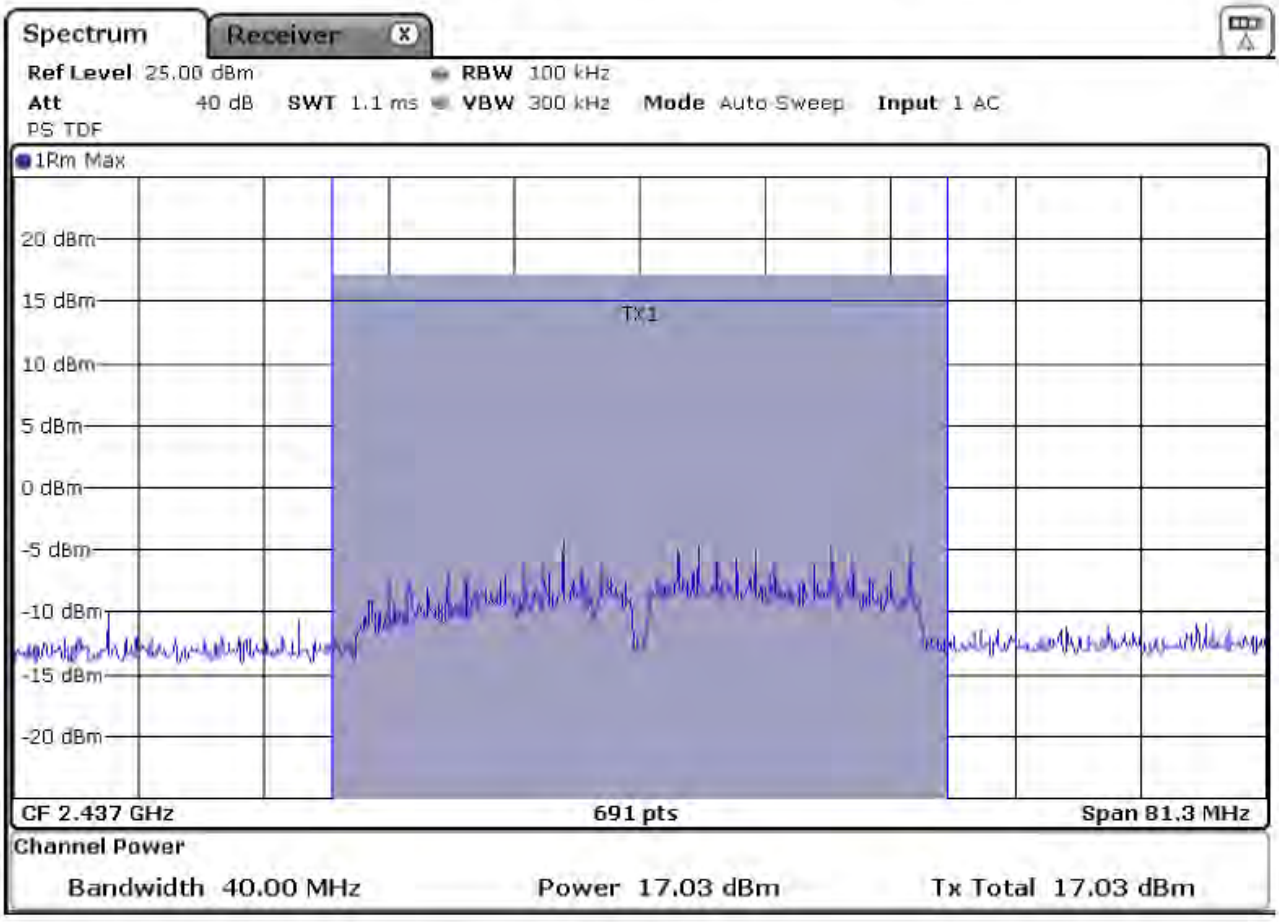
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.06, HT:Greenfield , BW = 40 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	17,03	12,97	30,00	**pass**

Highest operating frequency - 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX0 / ext. Antenna typ 1

TESTED IN GERMANY

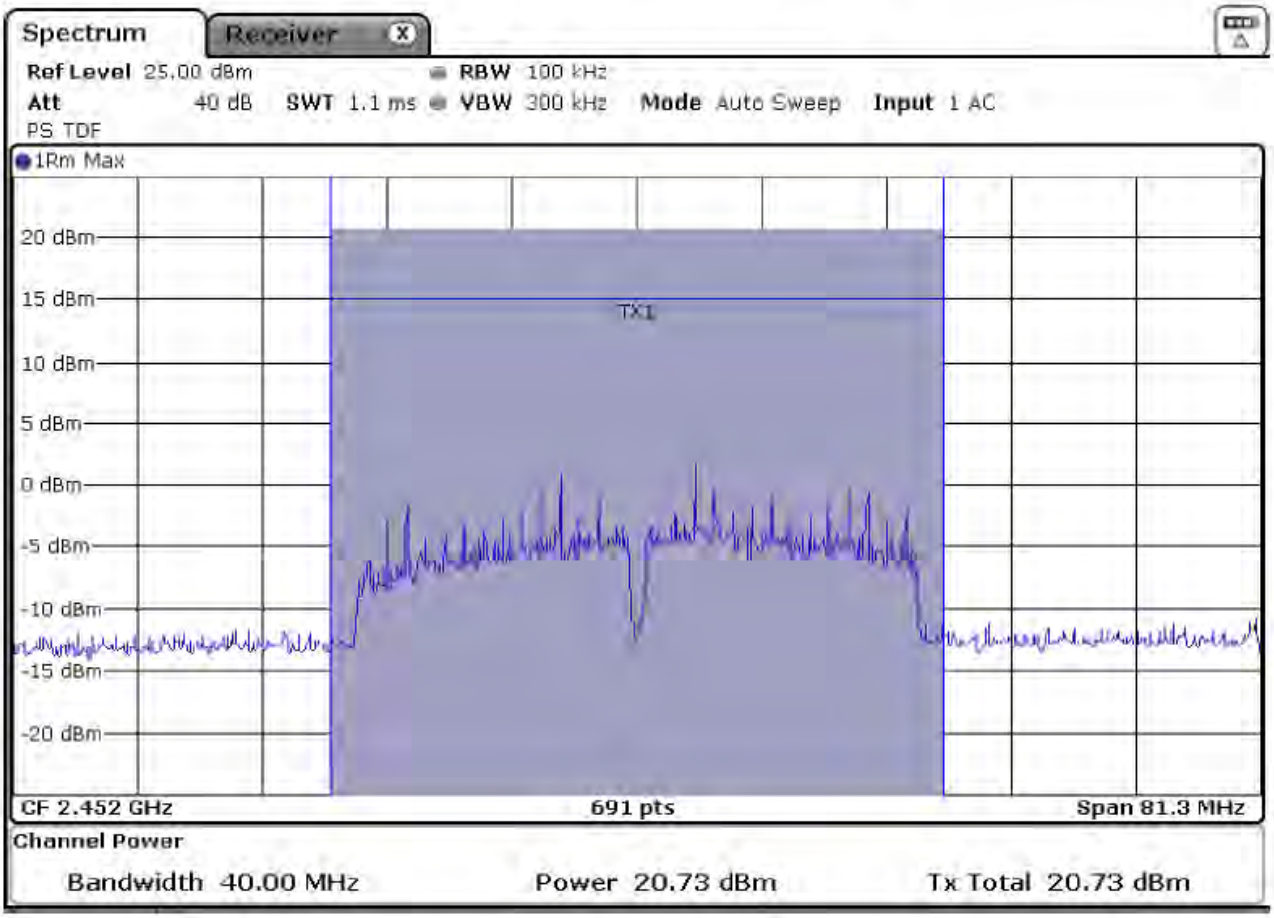
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.09, HT:Greenfield , BW = 40 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2452	20,73	9,27	30,00	**pass**

TESTED IN GERMANY

FCC 1

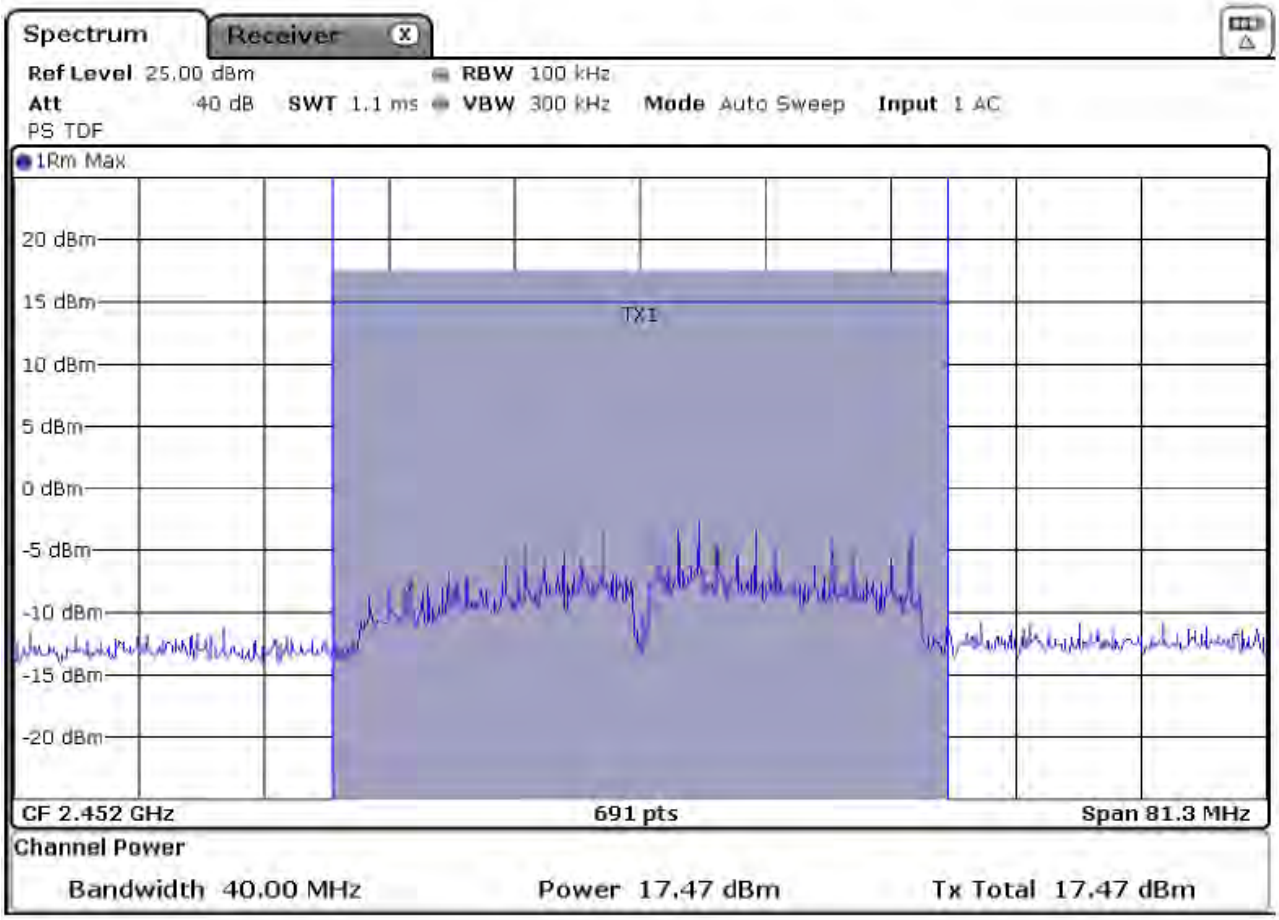
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11n, CH.09, HT:Greenfield , BW = 40 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2452	17,47	12,53	30,00	**pass**

Maximum output power radiated measurement: 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX0 / ext. Antenna typ 1						
Channel	Frequency [MHz]	Output Power		Limit		Result
		[dBm]	[mW]	[dBm]	[mW]	
1	2422	20.94	124.17	30	1000	Pass
6	2437	20.76	119.12	30	1000	Pass
9	2452	20.73	118.30	30	1000	Pass

Maximum output power conducted measurement: 802.11n 40MHz / HT MixMode – MCS=0; 6.5 MBps / TX/RX0 + TX/RX1 / external Antenna typ 1								
Channel	Frequency [MHz]	Output TX/RX0 [mW]	Output TX/RX1 [mW]	Total Output Power		Limit		Result
				[dBm]	[mW]	[dBm]	[mW]	
1	2422	124.17	137.72	24.18	261.89	30	1000	Pass
6	2437	119.12	144.54	24.21	263.66	30	1000	Pass
9	2452	118.30	113.50	23.65	231.80	30	1000	Pass
According to KDB 662911 D01								

Lowest operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX0 / ext. Antenna typ 2

TESTED IN GERMANY

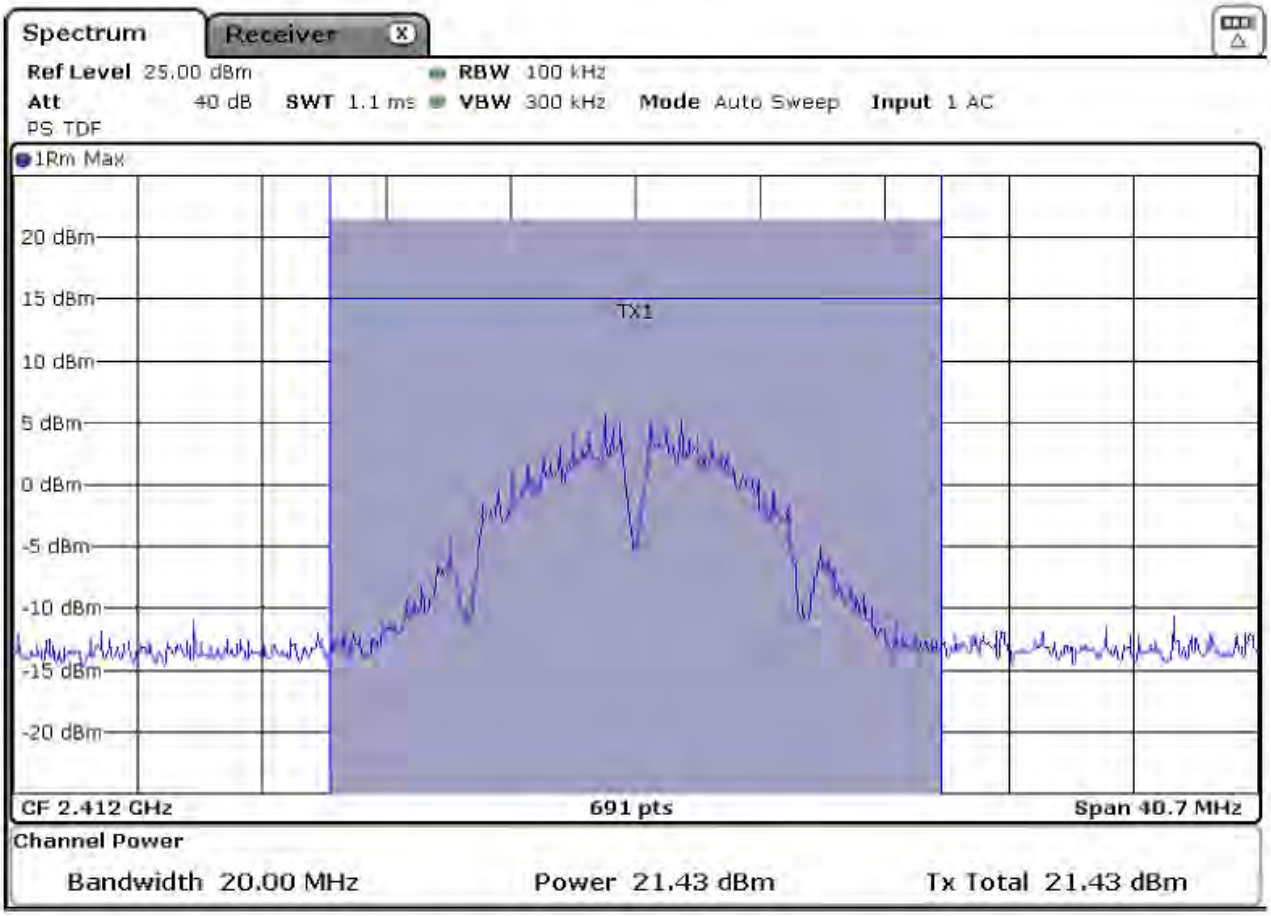
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.:	20/01-0031			
Product:	Transmitting / Receiving System			
Sample:	01			
Date:	02.08.2021			
Operator:	Ro		pass	fail
Remarks:	Antenna 2 (Taoglas WS.01.B.305151), Power setting 1C, Tx/Rx0	Result:	☒	☐

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	21,43	8,57	30,00	**pass**

TESTED IN GERMANY

FCC 1

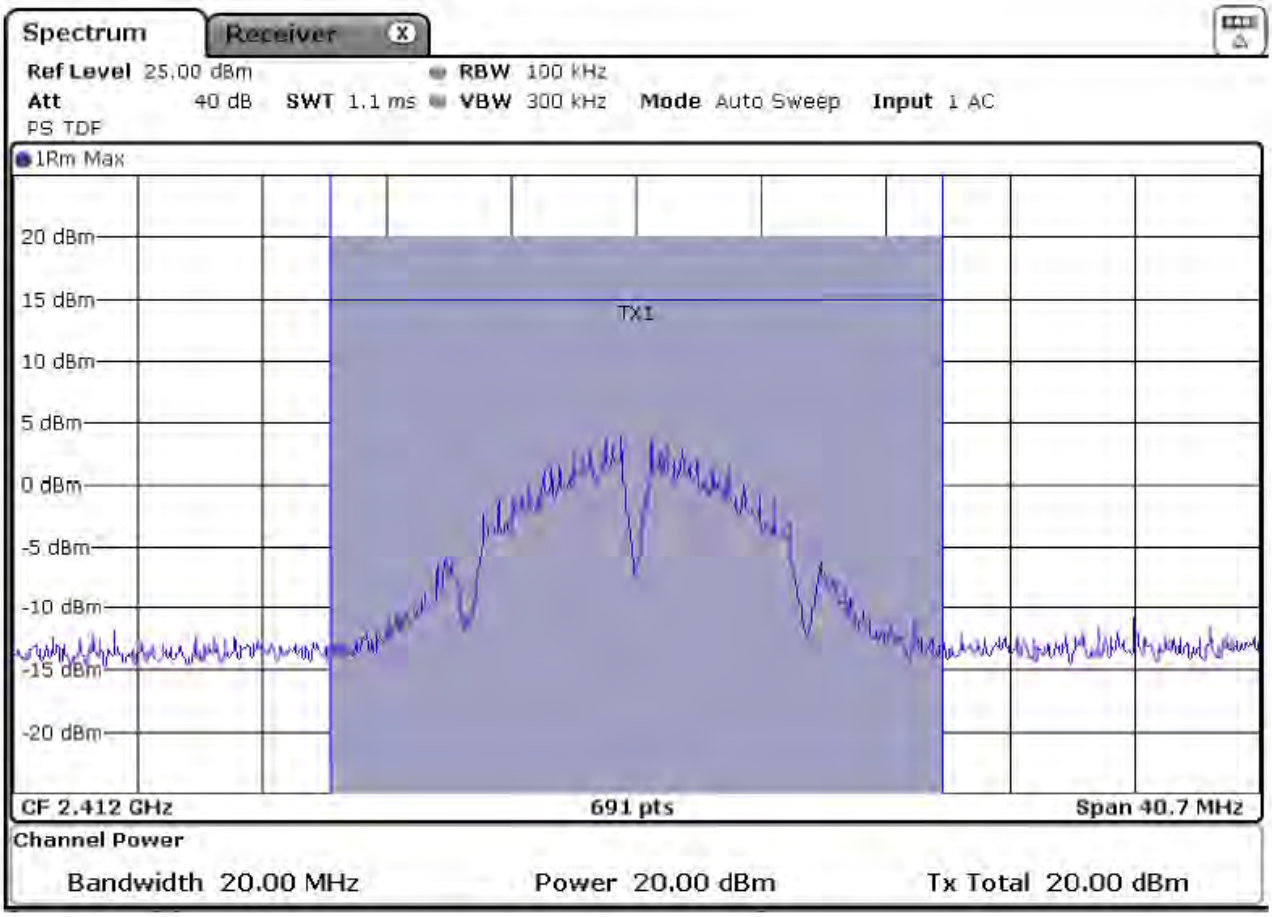
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	20,00	10,00	30,00	**pass**

Middle operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX0 / ext. Antenna typ 2

TESTED IN GERMANY

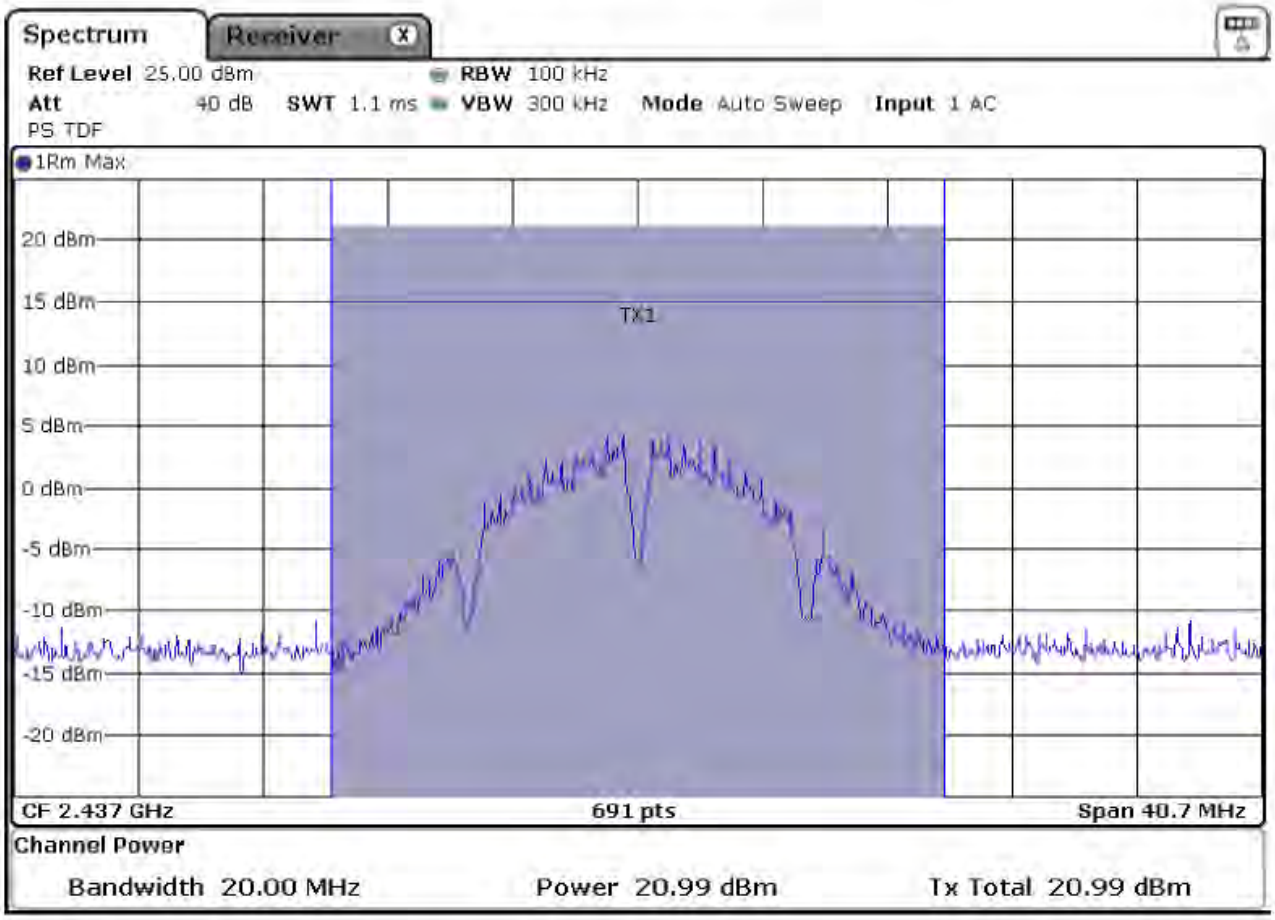
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	20,99	9,99	30,00	**pass**

TESTED IN GERMANY

FCC 1

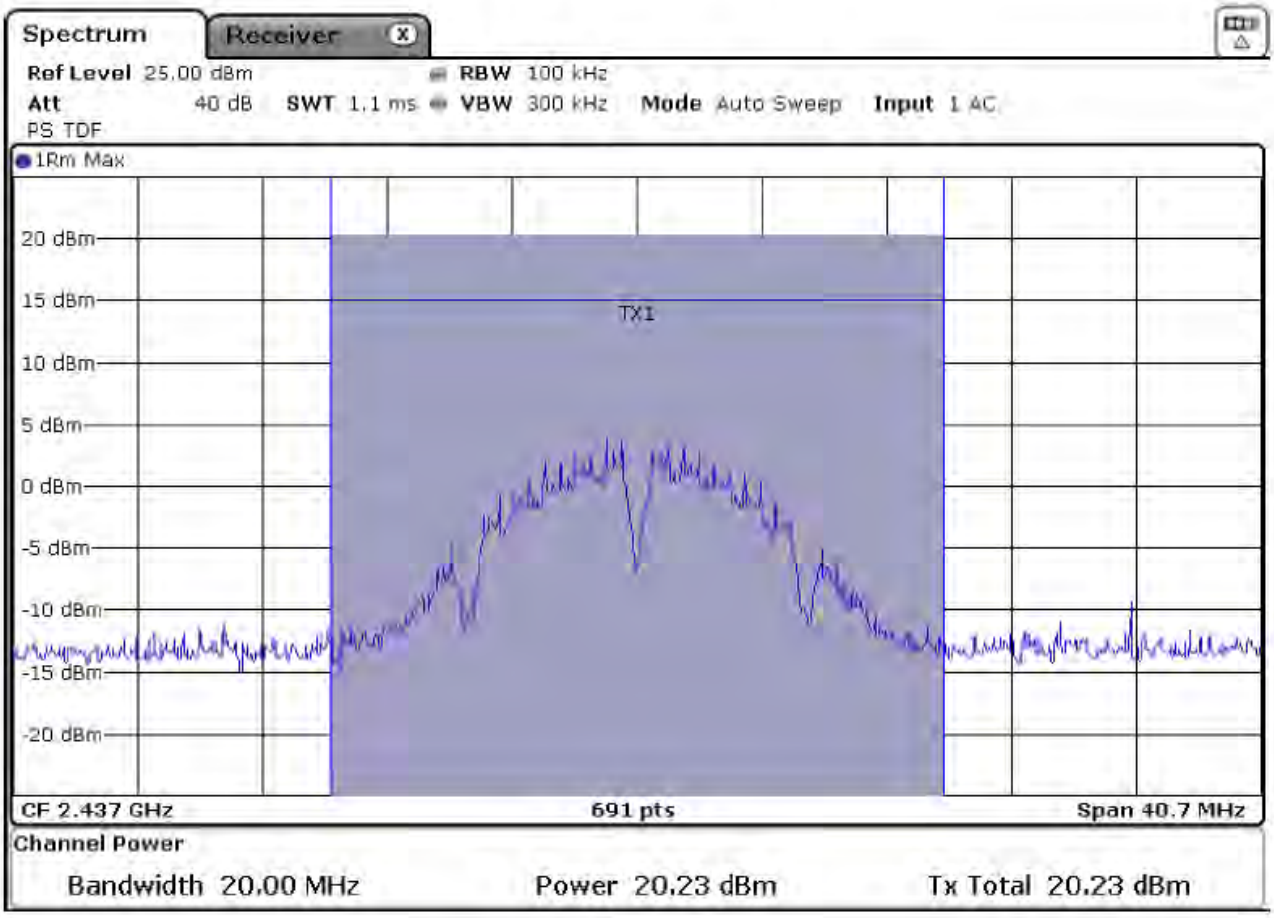
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	20,23	9,77	30,00	**pass**

Highest operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX0 / ext. Antenna typ 2

TESTED IN GERMANY

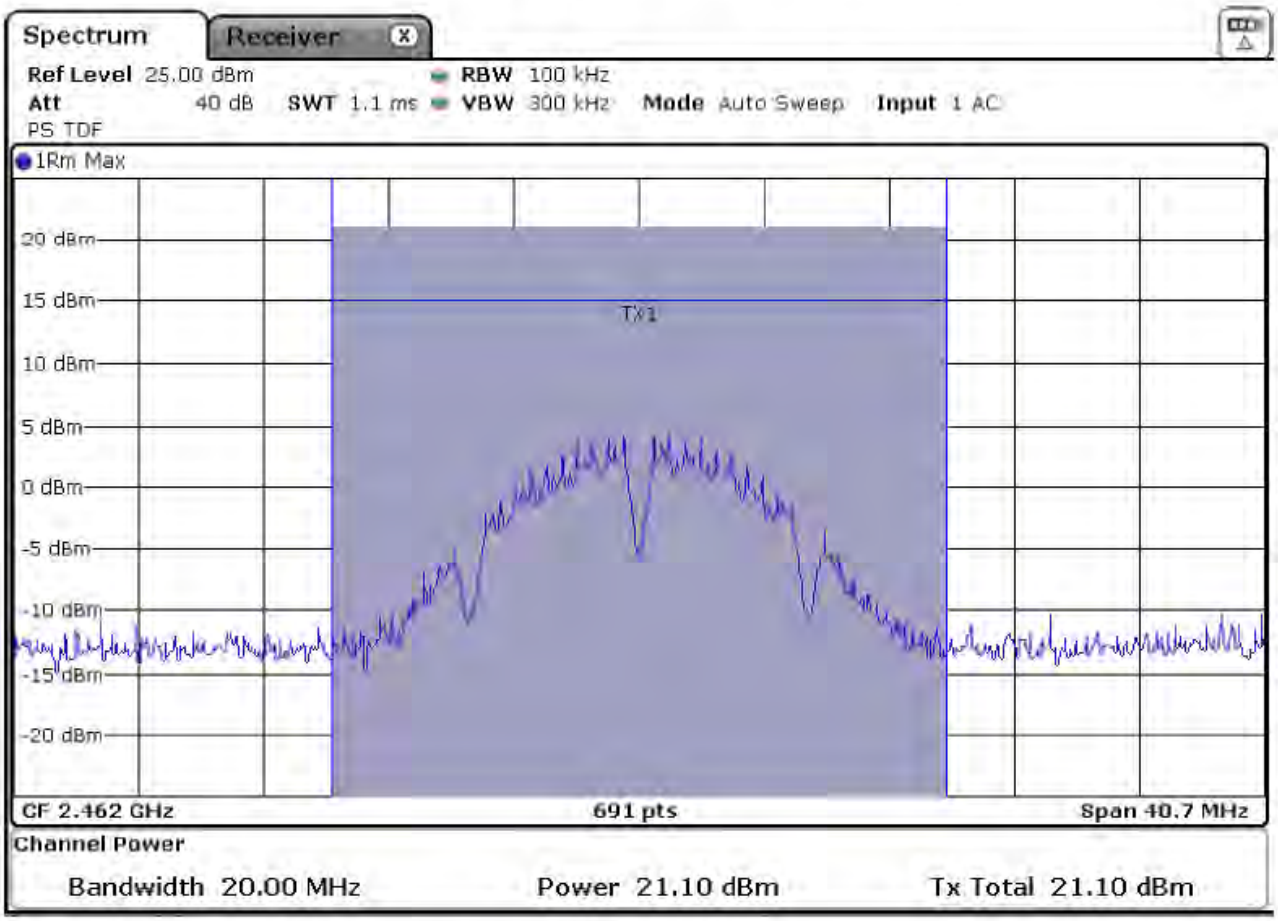
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.11, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2462	21,10	8,90	30,00	**pass**

TESTED IN GERMANY

FCC 1

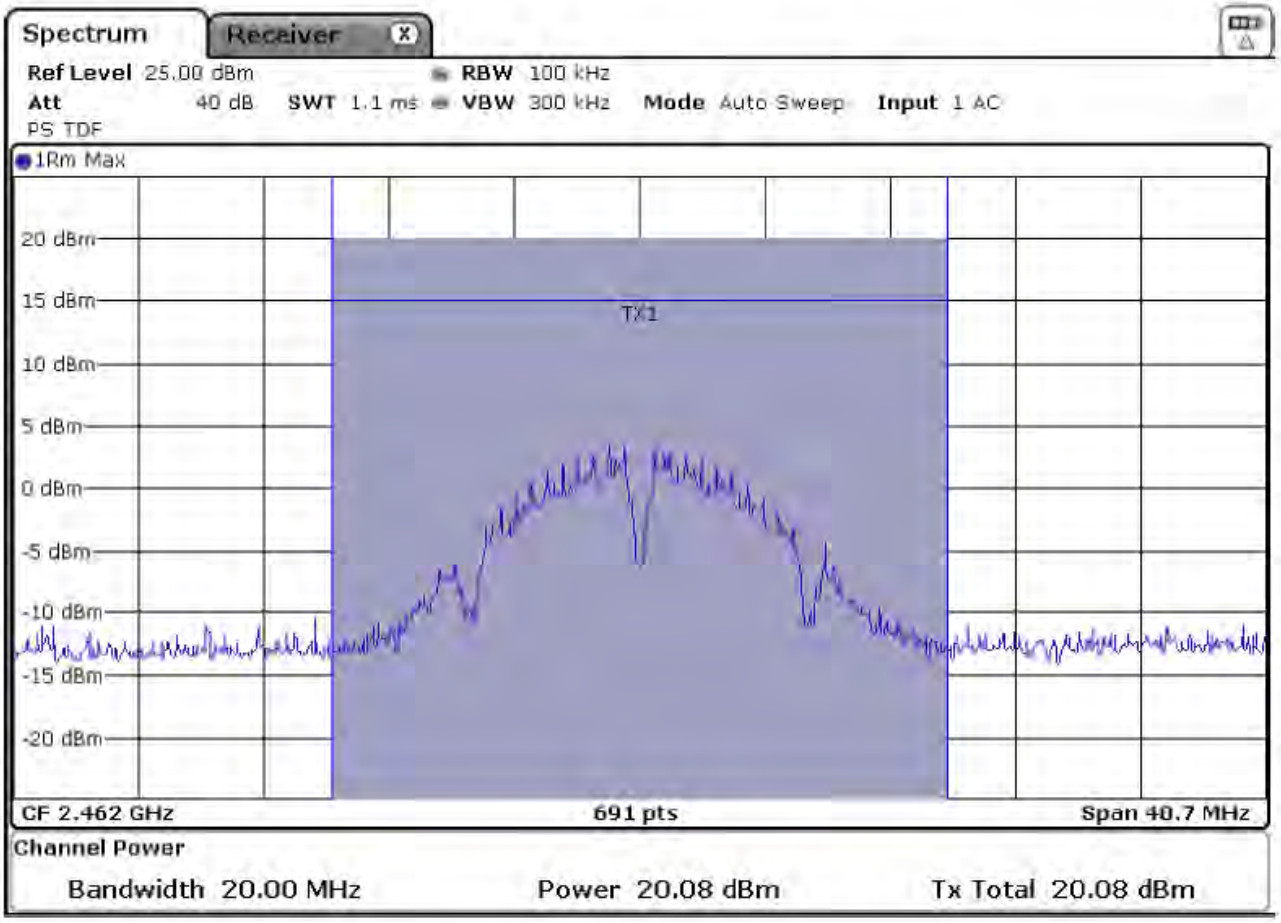
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.11, CCK, BW = 20 MHz



Position: X/Y/Z / Polarisation: H

Frequ. [MHz]	Level [dBm]	Margin to Limit [dB]	Limit [dBm]	Result
2462	20,08	9,92	30,00	pass

Maximum output power radiated measurement: 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX0 / external Antenna typ 2						
Channel	**Frequency [MHz]**	**Output Power**		**Limit**		**Result**
		[dBm]	**[mW]**	**[dBm]**	**[mW]**	
1	**2412**	**21.43**	**139.00**	**30**	**1000**	**Pass**
6	**2437**	**20.99**	**125.60**	**30**	**1000**	**Pass**
11	**2462**	**21.10**	**128,82**	**30**	**1000**	**Pass**

Lowest operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX1 / ext. Antenna typ 2

TESTED IN GERMANY

FCC 1

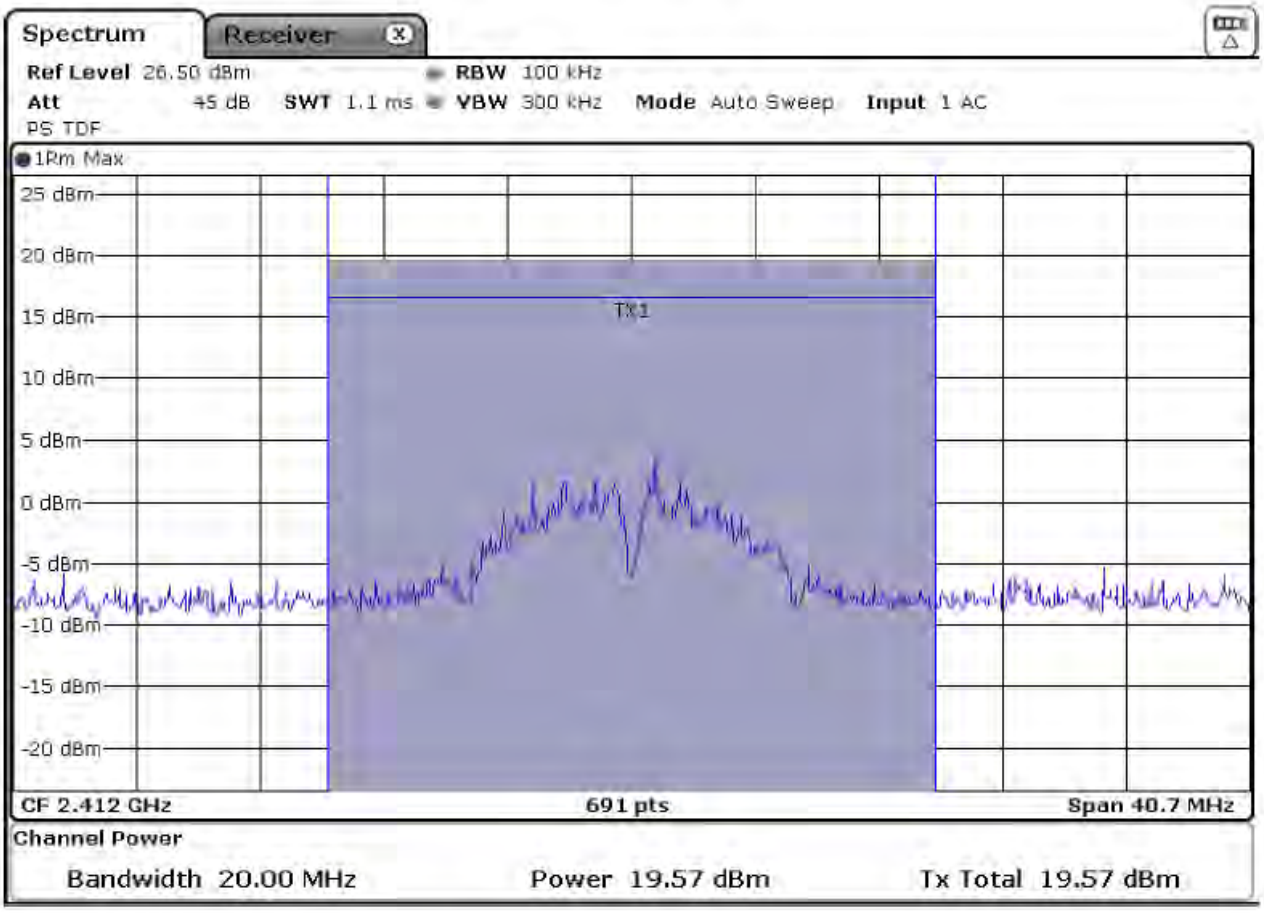
Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031
Product: Transmitting / Receiving System
Sample: 01
Date: 02.08.2021
Operator: Ro
Remarks: Antenna 2 (Taoglas WS.01.B.305151), Power setting 1C

pass ☒ fail ☐ Result:

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	19,57	10,43	30,00	**pass**

TESTED IN GERMANY

FCC 1

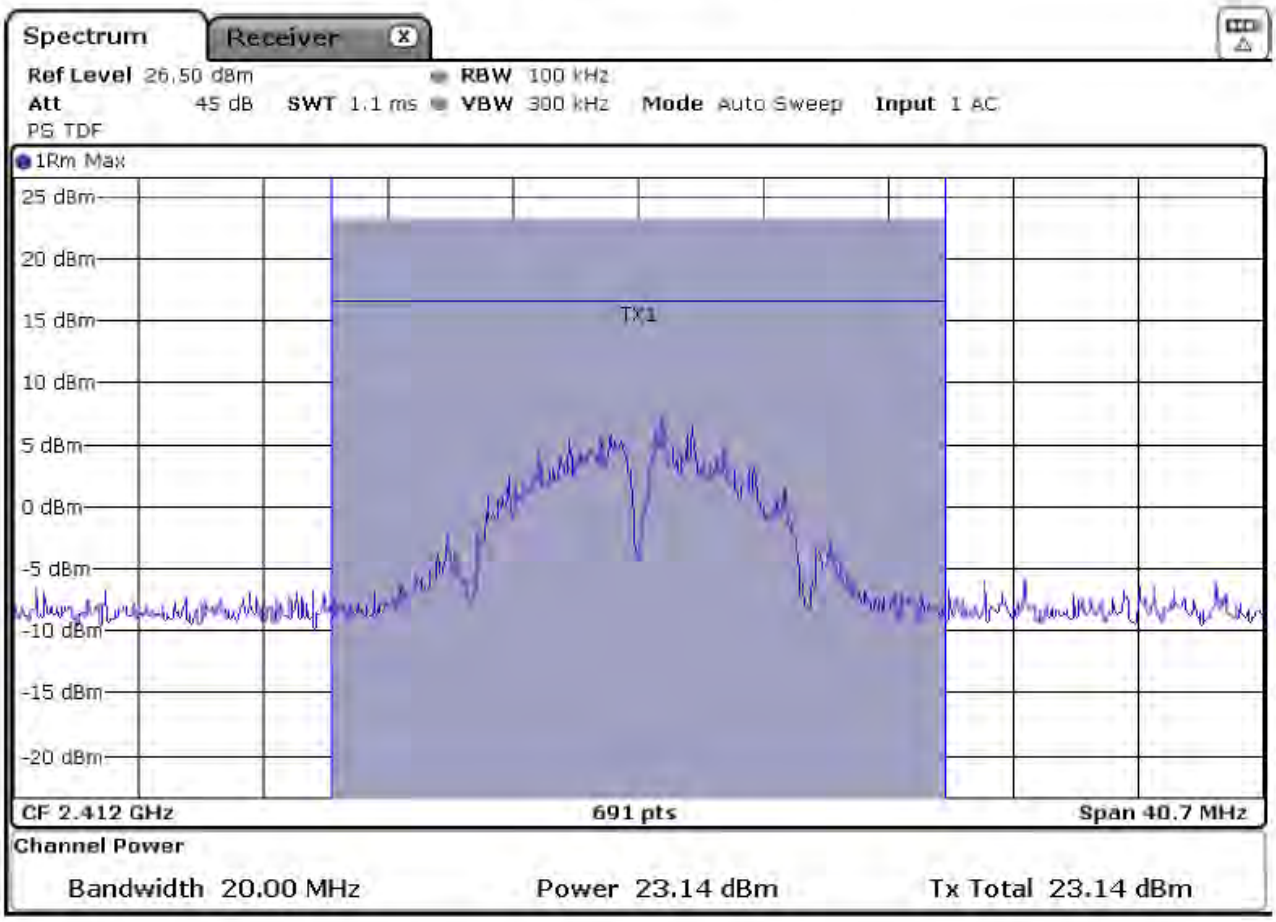
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	23,14	6,86	30,00	**pass**

TESTED IN GERMANY

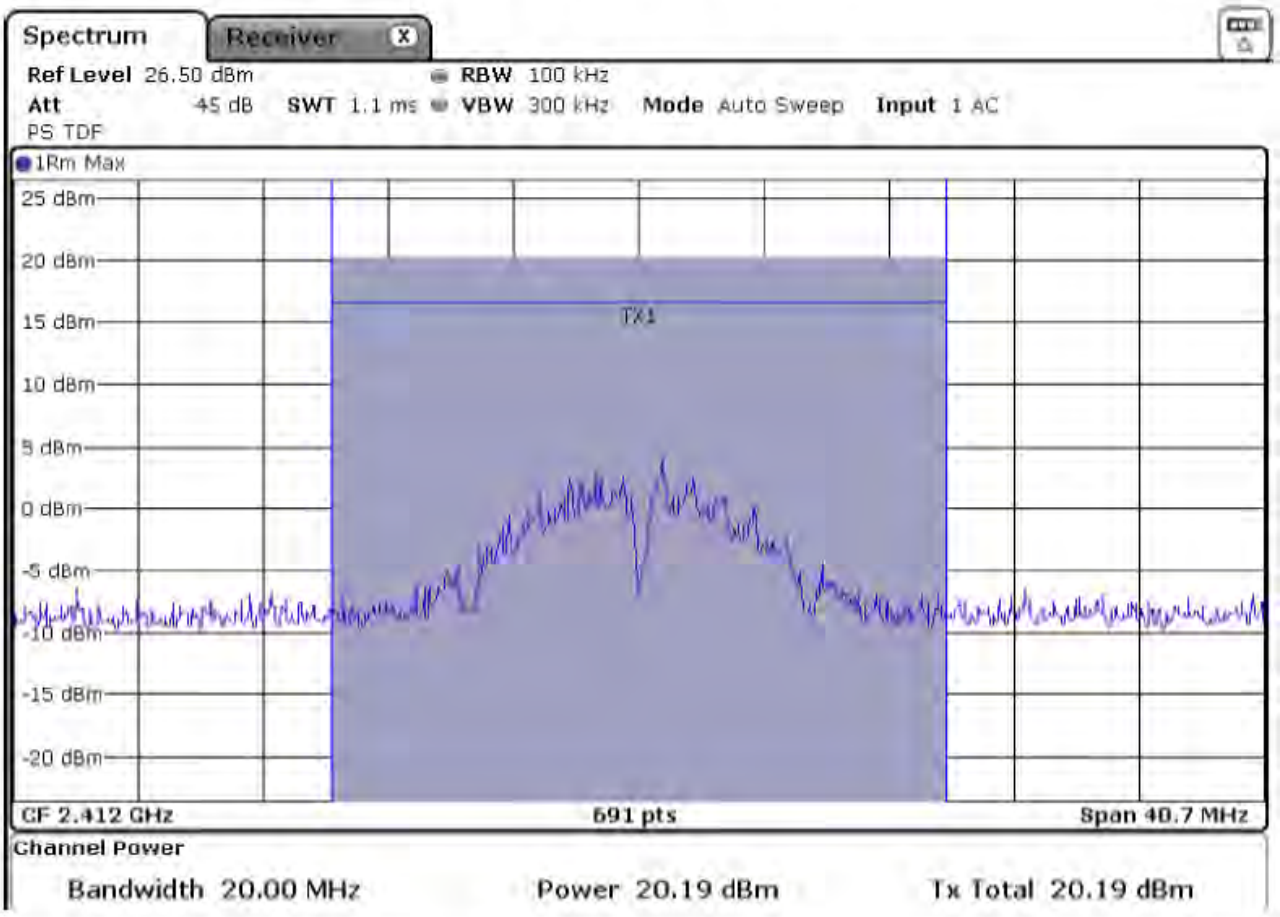
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	20,19	9,81	30,00	**pass**

TESTED IN GERMANY

FCC 1

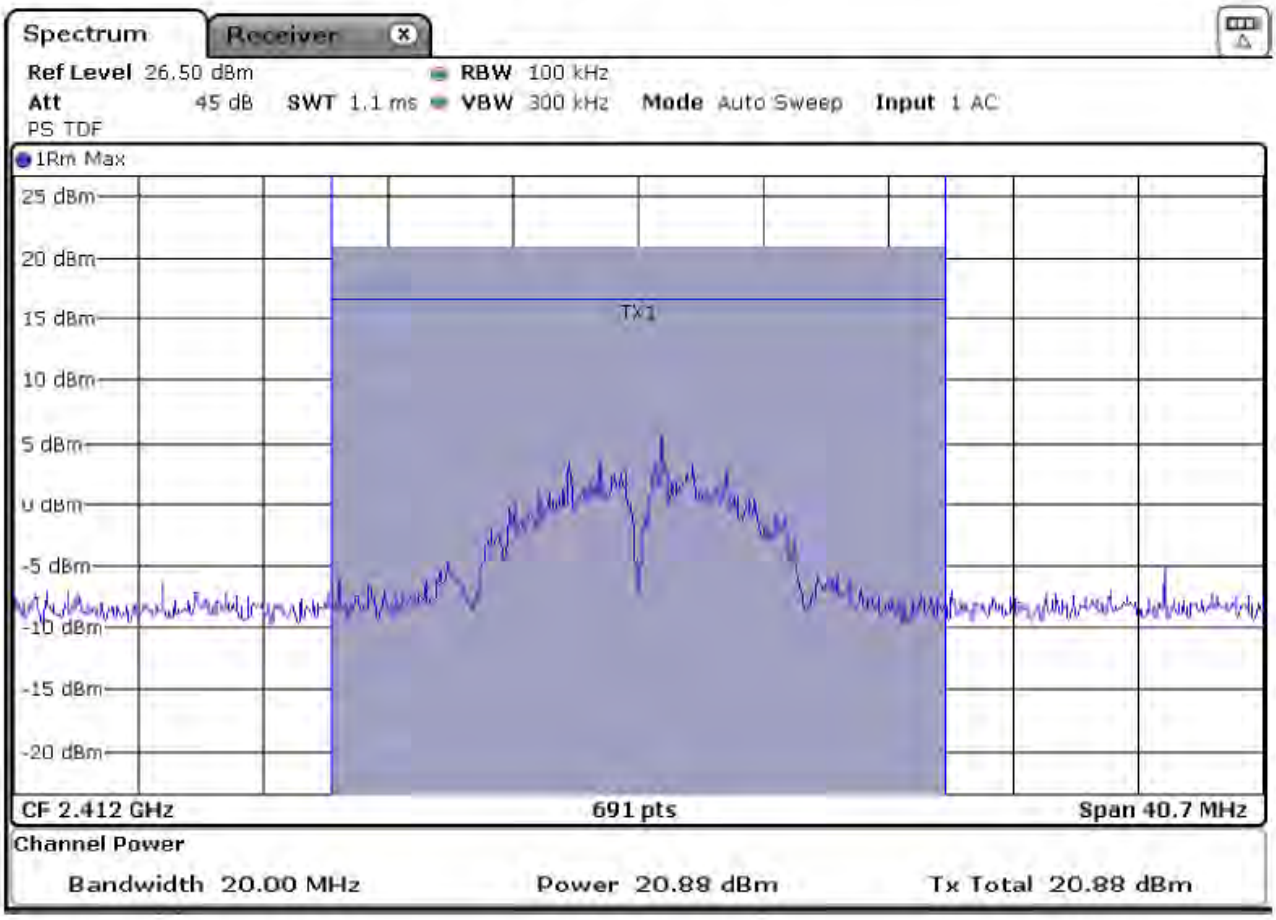
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	20,88	9,12	30,00	**pass**

TESTED IN GERMANY

FCC 1

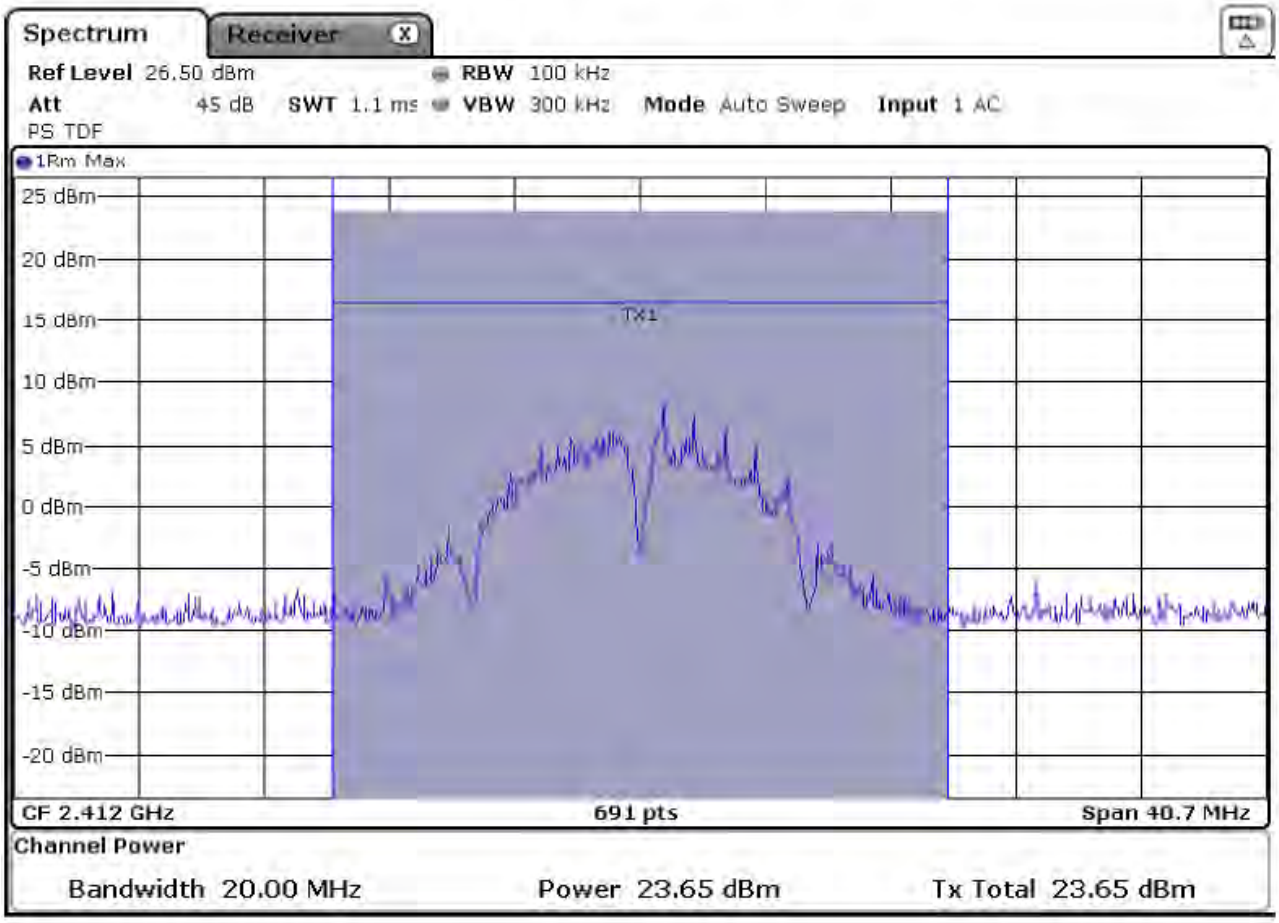
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: Z / Polarisation: V

Frequ. [MHz]	Level [dBm]	Margin to Limit [dB]	Limit [dBm]	Result
2412	23,65	6,35	30,00	pass

TESTED IN GERMANY

FCC 1

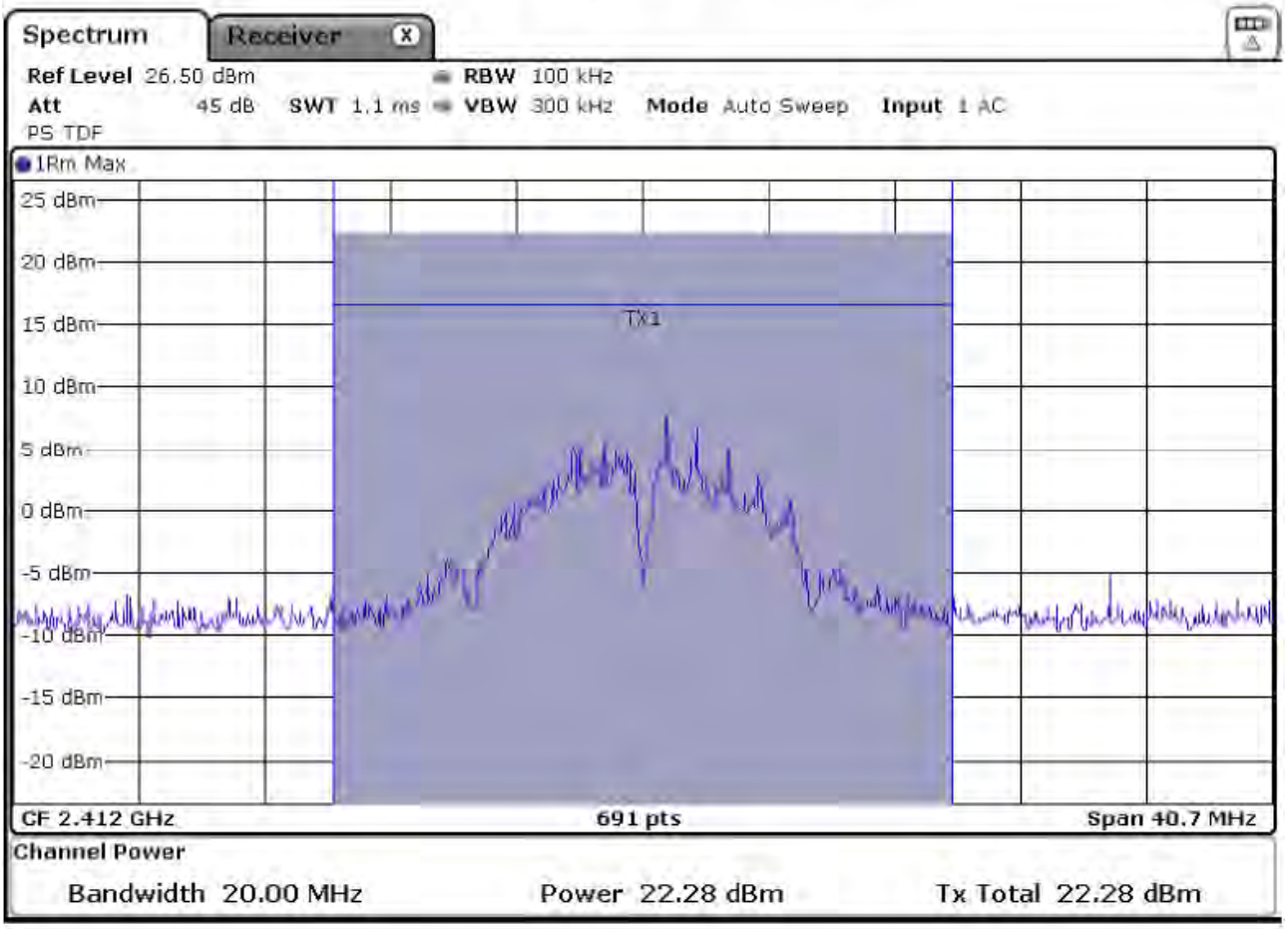
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.01, CCK, BW = 20 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2412	22,28	7,72	30,00	**pass**

TESTED IN GERMANY

FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Summery of the findings

Test conditions	Polarization of receiving antenna	Tested frequency [MHz]	Meas value [dBm]	Limit [dBm]	Result
Position: X	V	2412	19,57	30,00	pass
Position: X	H	2412	23,14	30,00	pass
Position: Y	V	2412	20,19	30,00	pass
Position: Y	H	2412	20,88	30,00	pass
Position: Z	V	2412	23,65	30,00	pass
Position: Z	H	2412	22,28	30,00	pass

Middle operating frequency - 802.11b 20MHz / CCK – MCS=0; 1 MBps / TX/RX1 / ext. Antenna typ 2

TESTED IN GERMANY

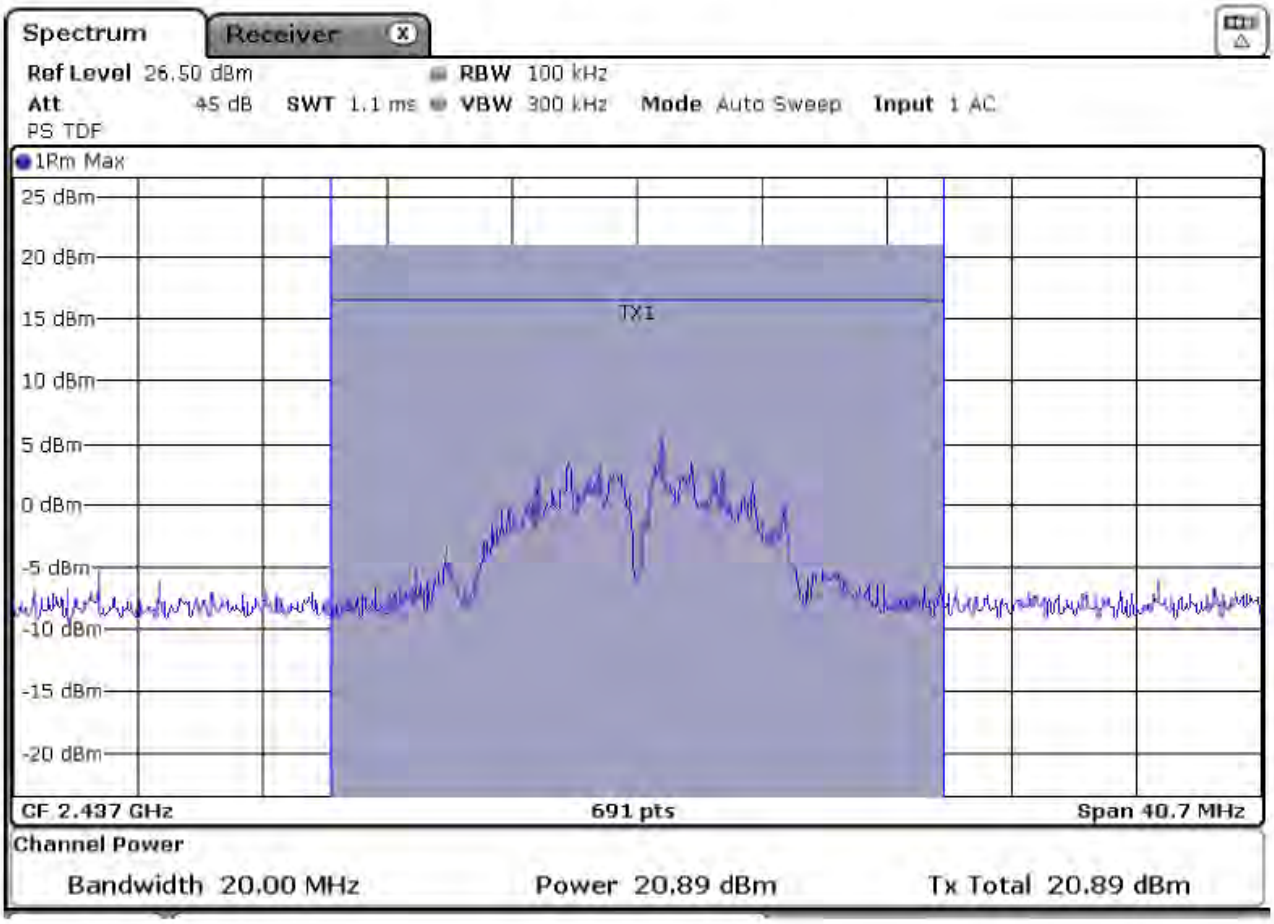
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: X / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	20,89	9,11	30,00	**pass**

TESTED IN GERMANY

FCC 1

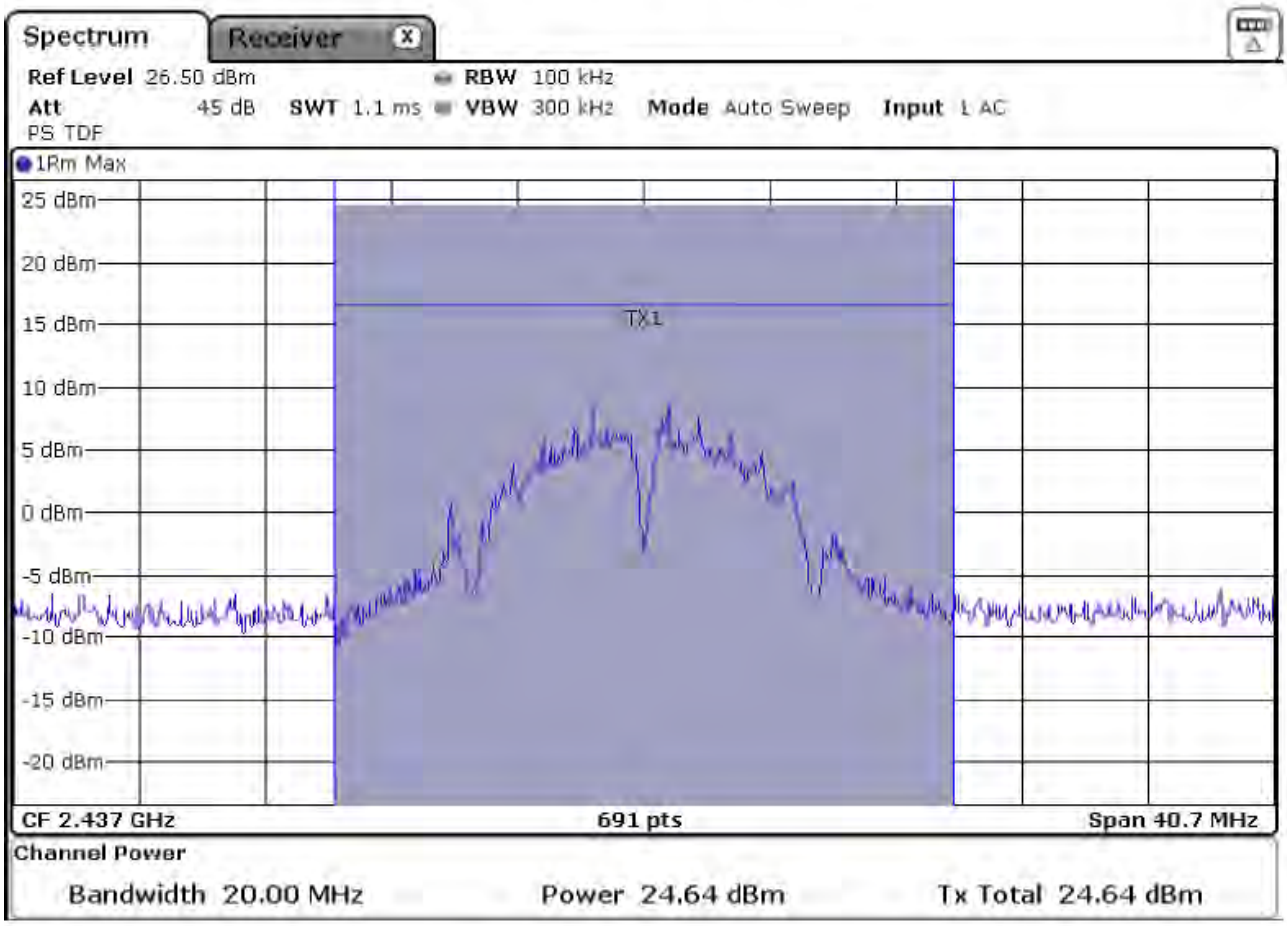
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: X / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	24,64	5,36	30,00	**pass**

TESTED IN GERMANY

FCC 1

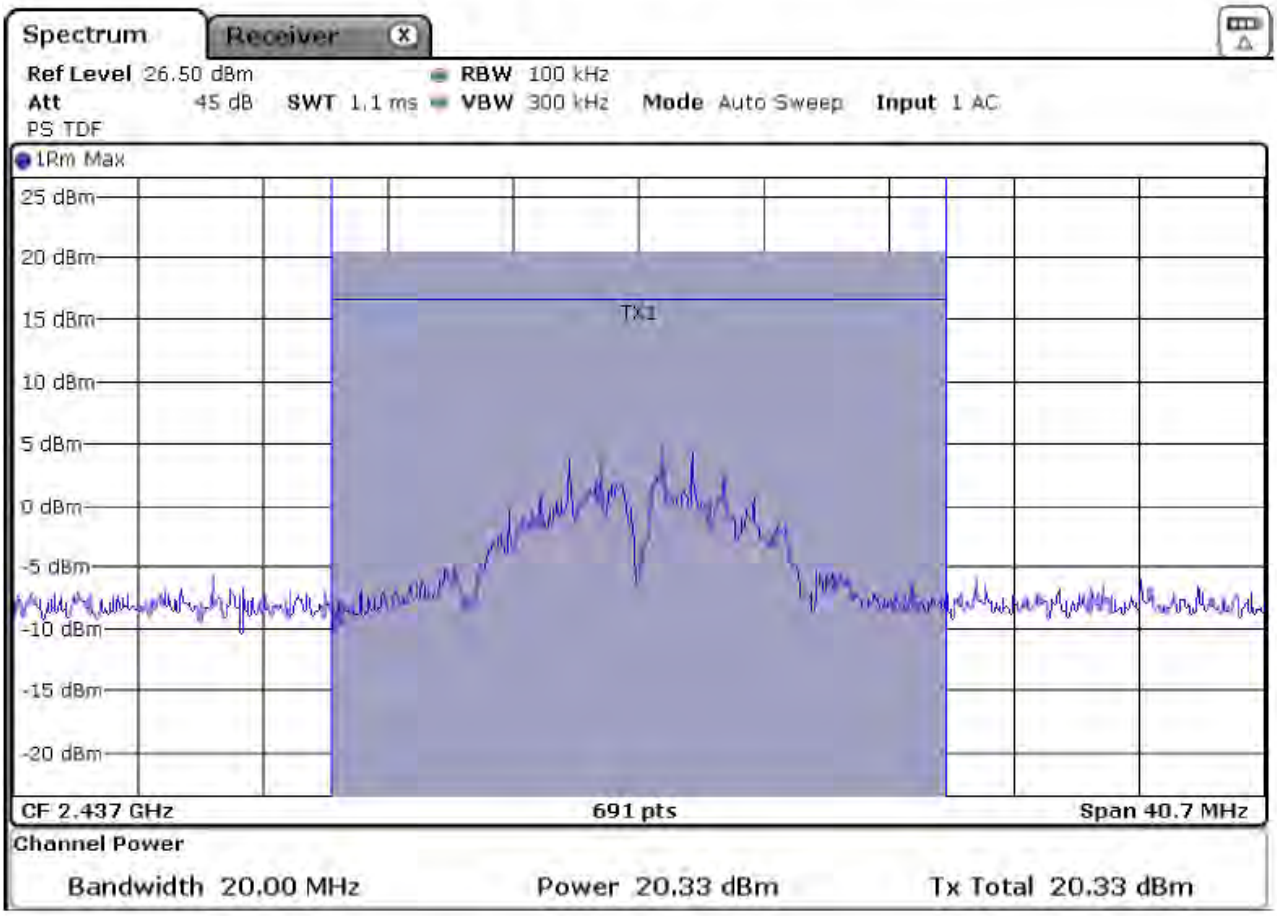
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: Y / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	20,33	9,67	30,00	**pass**

TESTED IN GERMANY

FCC 1

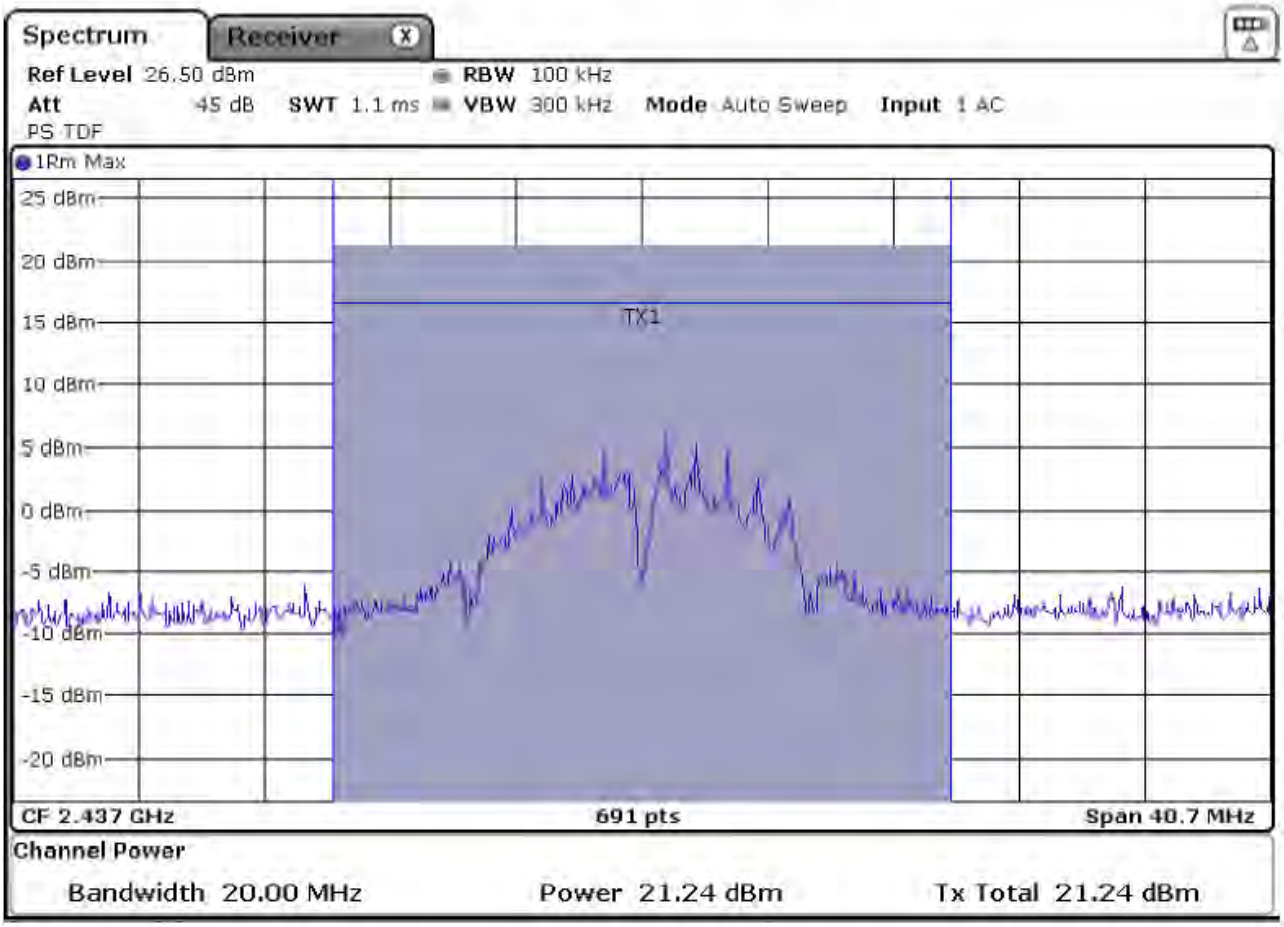
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: Y / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	21,24	8,76	30,00	**pass**

TESTED IN GERMANY

FCC 1

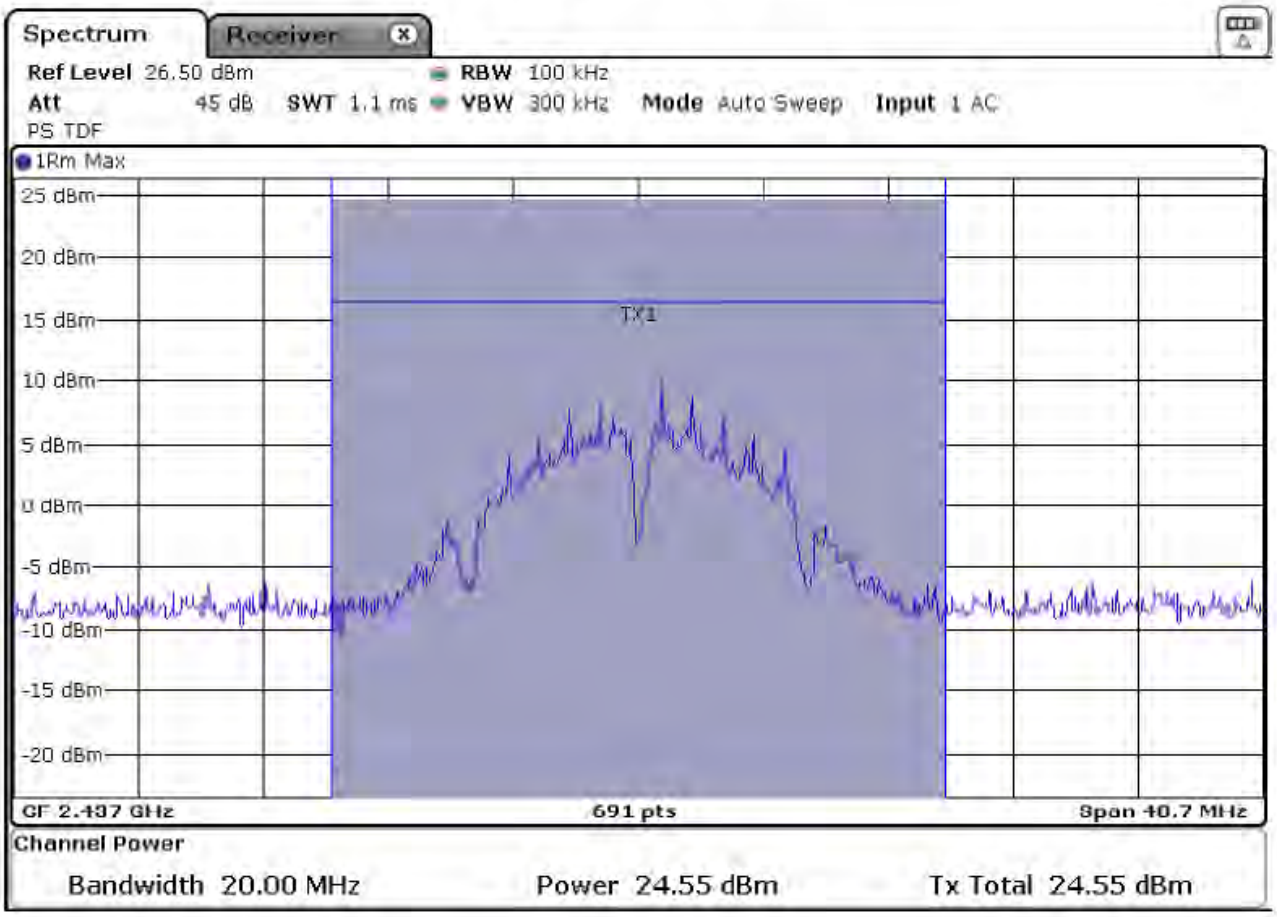
Output power of fundamental emissions

acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: Z / Polarisation: V				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	24,55	5,45	30,00	**pass**

TESTED IN GERMANY

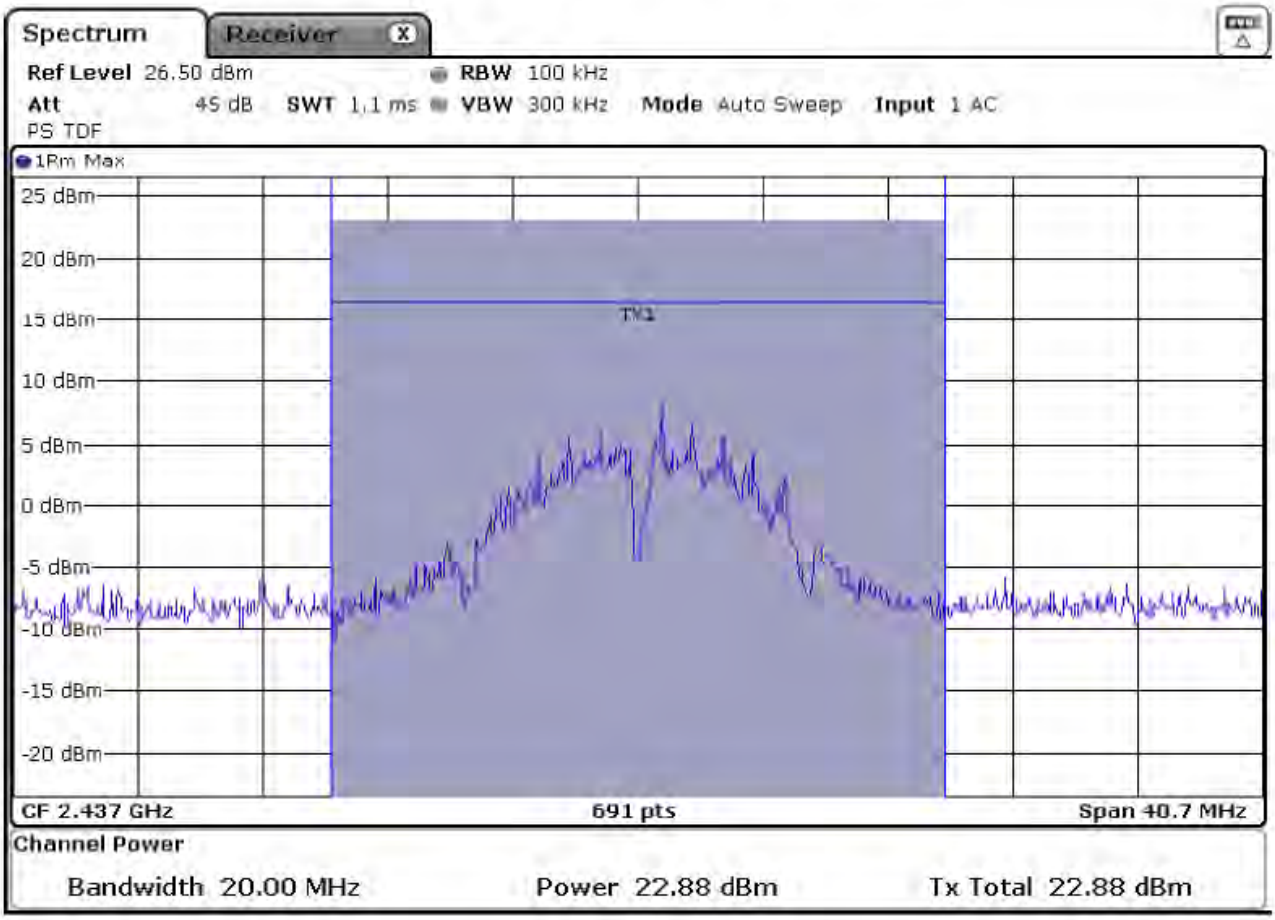
FCC 1

Output power of fundamental emissions
acc. FCC Subpart C § 15.209 / RSS-247

STC

Ref.-No.: 20/01-0031

Operating Mode: WLAN 802.11b, CH.06, CCK, BW = 20 MHz



Position: Z / Polarisation: H				
Frequ. [MHz]	**Level [dBm]**	**Margin to Limit [dB]**	**Limit [dBm]**	**Result**
2437	22,88	7,12	30,00	**pass**