FCC PART 15C
TEST REPORT
No. I15Z43162-SRD06

for

Reliance Communications, LLC

GSM quad band and wcdma and LTE mobile Phone

Model Name: RC501L

With

Hardware Version: WMDGa

Software Version: Orbic-RC501L_v1.0.9

FCC ID: 2ABGH-RC501L

Issued Date: Jan 25th, 2016

Test Laboratory:

FCC 2.948 Listed: No.342690

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

Test Laboratory:

CTTL, Telecommunication Technology Labs, Academy of Telecommunication Research, MIIT

No.52, HuayuanNorth Road, Haidian District, Beijing, P. R. China 100191.

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I15Z43162-SRD06	Rev.0	1st edition	2016-01-25

CONTENTS

1. Test Laboratory

1.1. Testing Location

Location 1:CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China100191

Location 2:CTTL(Shouxiang)

Address: No. 51 Shouxiang Science Building, Xueyuan Road, Haidian District, Beijing, P. R. China100191

1.2. Testing Environment

Normal Temperature: 15-35℃

Extreme Temperature: -20/+55℃

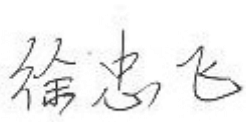
Relative Humidity: 20-75%

1.3. Project data

Testing Start Date: 2015-12-11

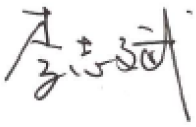
Testing End Date: 2016-01-07

1.4. Signature



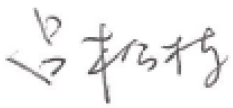
Xu Zhongfei

(Prepared this test report)



Li Zhibin

(Reviewed this test report)



Lv Songdong

(Approvedthis test report)

2. Client Information

2.1. Applicant Information

Company Name:	Reliance Communications, LLC
Address:	555 Wireless Blvd, Hauppauge, NY 11788,United States
City:	NY
Postal Code:	/
Country:	United States
Telephone:	631-240-8396
Fax:	/

2.2. Manufacturer Information

Company Name:	Reliance Communications, LLC
Address:	555 Wireless Blvd, Hauppauge, NY 11788,United States
City:	NY
Postal Code:	/
Country:	United States
Telephone:	631-240-8396
Fax:	/

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	GSM quad band and wcdma and LTE mobile Phone
Model Name	RC501L
Market Name	/
RF Protocol	IEEE 802.11b/g/n20/n40
Operating Frequency	2412MHz~2462MHz
FCC ID	2ABGH-RC501L

*Note: Photographs of EUT are shown in ANNEX A of this test report.

3.2. Internal Identification of EUT

EUT ID*	IMEI	HW Version	SW Version
EUT1	/	WMDGa	Orbic-RC501L_v1.0.9

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE

AE ID*	Description	Type	SN
AE1	Charger	TL6D-0501000	/

*AE ID: is used to identify the test sample in the lab internally.

4. Reference Documents

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902–928MHz, 2400–2483.5 MHz, and 5725–5850 MHz.	Oct, 2014
ANSI C63.10	American National Standard for Testing Unlicensed Wireless Devices	Jun,2013

5. Test Results

5.1. Summary of Test Results

No	Test cases	Standard Sub-clause	Verdict
0	Antenna Requirement	15.203	**P**
1	Maximum Peak Output Power	15.247 (b)	**P**
2	Peak Power Spectral Density	15.247 (e)	**P**
3	Occupied 6dB Bandwidth	15.247 (a)	**P**
4	Band Edges Compliance	15.247 (d)	**P**
5	Transmitter Spurious Emission - Conducted	15.247 (d)	**P**
6	Transmitter Spurious Emission - Radiated	15.247, 15.205, 15.209	**P**
7	AC Powerline Conducted Emission	15.107, 15.207	**P**
8	Occupied Bandwidth	/	**P**

See **ANNEX B and ANNEX C** for details.

5.2. Statements

CTTL has evaluated the test cases requested by the applicant/manufacturer as listed in section 5.1 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in section 4.2

5.3. Terms used in the result table

Terms used in Verdict column

P	Pass
NA	Not Available
F	Fail

Abbreviations

AC	Alternating Current
AFH	Adaptive Frequency Hopping
BW	Band Width
E.I.R.P.	equivalent isotropical radiated power
ISM	Industrial, Scientific and Medical
R&TTE	Radio and Telecommunications Terminal Equipment
RF	Radio Frequency
Tx	Transmitter

5.4. Laboratory Environment

Semi-anechoic chamber (23 meters×17 meters×10 meters) did not exceed following limits:

Temperature	Min. = 15 ˚C, Max. = 35 ˚C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 M
Ground system resistance	< 4
Normalised site attenuation (NSA)	< ± 4 dB, 3m/10m distance, from 30 to 1000 MHz
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

Shielded room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ˚C, Max. = 35 ˚C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 M
Ground system resistance	< 4

6. Test Facilities Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration date	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	2015-07-08	2016-07-07
2	Test Receiver	ESS	847151/015	Rohde & Schwarz	2015-11-29	2016-11-28
3	LISN	ESH2-Z5	829991/012	Rohde & Schwarz	2015-4-15	2016-4-14
4	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESCI 7	100948	Rohde & Schwarz	1 year	2016-07-16
2	Loop antenna	HFH2-Z2	829324/007	Rohde & Schwarz	3 year	2017-12-16
3	BiLog Antenna	VULB9163	234	Schwarzbeck	3 year	2016-09-15
4	Dual-Ridge Waveguide Horn Antenna	3115	6914	EMCO	3 year	2017-12-15
5	Dual-Ridge Waveguide Horn Antenna	3116	2661	ETS-Lindgren	3 year	2017-06-30
6	Vector Signal Analyzer	FSV	101047	Rohde & Schwarz	1 year	2016-07-03
7	Semi-anechoic chamber	/	CT000332-1074	Frankonia German	/	/

Anechoic chamber

Fully anechoic chamber by ETS-Lindgren.

7. Measurement Uncertainty

Test Name	Uncertainty	
1.Maximum Peak Output Power	±1.32dB	
2.Peak Power Spectral Density	±0.66dBm/MHz	
3.Occupied 6dB Bandwidth	±66Hz	
4.Band Edges Compliance	±66Hz	
5.Transmitter Spurious Emission - Conducted	30MHz≤f≤1GHz	±1.41dB
	1GHz≤f≤18GHz	±1.92dB
	18GHz≤f≤26GHz	±2.31dB
6.Transmitter Spurious Emission - Radiated	9k≤f≤30MHz	±4.00dB
	30M≤f≤1GHz	±5.08dB
	1GHz≤f≤18GHz	±4.56dB
	18GHz≤f≤26GHz	±4.56dB
7.AC Powerline Conducted Emission	±2.7dB	
8. Occupied Bandwidth	±66Hz	

ANNEX A: MEASUREMENT RESULTS FOR RECEIVER

A.0 Antenna requirement

Measurement Limit:

Standard	Requirement
FCC CRF Part 15.203	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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, § 15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Conclusion: The Directional gains of antenna used for transmitting is 1.7 dBi.
The RF transmitter uses an integrate antenna without connector.

A.1 Maximum Average Output Power

Measurement Limit:

Standard	Limit (dBm)
FCC CRF Part 15.247(b)(1)	< 30

Measurement Results:

802.11b/g mode

Mode	Data Rate (Mbps)	Test Result (dBm)					
		2412MHz (Ch1)		2437MHz (Ch6)		2462 MHz (Ch11)	
802.11b	1	Fig.1	13.45	Fig.2	13.50	Fig.3	13.38
	2	Fig.4	13.48	Fig.5	13.31	Fig.6	13.40
	5.5	Fig.7	13.47	Fig.8	13.38	Fig.9	13.47
	11	Fig.10	13.29	Fig.11	13.34	Fig.12	13.13
802.11g	6	Fig.13	11.50	Fig.14	11.50	Fig.15	11.56
	9	Fig.16	11.51	Fig.17	11.48	Fig.18	11.58
	12	Fig.19	11.48	Fig.20	11.62	Fig.21	11.58
	18	Fig.22	11.57	Fig.23	11.73	Fig.24	11.67
	24	Fig.25	11.29	Fig.26	11.48	Fig.27	11.47
	36	Fig.28	11.37	Fig.29	11.47	Fig.30	11.41
	48	Fig.31	11.57	Fig.32	11.46	Fig.33	11.42
	54	Fig.34	11.45	Fig.35	11.52	Fig.36	11.42

802.11n mode

Mode	Data Rate (MCS Index)	Test Result (dBm)					
		2412MHz (Ch1)		2437MHz (Ch6)		2462 MHz (Ch11)	
802.11n (20MHz)	MCS0	Fig.37	11.69	Fig.38	11.57	Fig.39	11.29
	MCS1	Fig.40	11.73	Fig.41	11.31	Fig.42	11.40
	MCS2	Fig.43	11.45	Fig.44	11.35	Fig.45	11.29
	MCS3	Fig.46	11.46	Fig.47	11.35	Fig.48	11.53
	MCS4	Fig.49	11.50	Fig.50	11.42	Fig.51	11.47
	MCS5	Fig.52	11.70	Fig.53	11.49	Fig.54	11.65
	MCS6	Fig.55	11.69	Fig.56	11.47	Fig.57	11.71
	MCS7	Fig.58	11.71	Fig.59	11.47	Fig.60	11.73

Mode	Data Rate (MCS Index)	Test Result (dBm)					
		2422MHz (Ch3)		2437MHz (Ch6)		2452 MHz (Ch9)	
802.11n (40MHz)	MCS0	Fig.61	11.42	Fig.62	11.32	Fig.63	11.17
	MCS1	Fig.64	11.14	Fig.65	11.39	Fig.66	11.66
	MCS2	Fig.67	11.14	Fig.68	11.18	Fig.69	11.47
	MCS3	Fig.70	11.28	Fig.71	11.19	Fig.72	11.43
	MCS4	Fig.73	11.34	Fig.74	11.20	Fig.75	11.40
	MCS5	Fig.76	11.28	Fig.77	11.17	Fig.78	11.43
	MCS6	Fig.79	11.30	Fig.80	11.19	Fig.81	11.38
	MCS7	Fig.82	11.25	Fig.83	11.18	Fig.84	11.40

See ANNEX C for test graphs.

Conclusion: PASS

A.2 Peak Power Spectral Density

Measurement Limit:

Standard	Limit
FCC CRF Part 15.247(d)	< 8 dBm/3 kHz

Measurement Results:

802.11b/g mode

Mode	Channel	Peak Power Spectral Density（dBm）		Conclusion
802.11b	1	Fig.85	-9.84	P
	6	Fig.86	-7.88	P
	11	Fig.87	-9.29	P
802.11g	1	Fig.88	-13.18	P
	6	Fig.89	-13.79	P
	11	Fig.90	-13.52	P

802.11n mode

Mode	Channel	Peak Power Spectral Density(dBm)		Conclusion
802.11n (20MHz)	1	Fig.91	-14.60	P
	6	Fig.92	-14.88	P
	11	Fig.93	-13.88	P
802.11n (40MHz)	3	Fig.94	-17.16	P
	6	Fig.95	-17.08	P
	9	Fig.96	-17.43	P

See ANNEX C for test graphs.

Conclusion: PASS

A.3 Occupied 6dB Bandwidth

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	≥ 500

Measurement Result:

802.11b/g mode

Mode	Channel	Test Results (kHz)		conclusion
802.11b	1	Fig.97	9812	P
	6	Fig.98	9812	P
	11	Fig.99	9161	P
802.11g	1	Fig.100	16107	P
	6	Fig.101	16064	P
	11	Fig.102	16237	P

802.11n mode

Mode	Channel	Test Results (kHz)		conclusion
802.11n (20MHz)	1	Fig.103	17670	P
	6	Fig.104	17583	P
	11	Fig.105	17366	P
802.11n (40MHz)	3	Fig.106	36035	P
	6	Fig.107	35861	P
	9	Fig.108	36230	P

See ANNEX C for test graphs.

Conclusion: PASS

A.4 Band Edges Compliance

Measurement Limit:

Standard	Limit (dBc)
FCC 47 CFR Part 15.247 (d)	> 20

Measurement Result:

802.11b/g mode

Mode	Channel	Test Results	Conclusion
802.11b	1	Fig.109	P
	11	Fig.110	P
802.11g	1	Fig.111	P
	11	Fig.112	P

802.11n mode

Mode	Channel	Test Results	Conclusion
802.11n (20MHz)	1	Fig.113	P
	11	Fig.114	P
802.11n (40MHz)	3	Fig.115	P
	9	Fig.116	P

See ANNEX C for test graphs.

Conclusion: PASS

A.5 Transmitter Spurious Emission

A.5.1 Transmitter Spurious Emission - Conducted

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (d)	20dB below peak output power in 100 kHz bandwidth

Measurement Results:

802.11b/g mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.412 GHz	Fig.117	P
		30 MHz-3 GHz	Fig.118	P
		3GHz-18GHz	Fig.119	P
	6	2.437 GHz	Fig.120	P
		30 MHz-3 GHz	Fig.121	P
		3GHz-18GHz	Fig.122	P
	11	2.462 GHz	Fig.123	P
		30 MHz-3 GHz	Fig.124	P
		3GHz-18GHz	Fig.125	P
802.11g	1	2.412 GHz	Fig.126	P
		30 MHz-3 GHz	Fig.127	P
		3GHz-18GHz	Fig.128	P
	6	2.437 GHz	Fig.129	P
		30 MHz-3 GHz	Fig.130	P
		3GHz-18GHz	Fig.131	P
	11	2.462 GHz	Fig.132	P
		30 MHz-3 GHz	Fig.133	P
		3GHz-18GHz	Fig.134	P

802.11n mode

802.11n (20MHz)	1	2.412 GHz	Fig.135	P
		30 MHz-3 GHz	Fig.136	P
		3GHz-18GHz	Fig.137	P
	6	2.437 GHz	Fig.138	P
		30 MHz-3 GHz	Fig.139	P
		3GHz-18GHz	Fig.140	P
	11	2.462 GHz	Fig.141	P
		30 MHz-3 GHz	Fig.142	P
		3GHz-18GHz	Fig.143	P
802.11n (40MHz)	3	2.422 GHz	Fig.144	P
		30 MHz-3 GHz	Fig.145	P
		3GHz-18GHz	Fig.146	P
	6	2.437 GHz	Fig.147	P
		30 MHz-3 GHz	Fig.148	P
		3GHz-18GHz	Fig.149	P
	9	2.452 GHz	Fig.150	P
		30 MHz-3 GHz	Fig.151	P
		3GHz-18GHz	Fig.152	P
/	All channels	18GHz-26GHz	Fig.153	P

See ANNEX C for test graphs.

Conclusion: PASS

A.5.2 Transmitter Spurious Emission - Radiated

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Limit in restricted band:

Frequency of emission (MHz)	Field strength(μV/m)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Condition

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	120kHz/300kHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

Note:

According to the performance evaluation, the radiated emission margin of EUT is over 20dB in the band below 30MHz. Therefore, the measurement starts from 30MHz to tenth harmonic.

The measurement results include the horizontal polarization and vertical polarization measurements.

Measurement Results:

802.11b/g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	1 GHz ~ 18 GHz	Fig.154	P
	6	9 kHz ~30 MHz	Fig.155	P
		30 MHz ~1 GHz	Fig.156	P
		1 GHz ~ 18 GHz	Fig.157	P
		18 GHz~ 26.5 GHz	Fig.158	P
	11	1 GHz ~ 18 GHz	Fig.159	P
	Power(CH1)	2.38 GHz ~ 2.45 GHz	Fig.160	P
	Power(CH11)	2.45 GHz ~ 2.5 GHz	Fig.161	P
802.11g	1	1 GHz ~ 18 GHz	Fig.162	P
	6	30 MHz ~1 GHz	Fig.163	P
		1 GHz ~ 18 GHz	Fig.164	P
		18 GHz~ 26.5 GHz	Fig.165	P
	11	1 GHz ~ 18 GHz	Fig.166	P
	Power(CH1)	2.38 GHz ~ 2.45 GHz	Fig.167	P
	Power(CH11)	2.45 GHz ~ 2.5 GHz	Fig.168	P

802.11n mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (20MHz)	1	1 GHz ~ 18 GHz	Fig.169	P
	6	30 MHz ~1 GHz	Fig.170	P
		1 GHz ~ 18 GHz	Fig.171	P
		18 GHz~ 26.5 GHz	Fig.172	P
	11	1 GHz ~ 18 GHz	Fig.173	P
	Power(CH1)	2.38 GHz ~ 2.45 GHz	Fig.174	P
	Power(CH11)	2.45 GHz ~ 2.5 GHz	Fig.175	P

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (40MHz)	3	1 GHz ~ 18 GHz	Fig.176	P
	6	30 MHz ~1 GHz	Fig.177	P
		1 GHz ~ 18 GHz	Fig.178	P
		18 GHz~ 26.5 GHz	Fig.179	P
	9	1 GHz ~ 18 GHz	Fig.180	P
	Power(CH3)	2.38 GHz ~ 2.45 GHz	Fig.181	P
	Power(CH9)	2.45 GHz ~ 2.5 GHz	Fig.182	P

802.11b CH1 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14516.000000	56.2	V	11.7	17.8	74.0
15090.000000	57.1	H	12.0	16.9	74.0
15691.000000	58.5	V	12.8	15.5	74.0
16238.000000	58.9	V	13.3	15.1	74.0
16769.000000	59.4	H	14.0	14.6	74.0
17314.000000	59.0	V	14.2	15.0	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14518.000000	44.3	V	11.7	9.7	54.0
15159.000000	45.1	V	12.1	8.9	54.0
15678.000000	46.4	V	12.8	7.6	54.0
16200.000000	46.9	V	13.3	7.1	54.0
16764.000000	47.5	V	14.0	6.5	54.0
17300.000000	47.2	V	14.1	6.8	54.0

802.11b CH 6(1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14168.000000	55.8	V	11.3	18.2	74.0
14683.000000	56.8	V	11.9	17.2	74.0
15754.000000	58.9	V	12.9	15.1	74.0
16300.000000	58.4	H	13.4	15.6	74.0
16749.000000	60.0	V	14.0	14.0	74.0
17352.000000	59.3	V	14.2	14.7	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14548.000000	44.2	V	11.8	9.8	54.0
15168.000000	45.0	H	12.1	9.0	54.0
15745.000000	46.4	V	12.9	7.6	54.0
16213.000000	46.9	V	13.3	7.1	54.0
16777.000000	47.4	V	14.0	6.6	54.0
17279.000000	47.1	V	14.1	6.9	54.0

802.11b CH11 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14103.000000	55.4	H	11.2	18.6	74.0
15071.000000	56.5	V	12.0	17.5	74.0
15677.000000	57.7	V	12.8	16.3	74.0
16222.000000	57.8	H	13.3	16.2	74.0
16941.000000	58.3	H	14.1	15.7	74.0
17358.000000	58.2	H	14.2	15.8	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14487.000000	43.3	H	11.7	10.7	54.0
15131.000000	44.2	H	12.1	9.8	54.0
15772.000000	45.7	V	12.9	8.3	54.0
16200.000000	45.6	V	13.3	8.4	54.0
16785.000000	46.0	H	14.0	8.0	54.0
17413.000000	45.8	V	14.3	8.2	54.0

802.11g CH1 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14158.000000	55.2	V	11.2	18.8	74.0
15093.000000	56.6	V	12.0	17.4	74.0
15717.000000	58.1	V	12.9	15.9	74.0
16236.000000	58.1	V	13.3	15.9	74.0
16764.000000	59.3	V	14.0	14.7	74.0
17344.000000	58.0	H	14.2	16.0	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14518.000000	43.5	V	11.7	10.5	54.0
15136.000000	44.4	V	12.1	9.6	54.0
15770.000000	46.0	V	12.9	8.0	54.0
16213.000000	45.8	V	13.3	8.2	54.0
16772.000000	46.4	V	14.0	7.6	54.0
17341.000000	46.0	V	14.2	8.0	54.0

802.11g CH6 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14055.000000	56.7	V	11.1	17.3	74.0
15147.000000	57.1	V	12.1	16.9	74.0
15763.000000	58.4	V	12.9	15.6	74.0
16195.000000	58.6	V	13.3	15.4	74.0
16777.000000	59.4	V	14.0	14.6	74.0
17272.000000	59.1	V	14.1	14.9	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14541.000000	44.2	V	11.8	9.8	54.0
15150.000000	44.9	V	12.1	9.1	54.0
15684.000000	46.5	V	12.8	7.5	54.0
16218.000000	47.0	V	13.3	7.0	54.0
16769.000000	47.5	V	14.0	6.5	54.0
17340.000000	47.2	V	14.2	6.8	54.0

802.11g CH11 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14423.000000	56.3	H	11.5	17.7	74.0
15182.000000	57.2	V	12.1	16.8	74.0
15679.000000	58.2	V	12.8	15.8	74.0
16253.000000	58.6	V	13.3	15.4	74.0
17236.000000	59.6	H	14.0	14.4	74.0
17347.000000	59.5	V	14.2	14.5	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14535.000000	44.3	V	11.8	9.7	54.0
15173.000000	44.9	H	12.1	9.1	54.0
15675.000000	46.4	V	12.8	7.6	54.0
16206.000000	46.9	V	13.3	7.1	54.0
16751.000000	47.5	V	14.0	6.5	54.0
17280.000000	47.3	V	14.1	6.7	54.0

802.11n-20MHz CH1 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14163.000000	56.2	H	11.2	17.8	74.0
15096.000000	57.6	H	12.0	16.4	74.0
15816.000000	58.6	V	13.0	15.4	74.0
16314.000000	59.0	V	13.5	15.0	74.0
16775.000000	59.9	H	14.0	14.1	74.0
17945.000000	59.2	V	14.6	14.8	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14522.000000	44.3	V	11.7	9.7	54.0
15175.000000	45.1	V	12.1	8.9	54.0
15674.000000	46.6	V	12.8	7.4	54.0
16206.000000	47.2	V	13.3	6.8	54.0
16767.000000	47.6	V	14.0	6.4	54.0
17286.000000	47.2	V	14.1	6.8	54.0

802.11n-20MHz CH6 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14462.000000	56.3	V	11.6	17.7	74.0
15034.000000	56.6	H	12.0	17.4	74.0
15748.000000	58.6	V	12.9	15.4	74.0
16269.000000	58.4	V	13.4	15.6	74.0
16790.000000	58.7	V	14.0	15.3	74.0
17336.000000	58.9	V	14.2	15.1	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14526.000000	43.8	V	11.7	10.2	54.0
15107.000000	44.7	V	12.0	9.3	54.0
15767.000000	46.2	V	12.9	7.8	54.0
16244.000000	46.2	V	13.3	7.8	54.0
16769.000000	46.6	V	14.0	7.4	54.0
17408.000000	46.5	V	14.3	7.5	54.0

802.11n-20MHz CH11 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14529.000000	55.6	V	11.7	18.4	74.0
14875.000000	56.1	V	11.8	17.9	74.0
15767.000000	58.0	H	12.9	16.0	74.0
16324.000000	58.1	H	13.5	15.9	74.0
16677.000000	58.9	V	13.9	15.1	74.0
17291.000000	57.8	H	14.1	16.2	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14453.000000	43.3	V	11.6	10.7	14453.000000
15136.000000	44.4	V	12.1	9.6	15136.000000
15777.000000	46.0	H	12.9	8.0	15777.000000
16278.000000	45.6	V	13.4	8.4	16278.000000
16826.000000	46.1	H	14.0	7.9	16826.000000
17400.000000	45.9	V	14.3	8.1	17400.000000

802.11n-40MHz CH3 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14088.000000	55.9	V	11.1	18.1	74.0
15149.000000	57.2	V	12.1	16.8	74.0
15770.000000	58.2	V	12.9	15.8	74.0
16236.000000	58.4	V	13.3	15.6	74.0
16798.000000	58.9	V	14.0	15.1	74.0
17297.000000	58.6	V	14.1	15.4	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14543.000000	44.2	V	11.8	9.8	54.0
15137.000000	44.9	V	12.1	9.1	54.0
15738.000000	46.5	V	12.9	7.5	54.0
16236.000000	46.8	V	13.3	7.2	54.0
16764.000000	47.2	V	14.0	6.8	54.0
17274.000000	47.2	V	14.1	6.8	54.0

802.11n-40MHz CH6 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14491.000000	56.6	H	11.7	17.4	74.0
15092.000000	57.1	H	12.0	16.9	74.0
15773.000000	59.0	V	12.9	15.0	74.0
16137.000000	59.0	V	13.3	15.0	74.0
16735.000000	60.4	V	13.9	13.6	74.0
17946.000000	59.2	V	14.6	14.8	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14522.000000	44.4	V	11.7	9.6	14522.000000
15148.000000	45.0	V	12.1	9.0	15148.000000
15671.000000	46.6	V	12.8	7.4	15671.000000
16208.000000	46.9	V	13.3	7.1	16208.000000
16717.000000	47.6	V	13.9	6.4	16717.000000
17393.000000	47.2	V	14.3	6.8	17393.000000

802.11n-40MHz CH9 (1-18GHz)

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14114.000000	55.3	V	11.2	18.7	74.0
15062.000000	56.1	V	12.0	17.9	74.0
15636.000000	58.8	V	12.7	15.2	74.0
16367.000000	58.0	H	13.6	16.0	74.0
16857.000000	58.3	V	14.0	15.7	74.0
17319.000000	57.7	H	14.2	16.3	74.0

Frequency (MHz)	Average-ClearWrite (dBµV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
14471.000000	43.3	V	11.6	10.7	14471.000000
15051.000000	44.3	V	12.0	9.7	15051.000000
15739.000000	45.8	V	12.9	8.2	15739.000000
16236.000000	45.7	V	13.3	8.3	16236.000000
16775.000000	46.1	V	14.0	7.9	16775.000000
17436.000000	45.8	V	14.3	8.2	17436.000000

See ANNEX C for test graphs.

Conclusion: PASS

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

Result=P_{Mea}+$A_{Rpl=}$ P_{Mea}+Cable Loss+Antenna Factor

A.6 AC Powerline Conducted Emission

Test Condition:

Voltage（V）	Frequency（Hz）
120	60

Measurement Result and limit:

WLAN (Quasi-peak Limit)-AE1

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	Fig.66 to 56	Fig.183	P
0.5 to 5	56		
5 to 30	60		
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.			

WLAN (Average Limit)-AE1

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Traffic	Conclusion
0.15 to 0.5	56 to 46	Fig.183	P
0.5 to 5	46		
5 to 30	50		
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.			

WLAN (Quasi-peak Limit)-AE1-idle

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	Fig.67 to 56	Fig.184	P
0.5 to 5	56		
5 to 30	60		
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.			

WLAN (Average Limit)-AE1-idle

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV) Idle	Conclusion
0.15 to 0.5	56 to 46	Fig.184	P
0.5 to 5	46		
5 to 30	50		
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.			

See ANNEX C for test graphs.

Conclusion: PASS

ANNEX B: TEST LAYOUTS

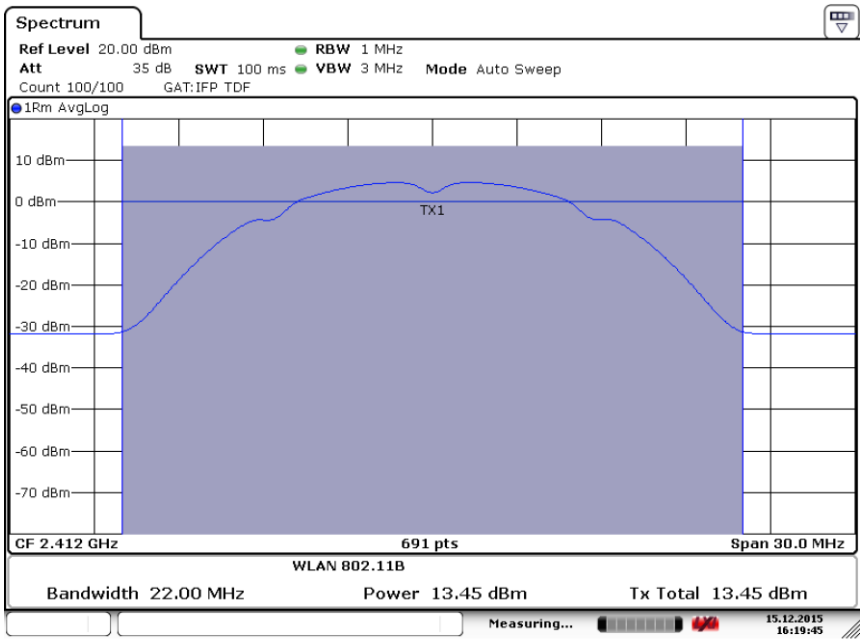


Fig.1 Maximum Average Output Power (802.11b, Ch 1,1Mbps)

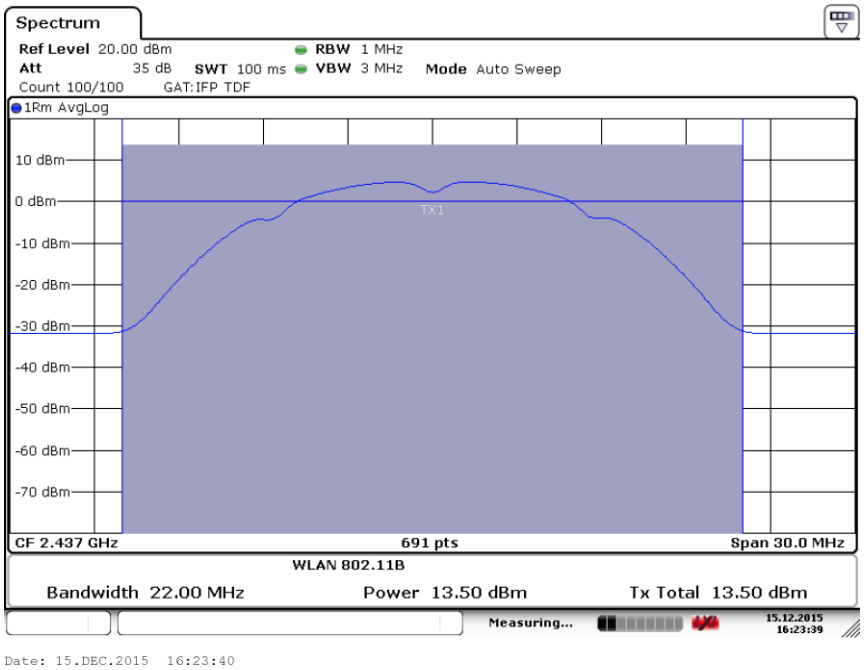


Fig.2 Maximum Average Output Power (802.11b, Ch 6,1Mbps)

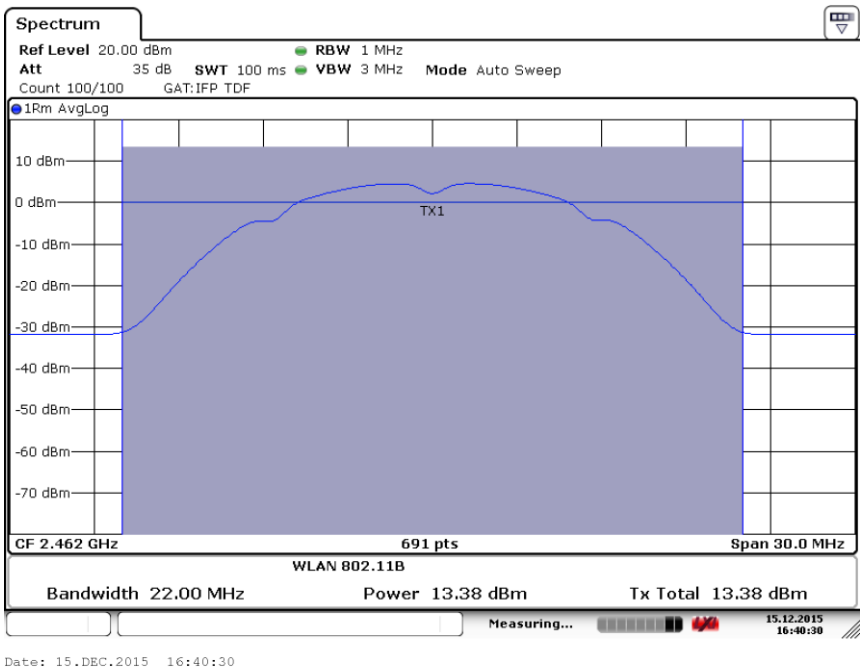


Fig.3 Maximum Average Output Power (802.11b, Ch 11,1Mbps)

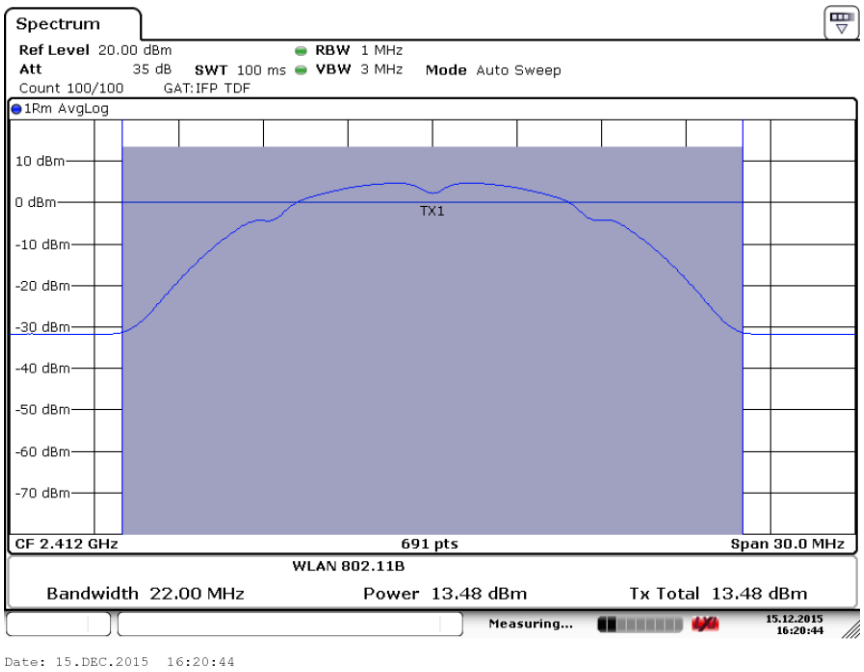


Fig.4 Maximum Average Output Power (802.11b, Ch 1,2Mbps)

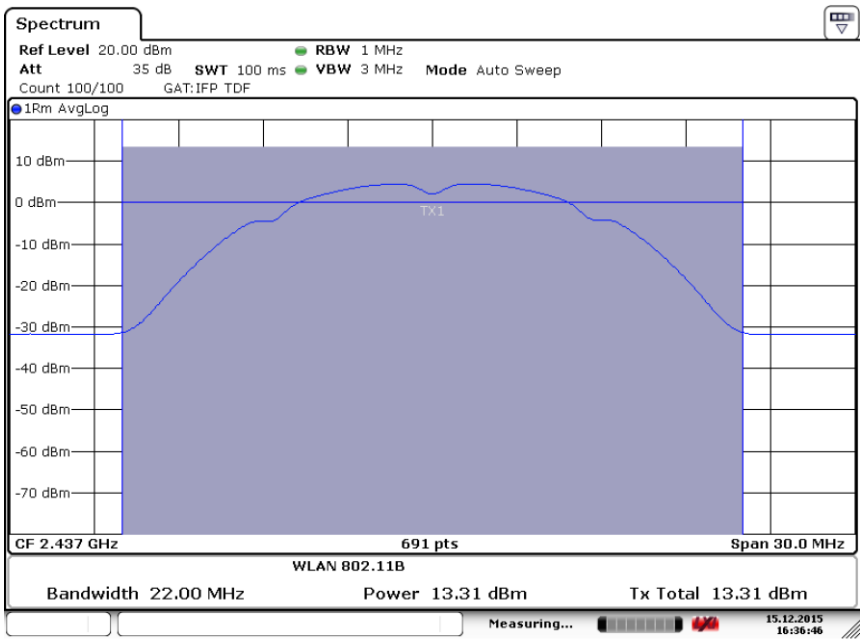


Fig.5 Maximum Average Output Power (802.11b, Ch 6,2Mbps)

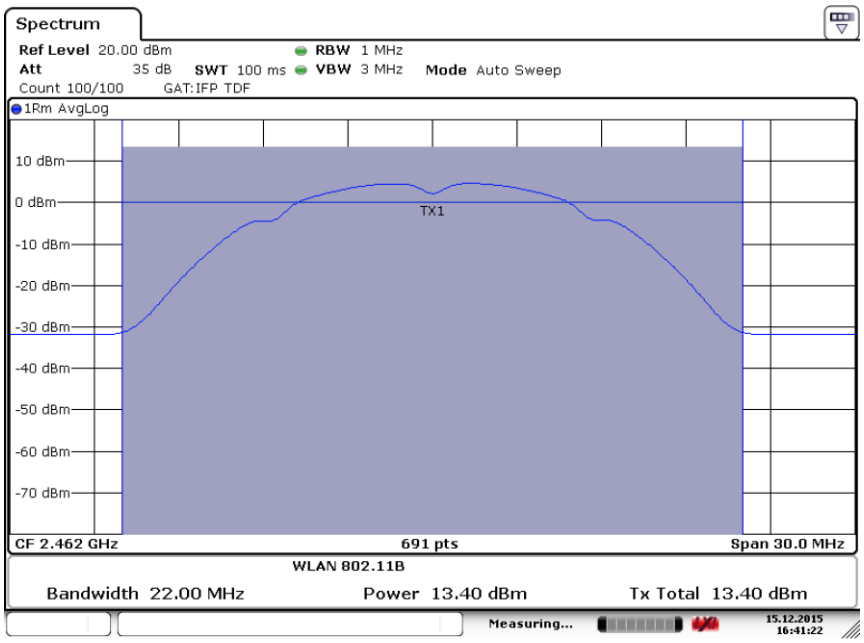


Fig.6 Maximum Average Output Power (802.11b, Ch 11,2Mbps)

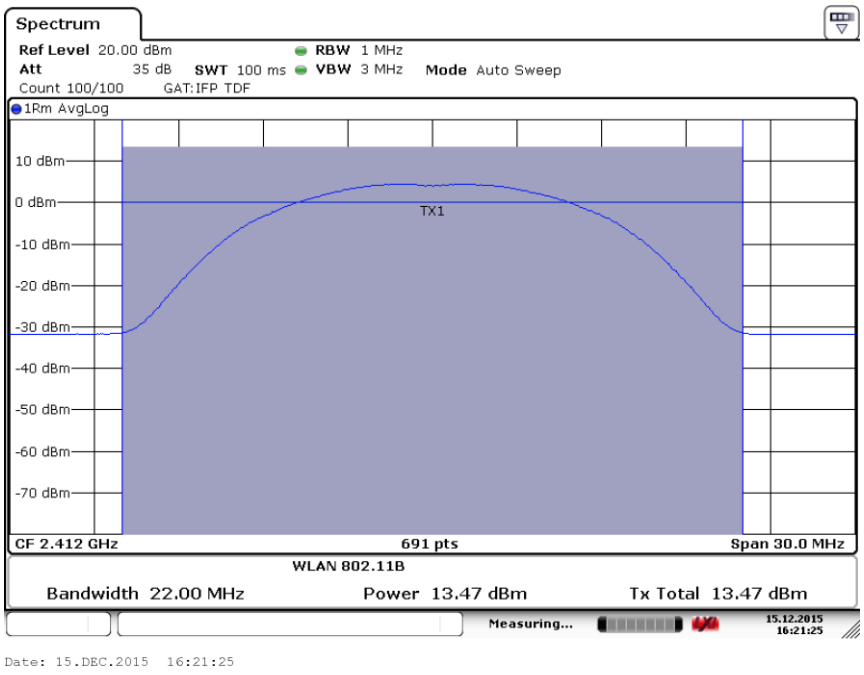


Fig.7 Maximum Average Output Power (802.11b, Ch 1,5.5Mbps)

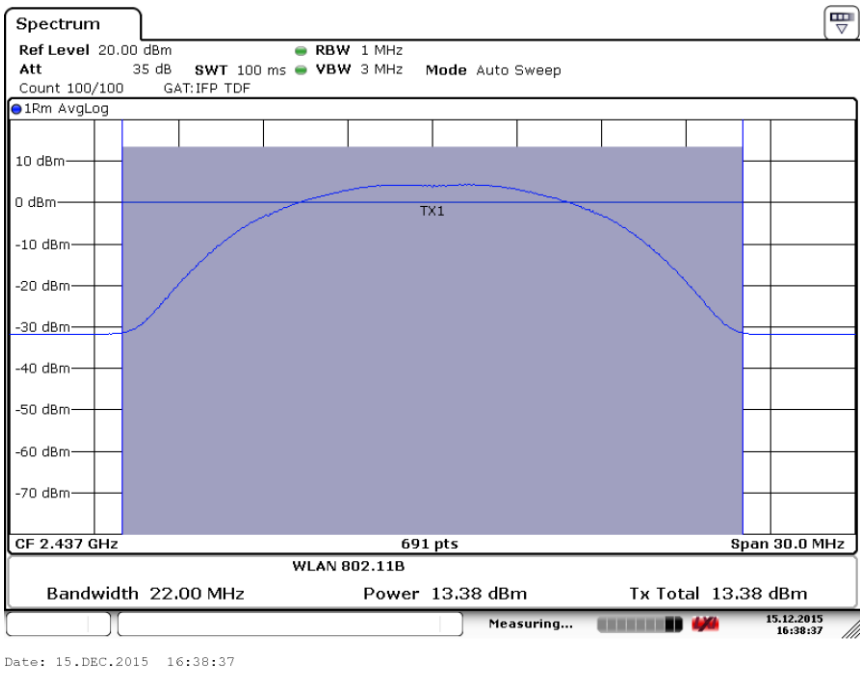


Fig.8 Maximum Average Output Power (802.11b, Ch 6,5.5Mbps)

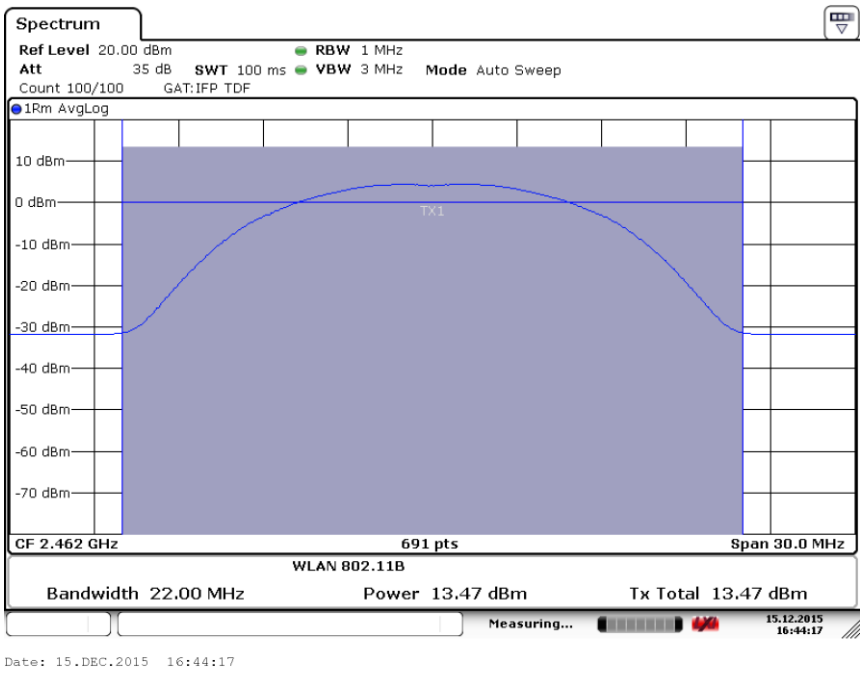


Fig.9 Maximum Average Output Power (802.11b, Ch 11,5.5Mbps)

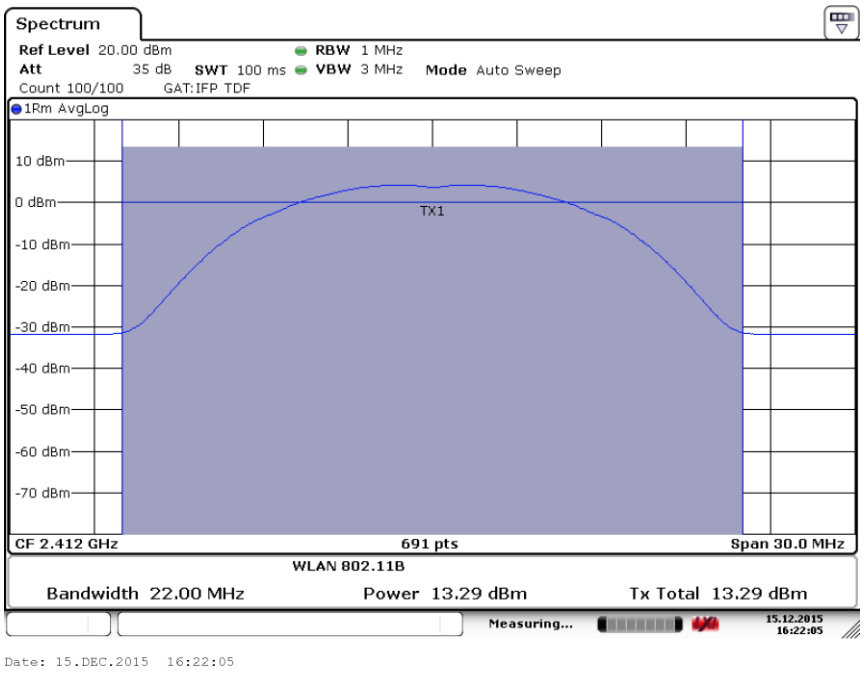


Fig.10 Maximum Average Output Power (802.11b, Ch 1,11Mbps)

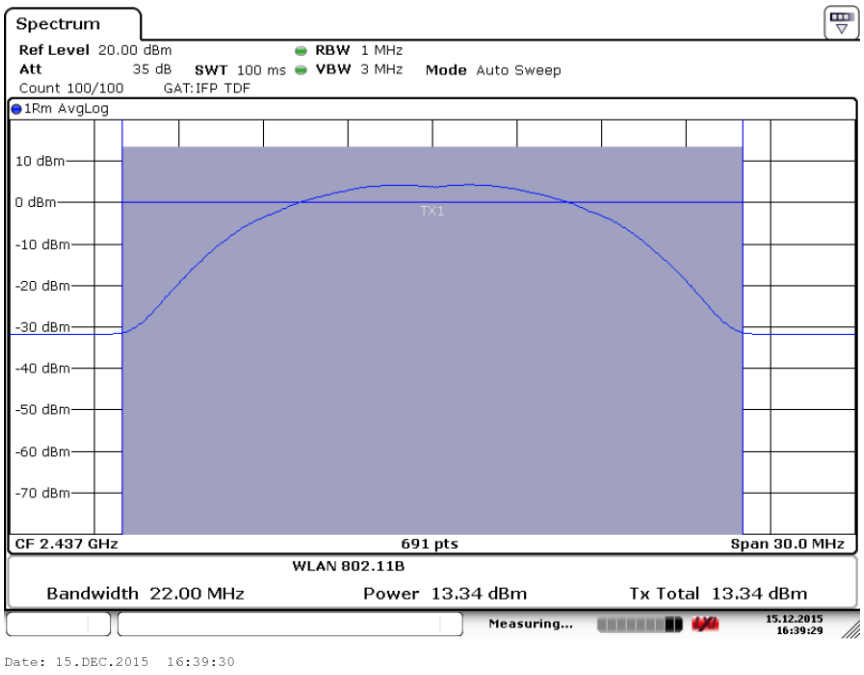


Fig.11 Maximum Average Output Power (802.11b, Ch 6,11Mbps)

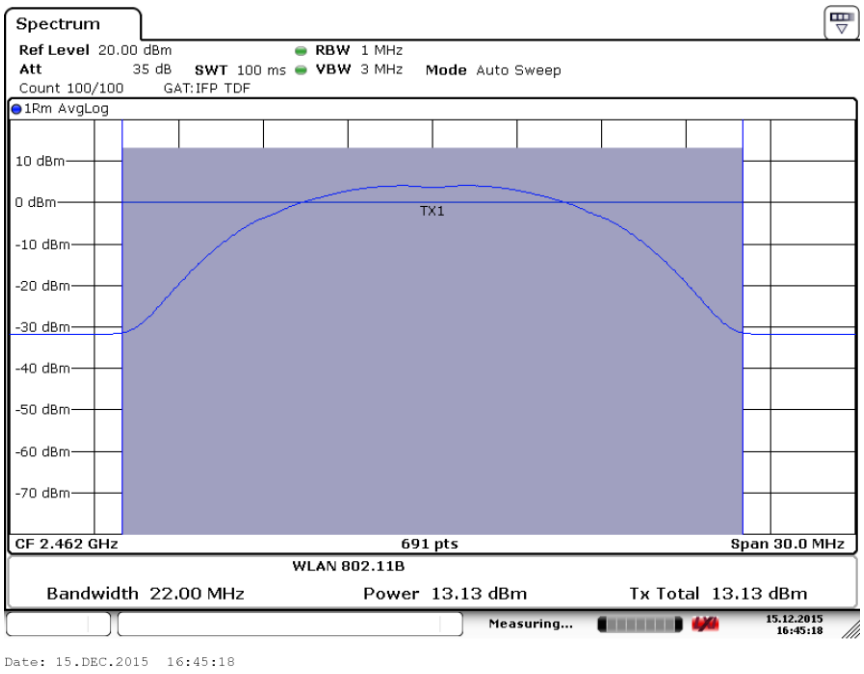


Fig.12 Maximum Average Output Power (802.11b, Ch 11,11Mbps)

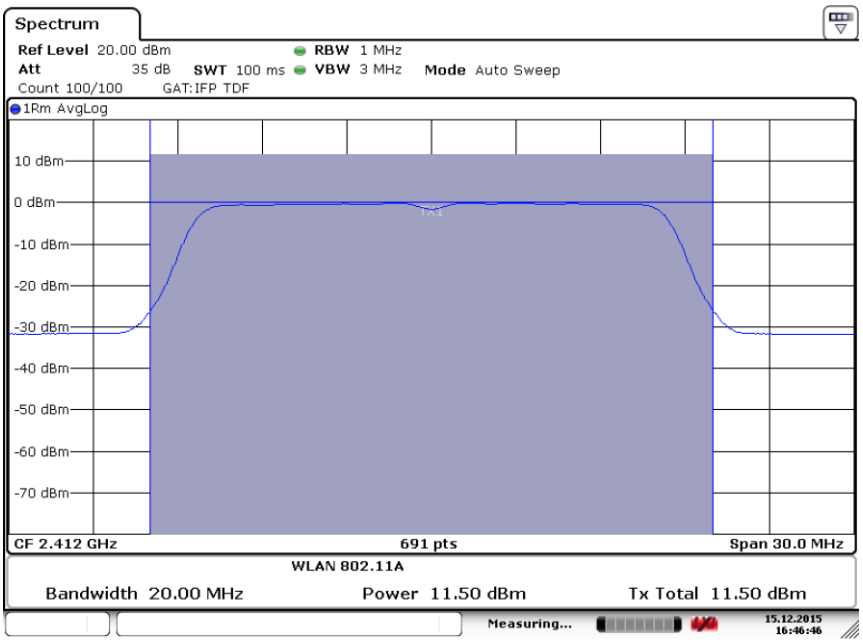


Fig.13 Maximum Average Output Power (802.11g, Ch 1,6Mbps)

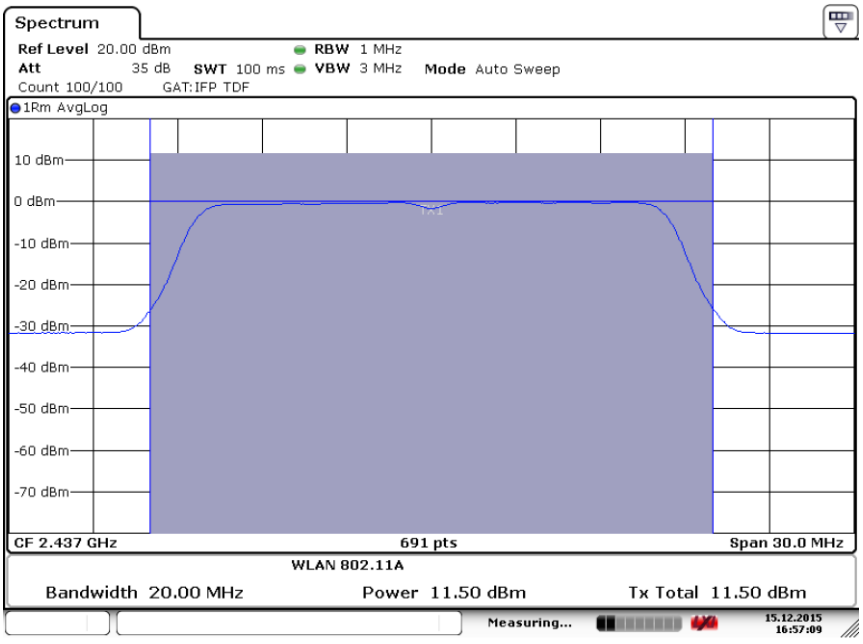


Fig.14 Maximum Average Output Power (802.11g, Ch 6,6Mbps)

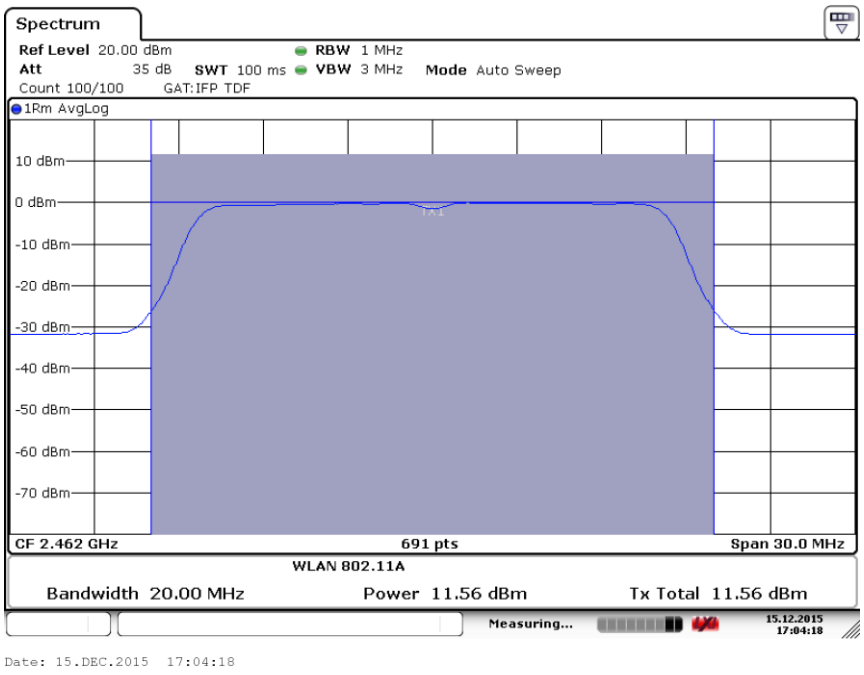


Fig.15 Maximum Average Output Power (802.11g, Ch 11,6Mbps)

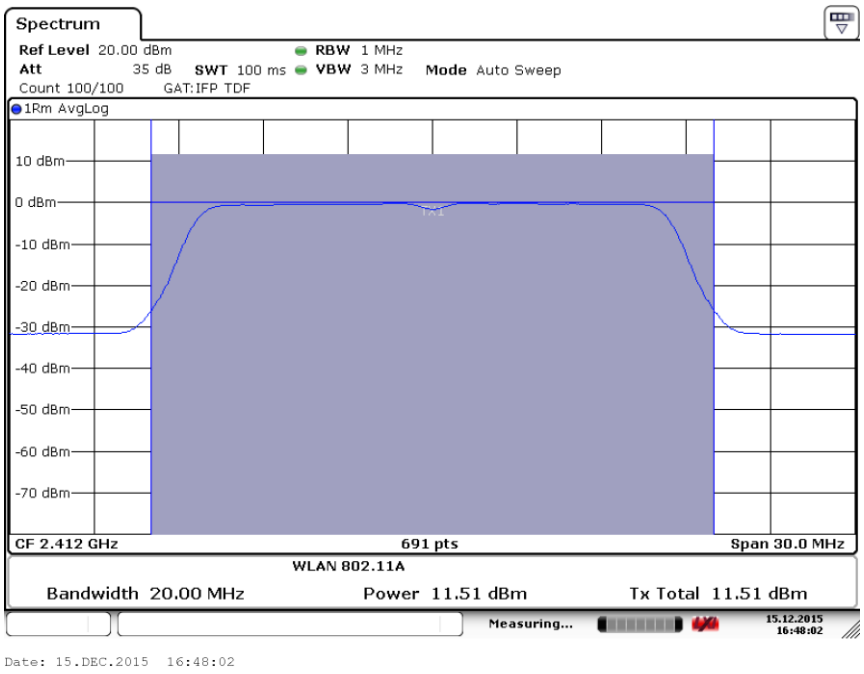


Fig.16 Maximum Average Output Power (802.11g, Ch 1,9Mbps)

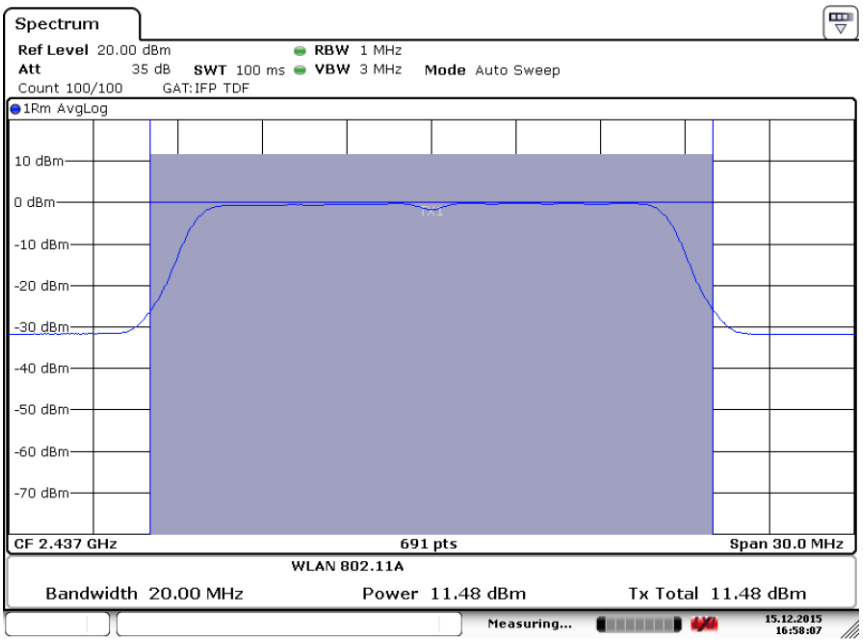


Fig.17 Maximum Average Output Power (802.11g, Ch 6,9Mbps)

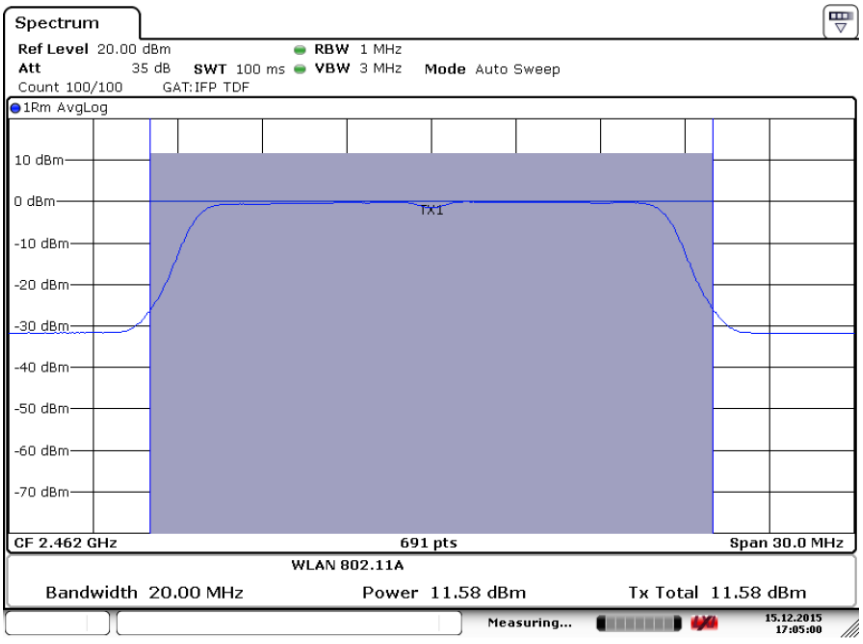


Fig.18 Maximum Average Output Power (802.11g, Ch 11,9Mbps)

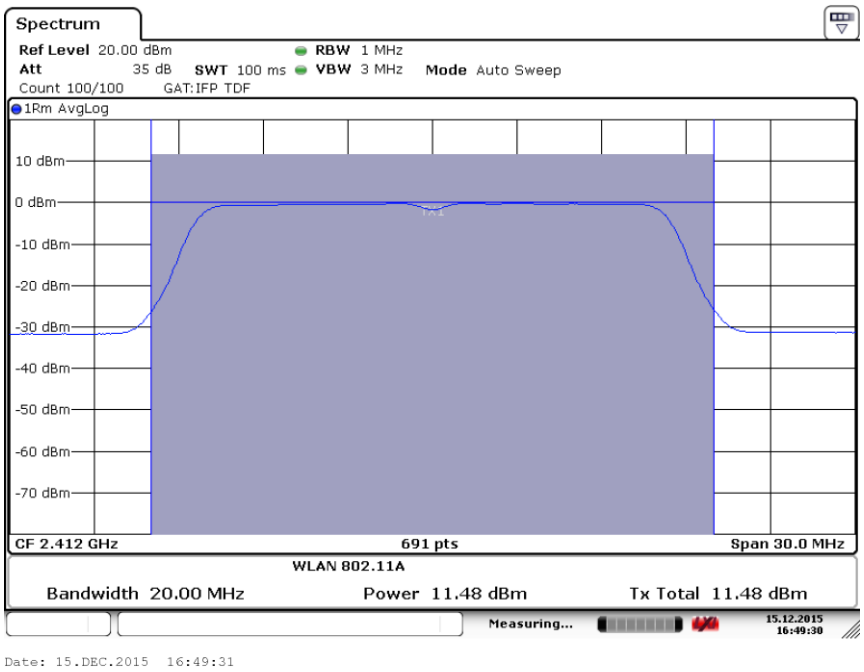


Fig.19 Maximum Average Output Power (802.11g, Ch 1,12Mbps)

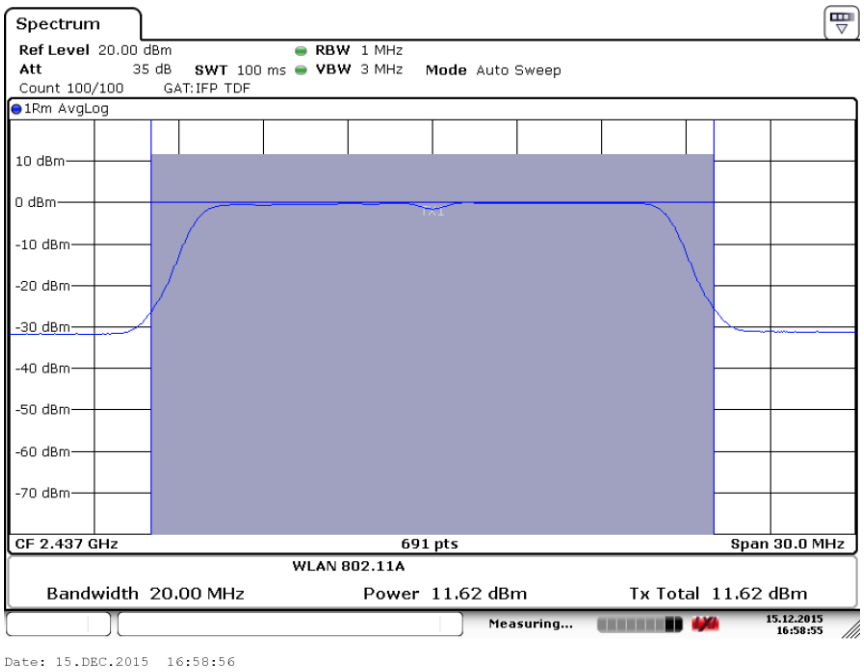


Fig.20 Maximum Average Output Power (802.11g, Ch 6,12Mbps)

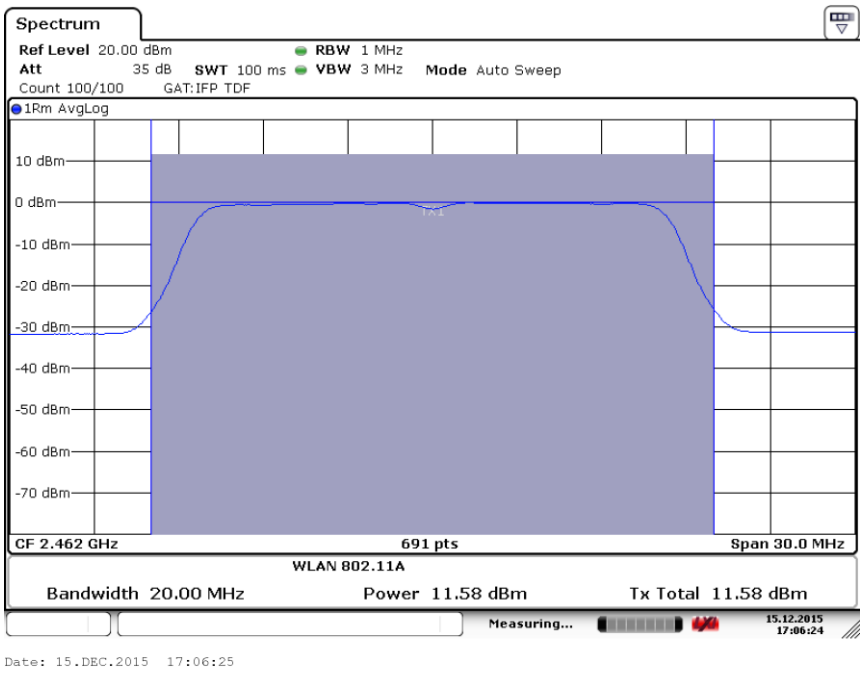


Fig.21 Maximum Average Output Power (802.11g, Ch 11,12Mbps)

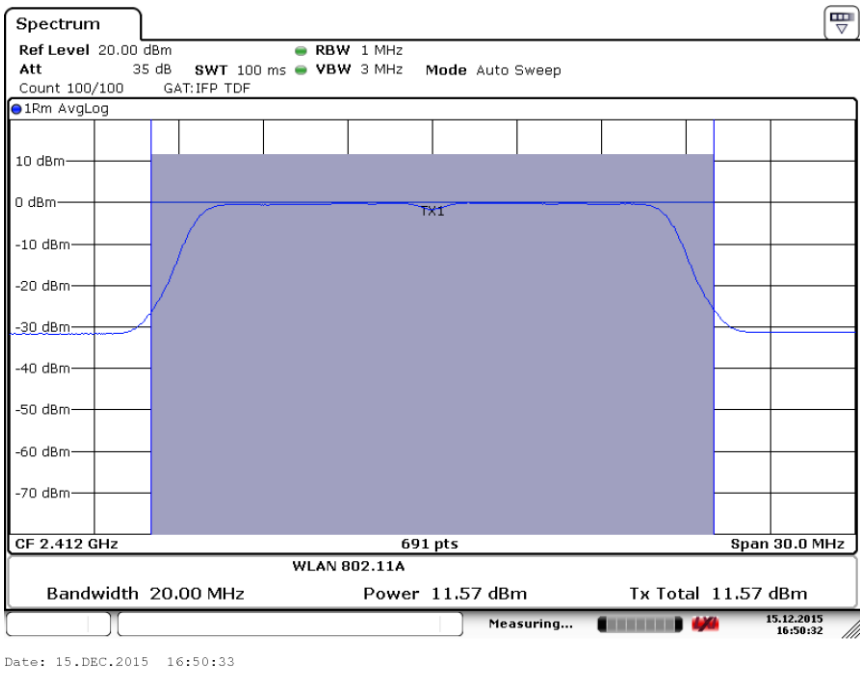


Fig.22 Maximum Average Output Power (802.11g, Ch 1,18Mbps)

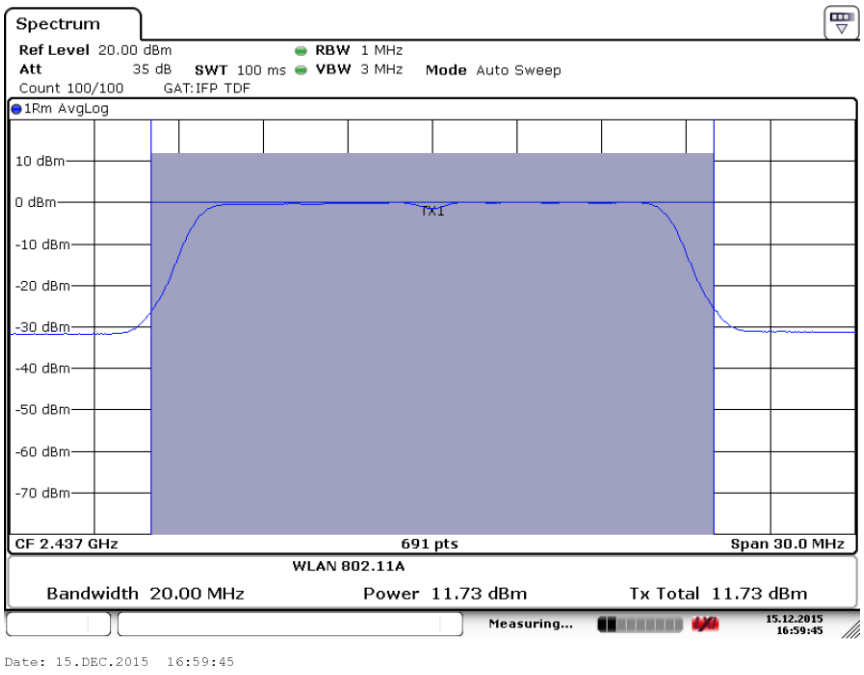


Fig.23 Maximum Average Output Power (802.11g, Ch 6,18Mbps)

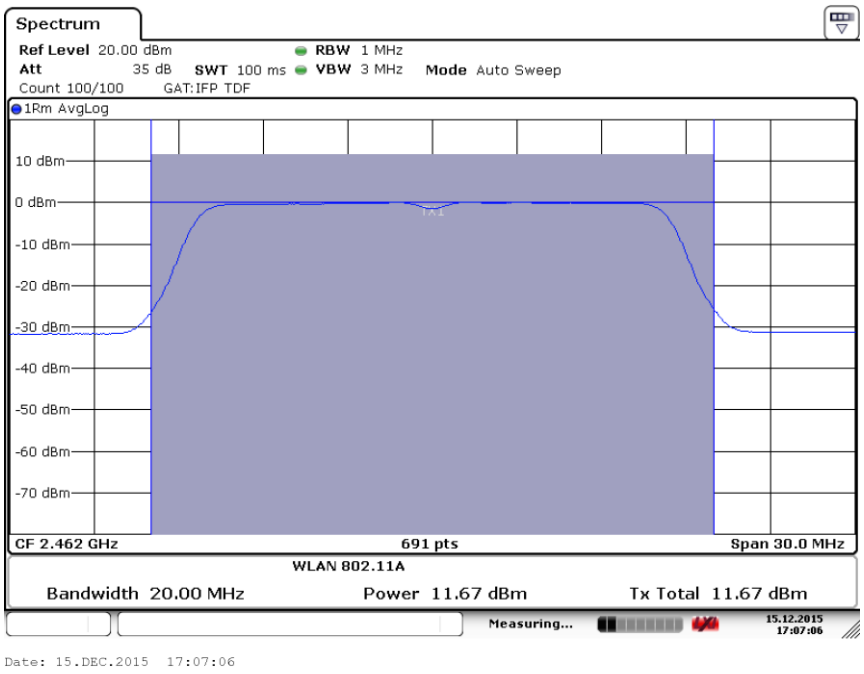


Fig.24 Maximum Average Output Power (802.11g, Ch 11,18Mbps)

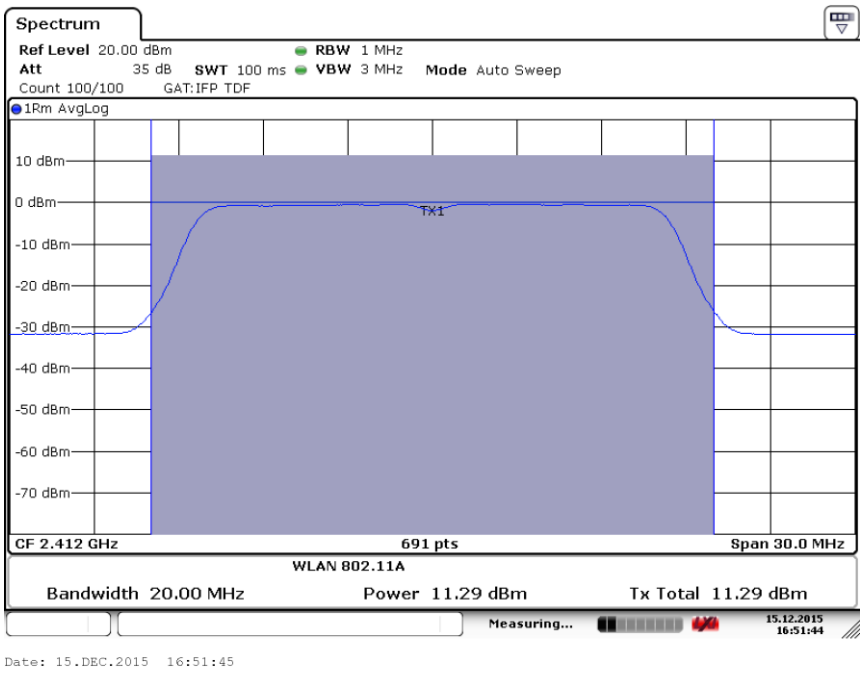


Fig.25 Maximum Average Output Power (802.11g, Ch 1,24Mbps)

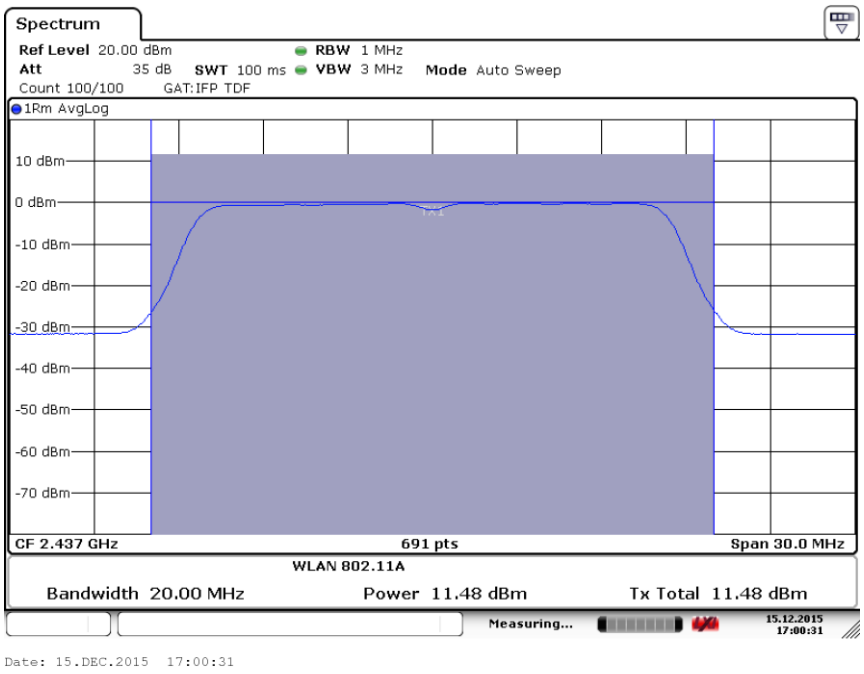


Fig.26 Maximum Average Output Power (802.11g, Ch 6,24Mbps)

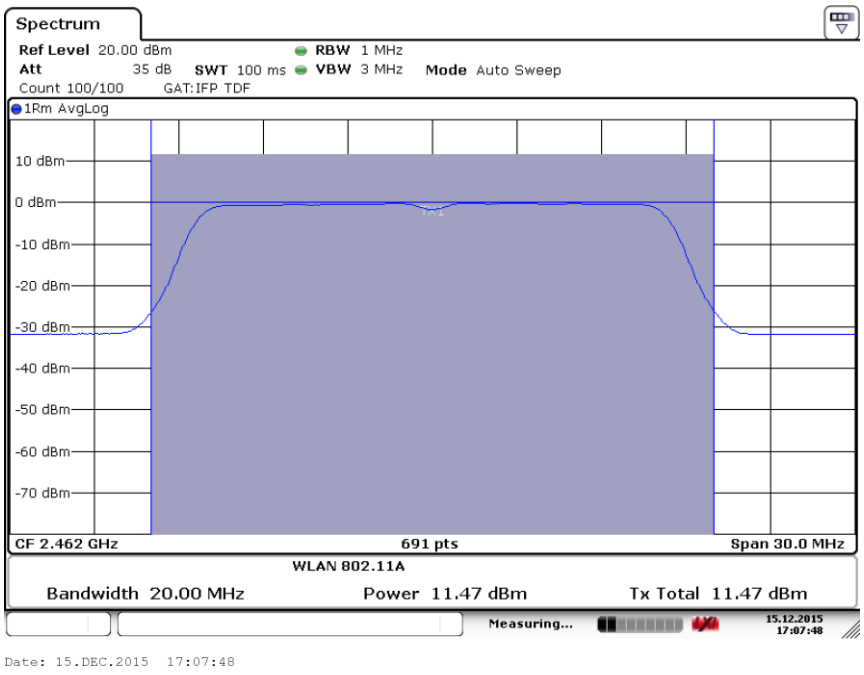


Fig.27 Maximum Average Output Power (802.11g, Ch 11,24Mbps)

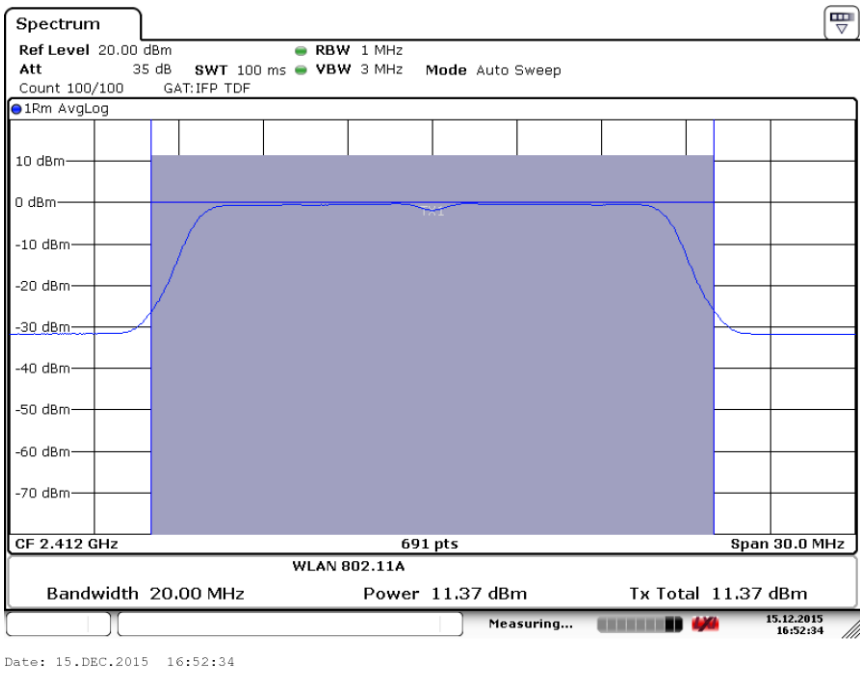


Fig.28 Maximum Average Output Power (802.11g, Ch 1,36Mbps)

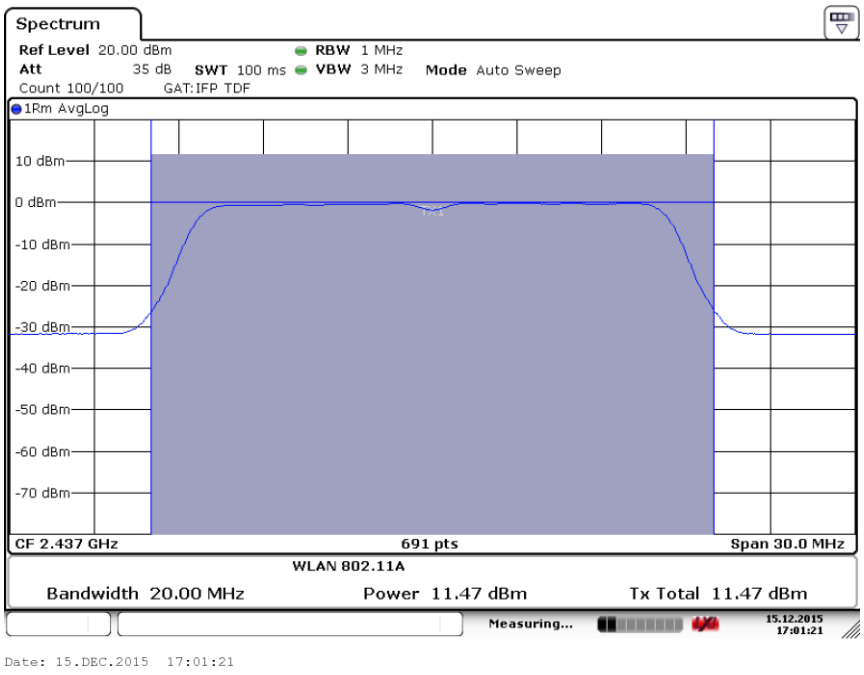


Fig.29 Maximum Average Output Power (802.11g, Ch 6,36Mbps)

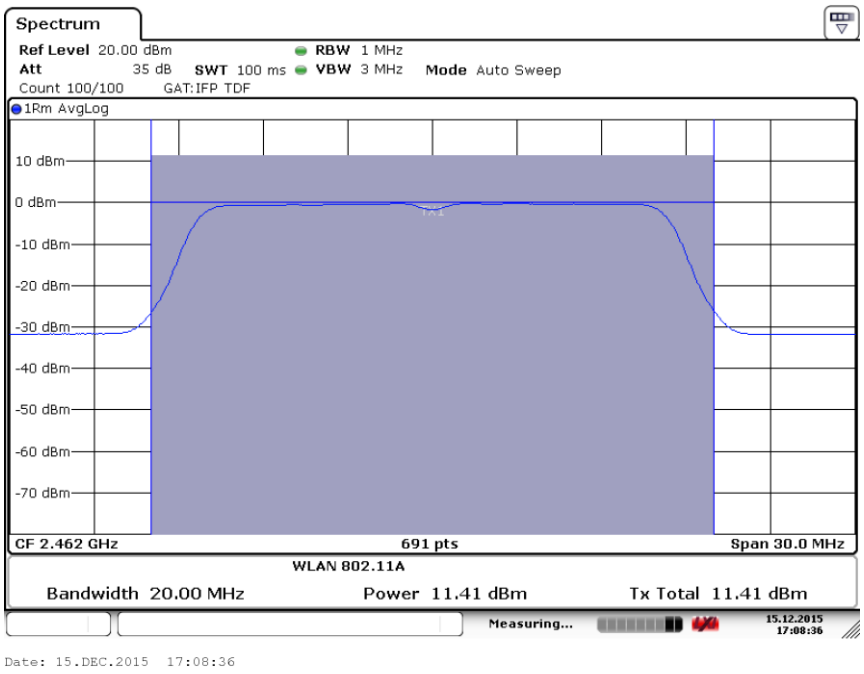


Fig.30 Maximum Average Output Power (802.11g, Ch 11,36Mbps)

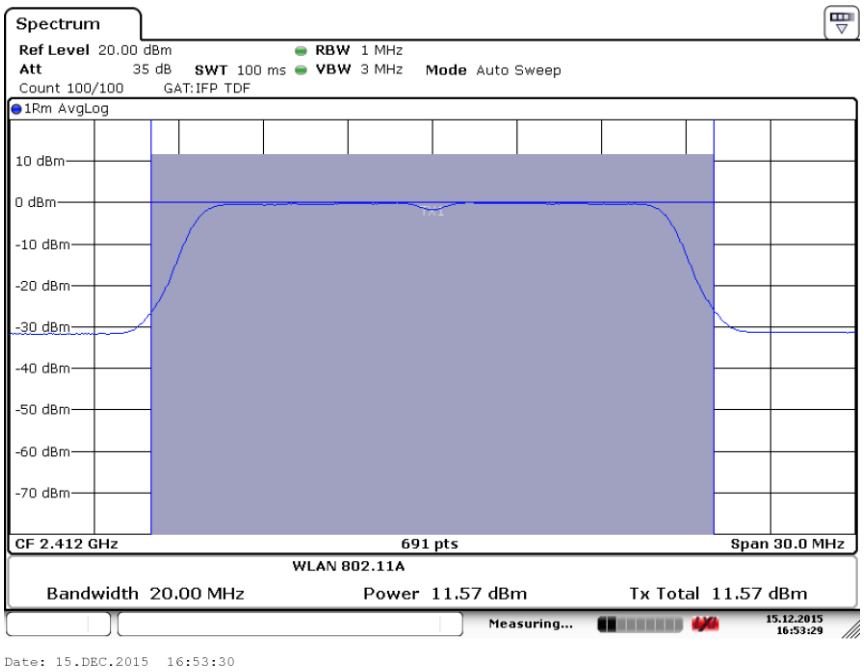


Fig.31 Maximum Average Output Power (802.11g, Ch 1,48Mbps)

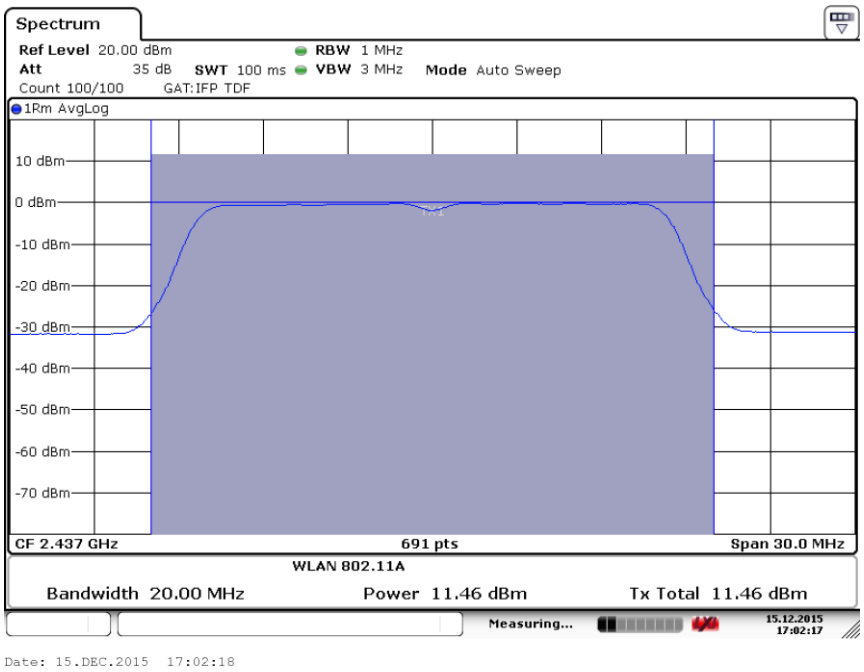


Fig.32 Maximum Average Output Power (802.11g, Ch 6,48Mbps)

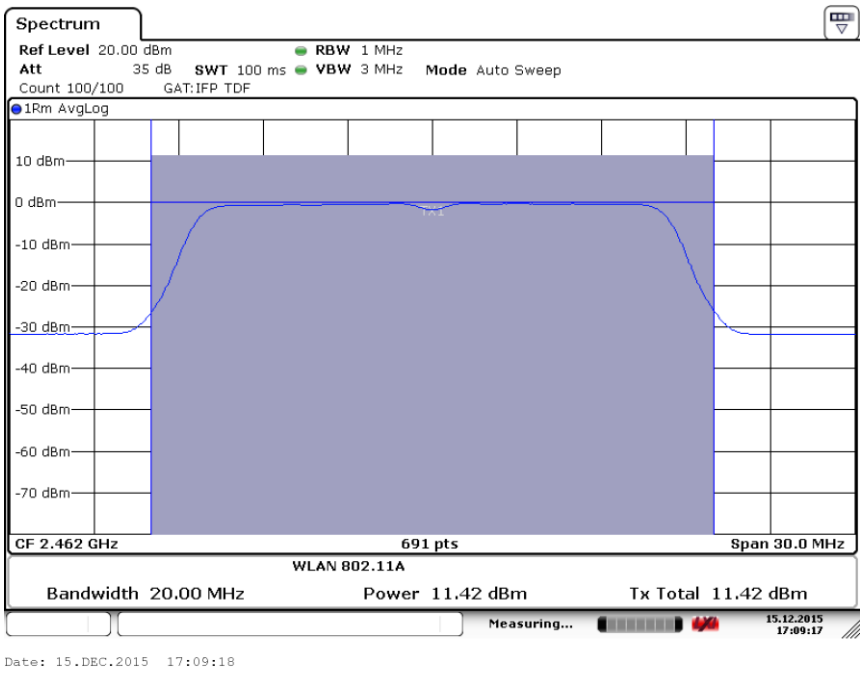


Fig.33 Maximum Average Output Power (802.11g, Ch 11,48Mbps)

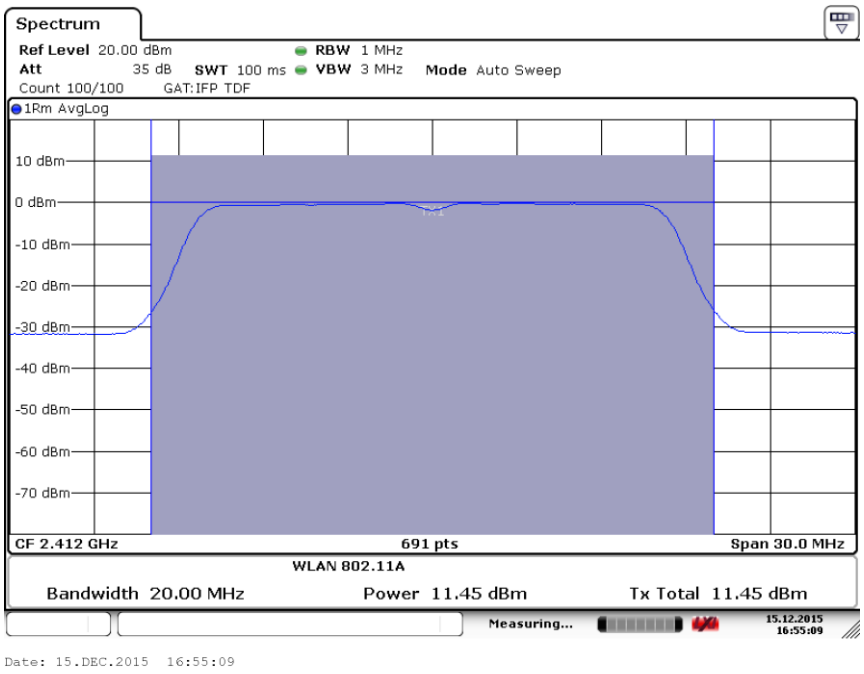


Fig.34 Maximum Average Output Power (802.11g, Ch 1,54Mbps)

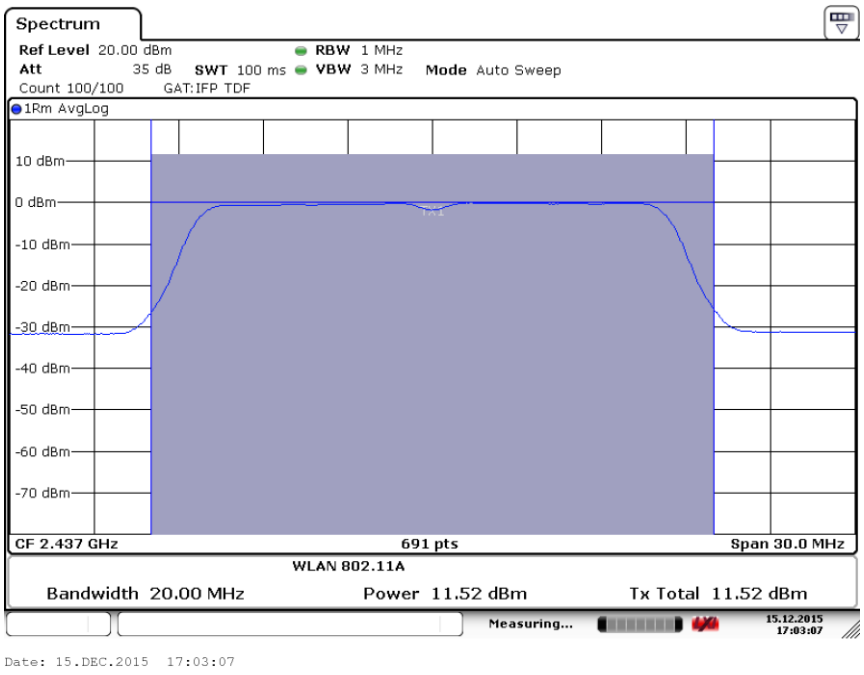


Fig.35 Maximum Average Output Power (802.11g, Ch 6,54Mbps)

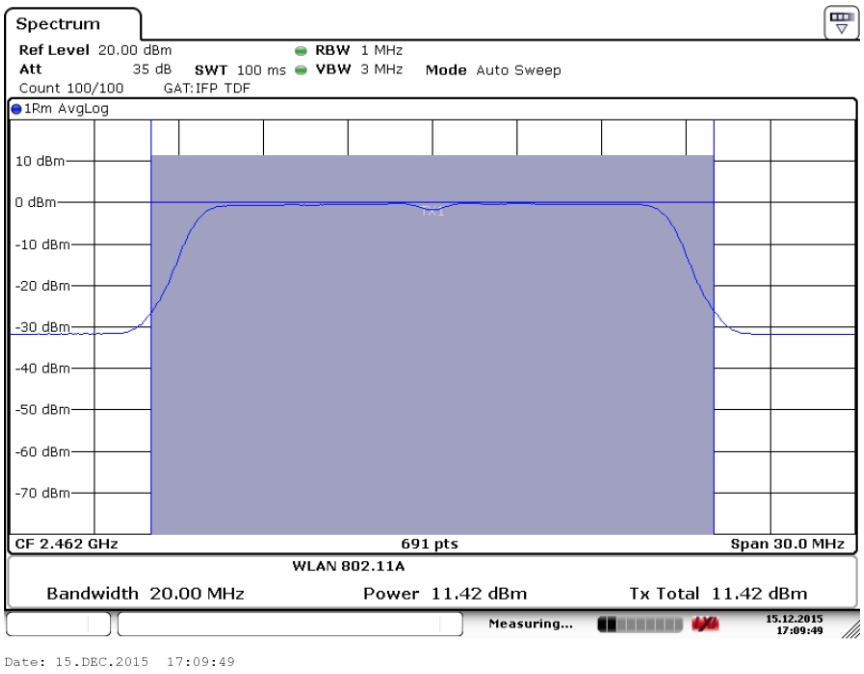


Fig.36 Maximum Average Output Power (802.11g, Ch 11,54Mbps)

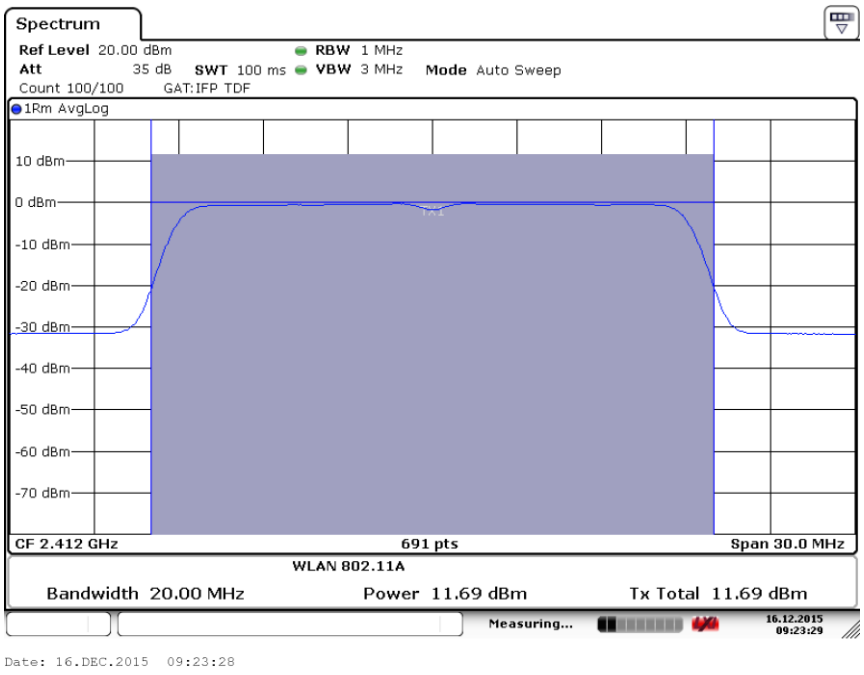


Fig.37 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS0)

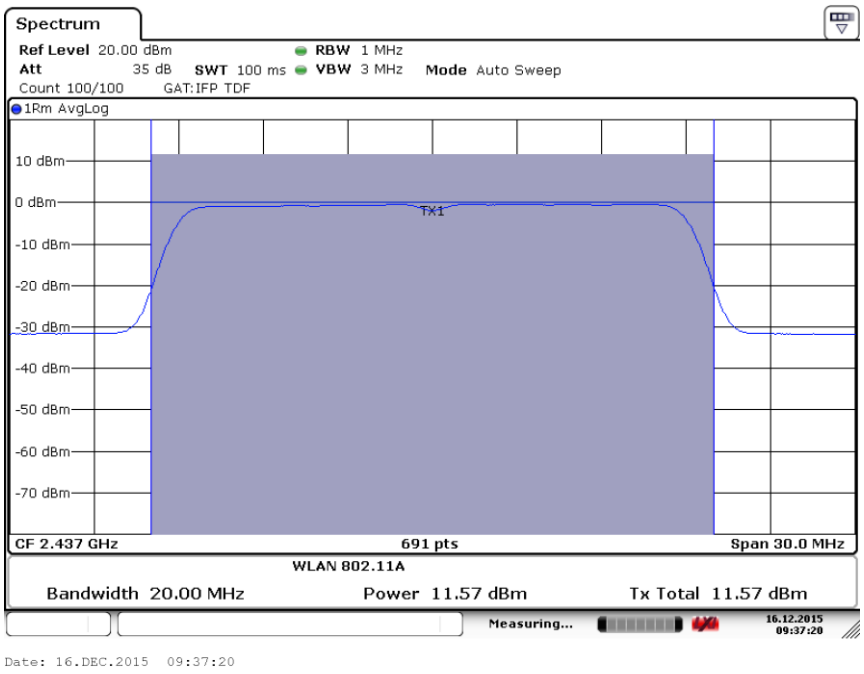


Fig.38 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS0)

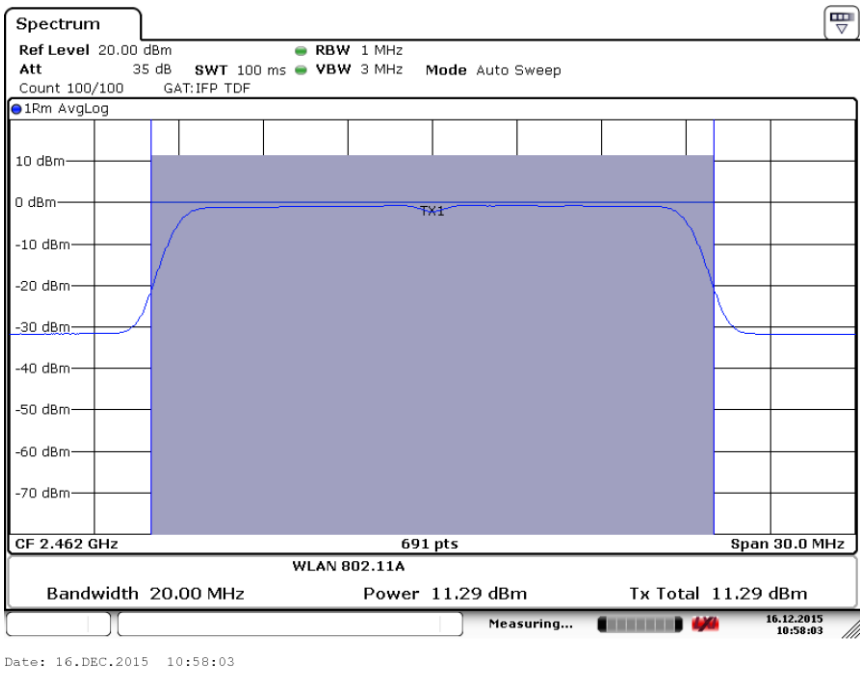


Fig.39 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS0)

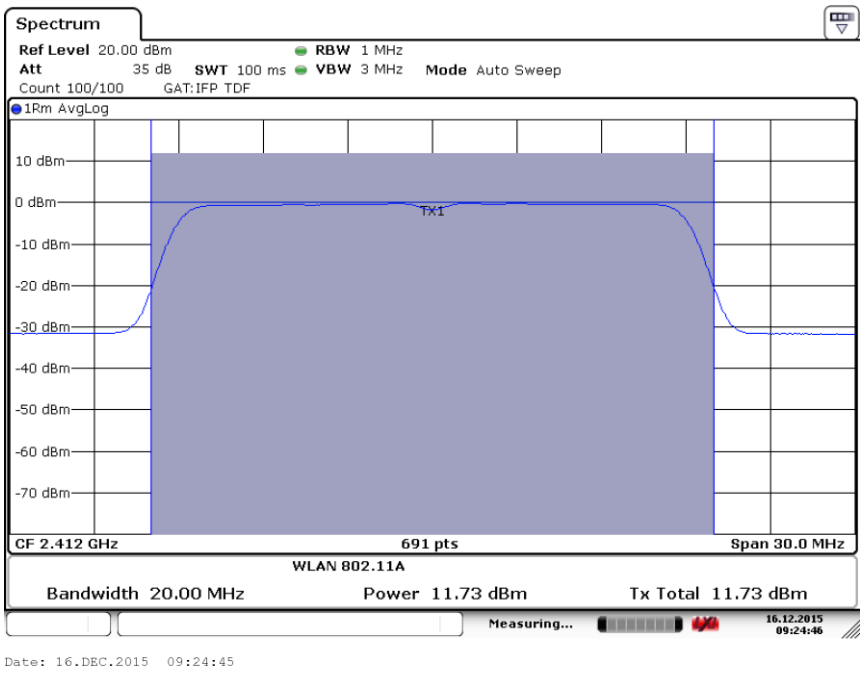


Fig.40 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS1)

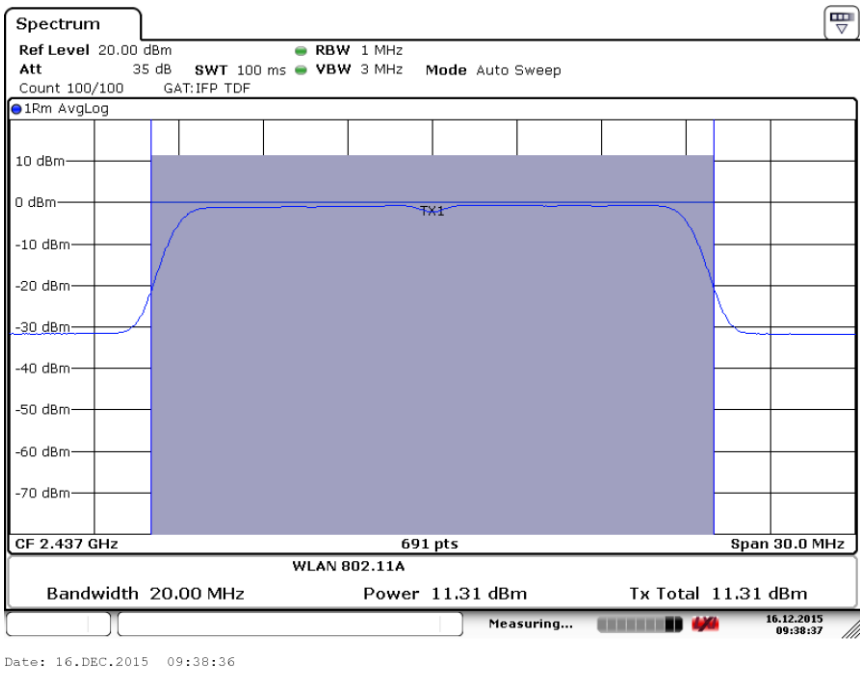


Fig.41 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS1)

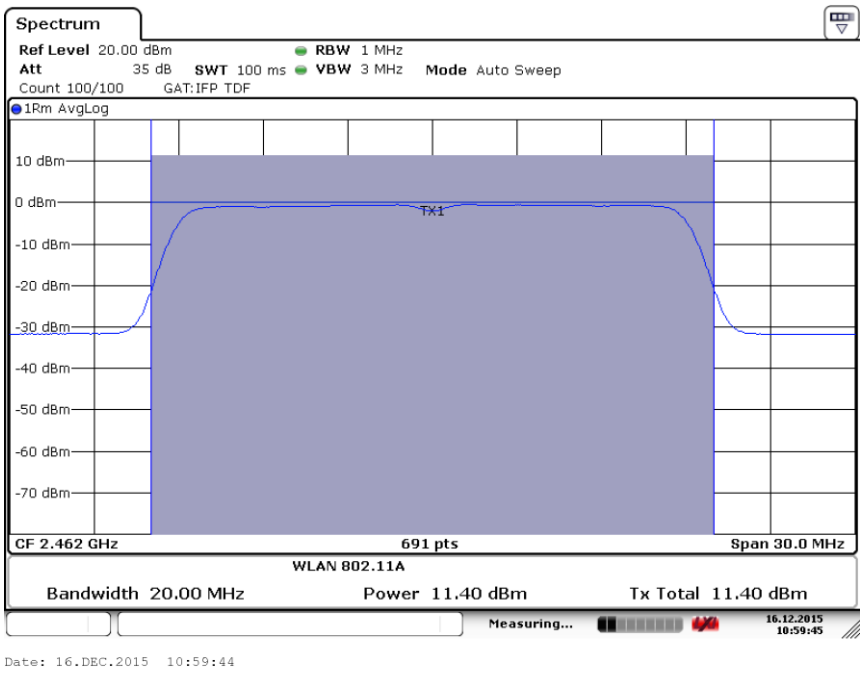


Fig.42 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS1)

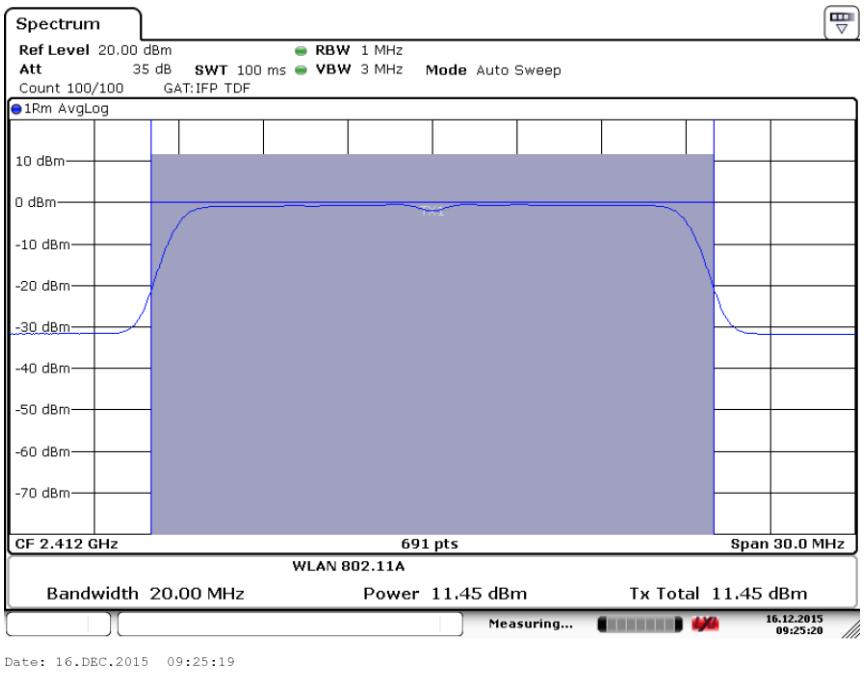


Fig.43 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS2)

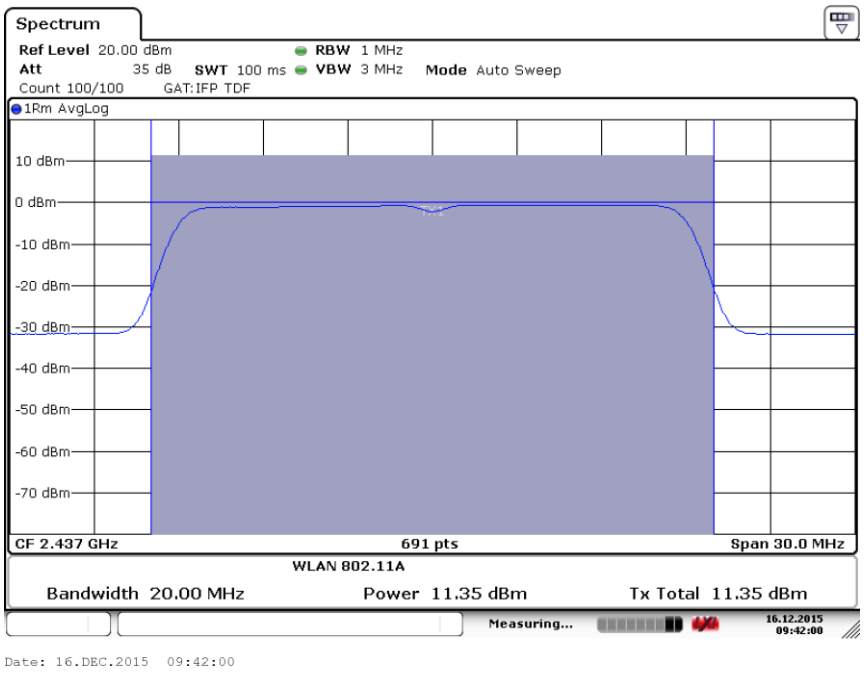


Fig.44 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS2))

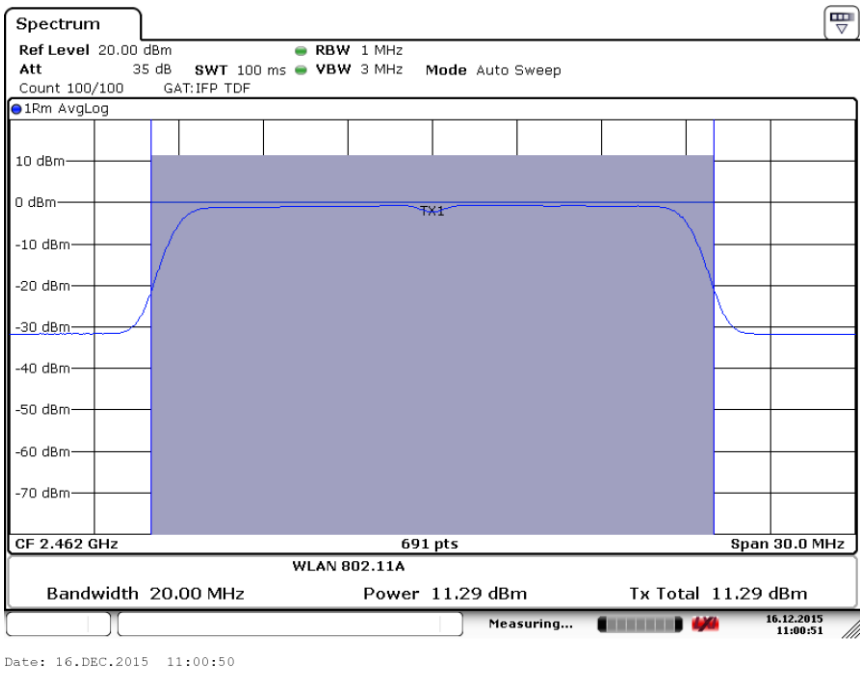


Fig.45 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS2)

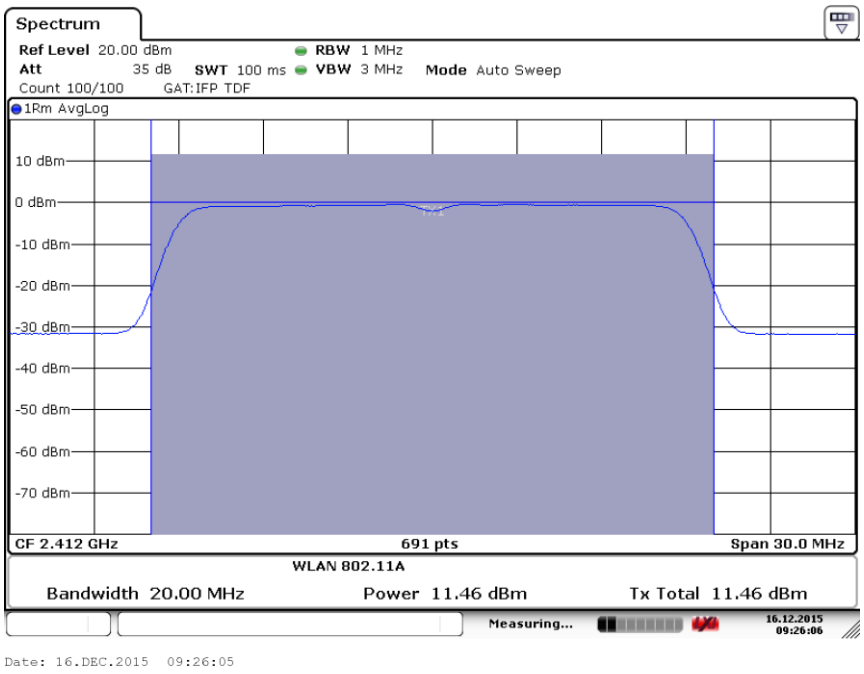


Fig.46 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS3)

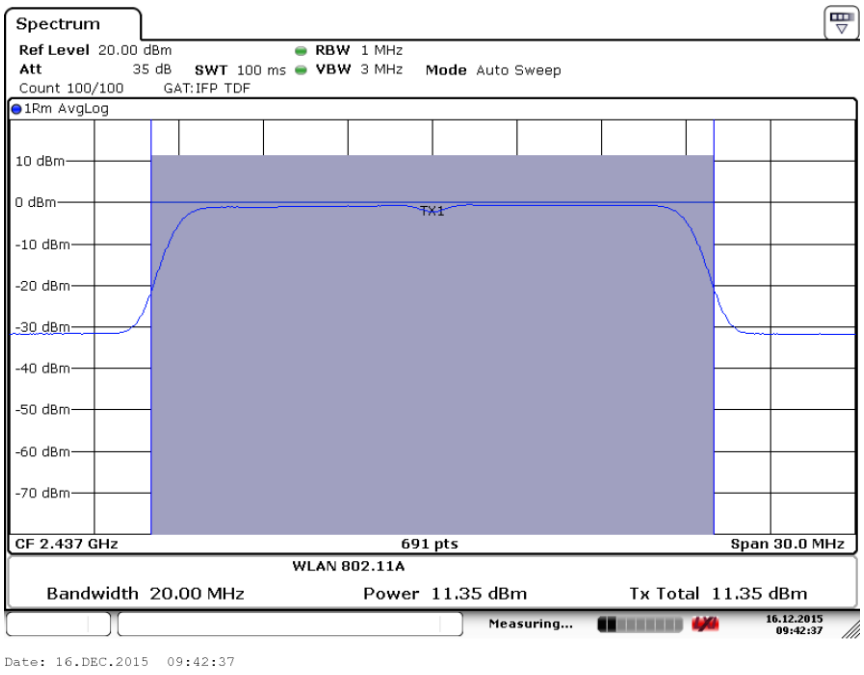


Fig.47 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS3)

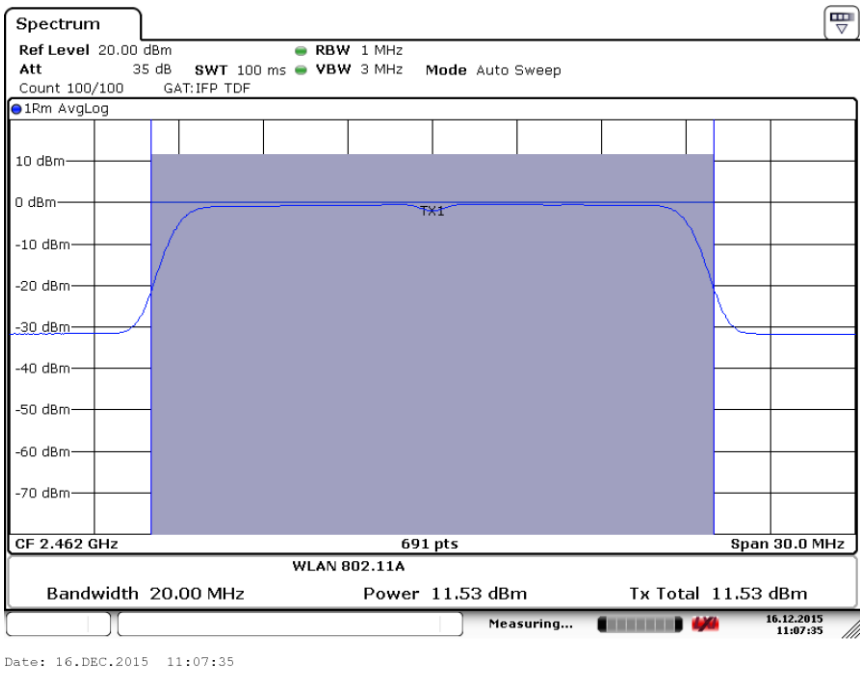


Fig.48 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS3)

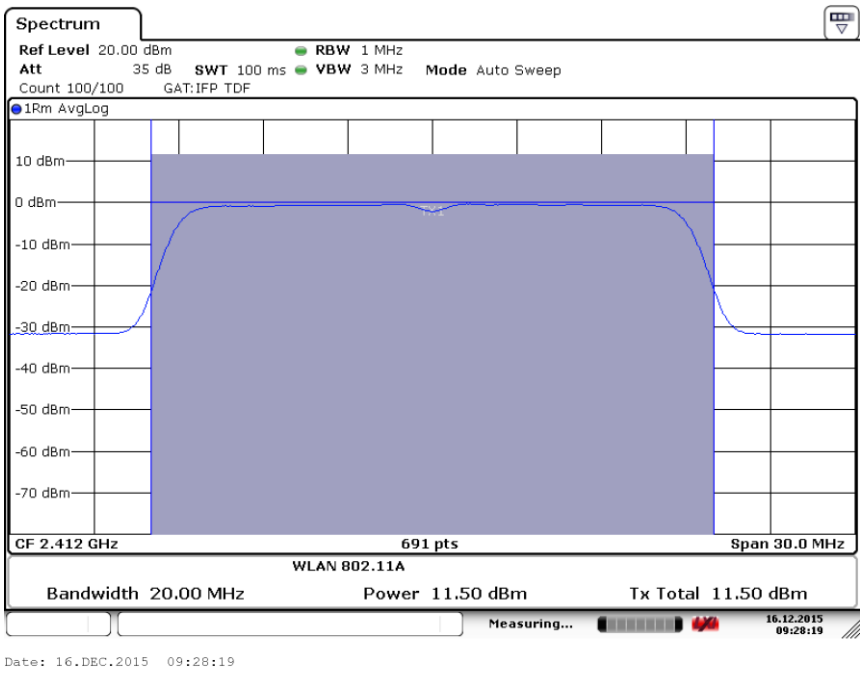


Fig.49 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS4)

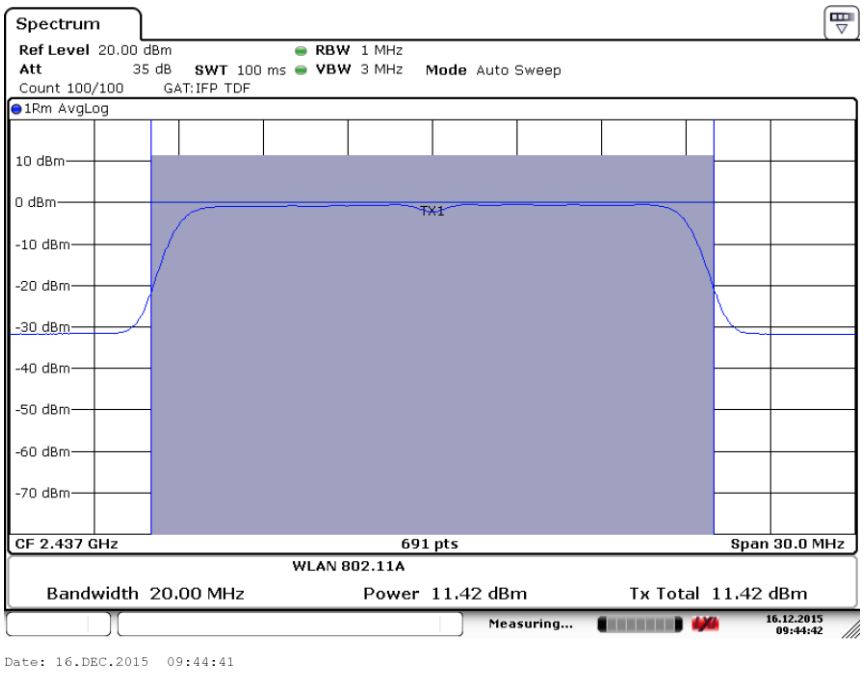


Fig.50 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS4)

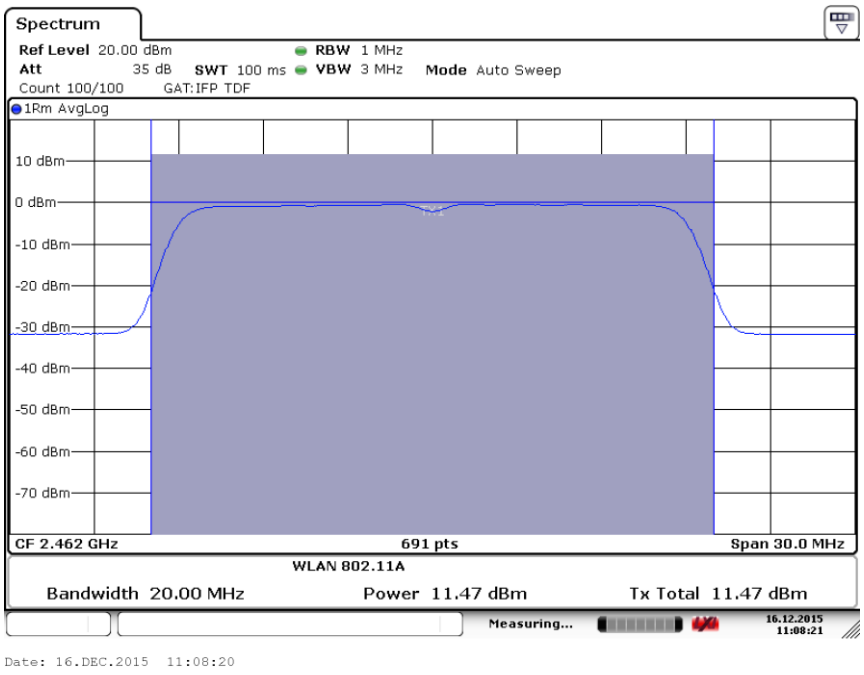


Fig.51 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS4)

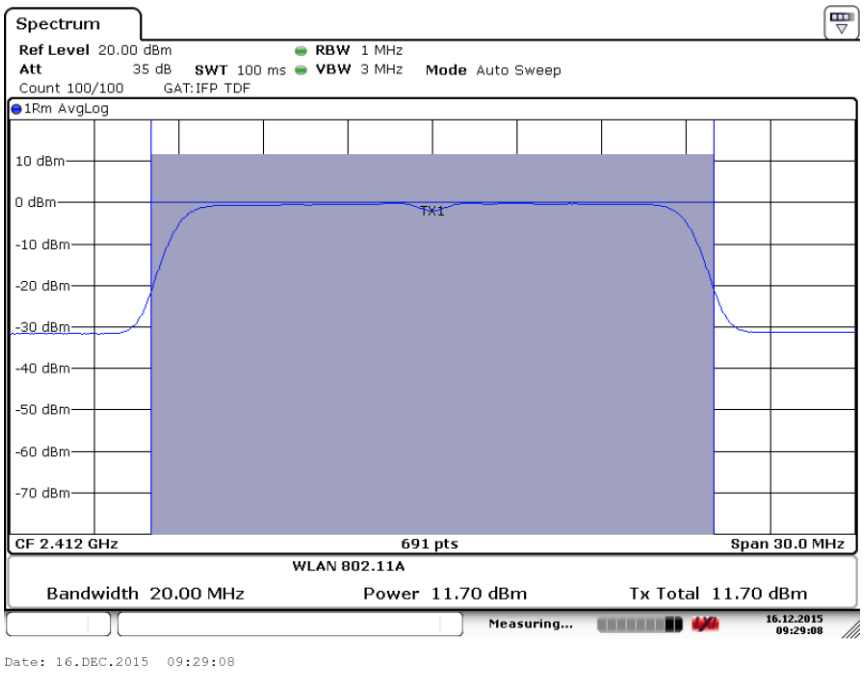


Fig.52 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS5)

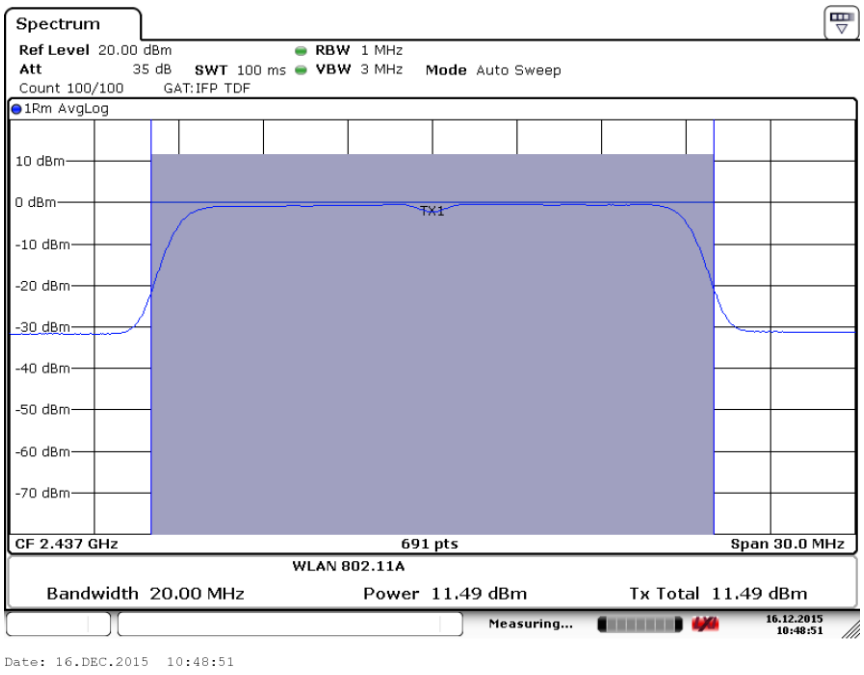


Fig.53 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS5)

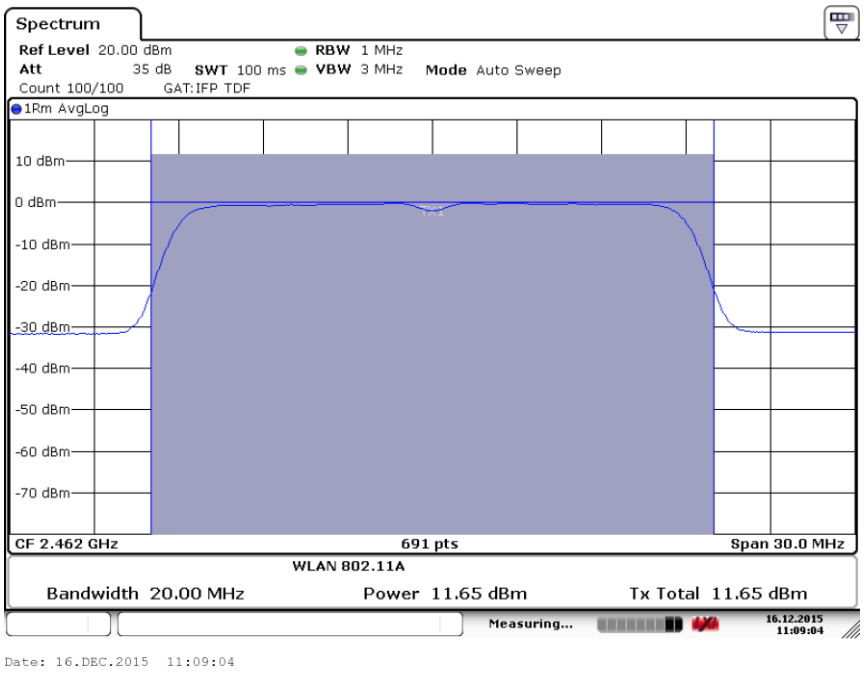


Fig.54 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS5)

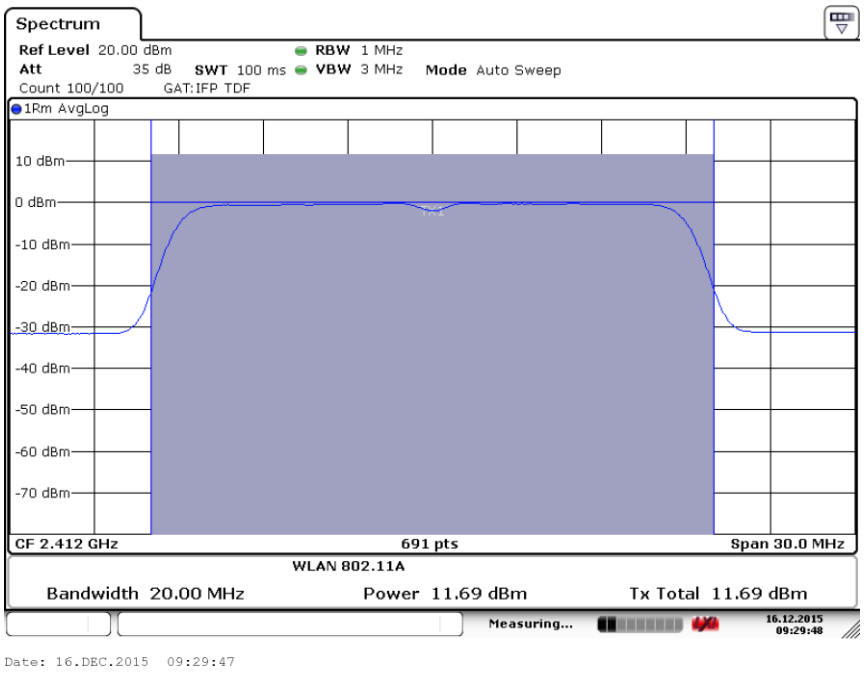


Fig.55 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS6)

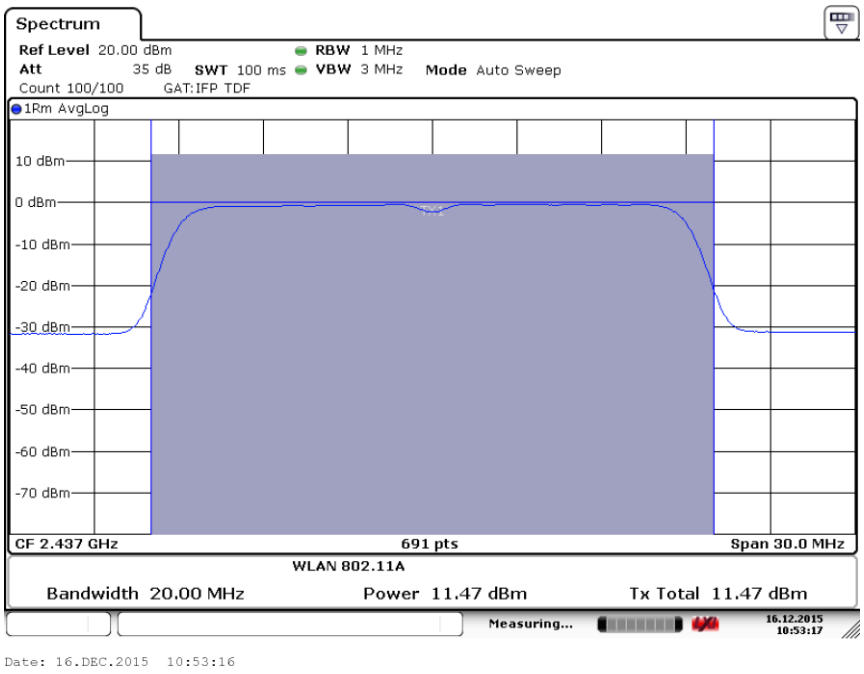


Fig.56 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS6)

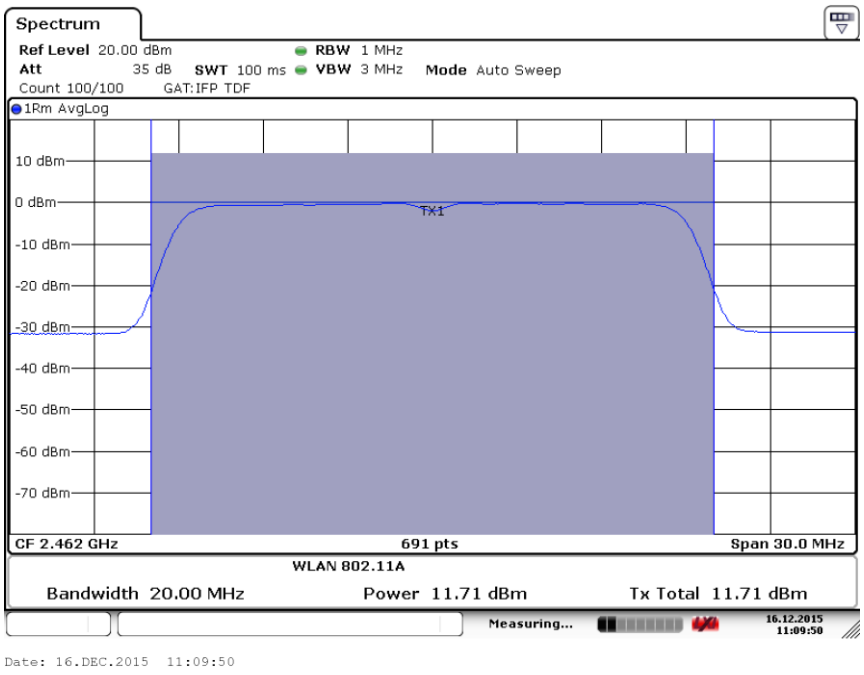


Fig.57 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS6)

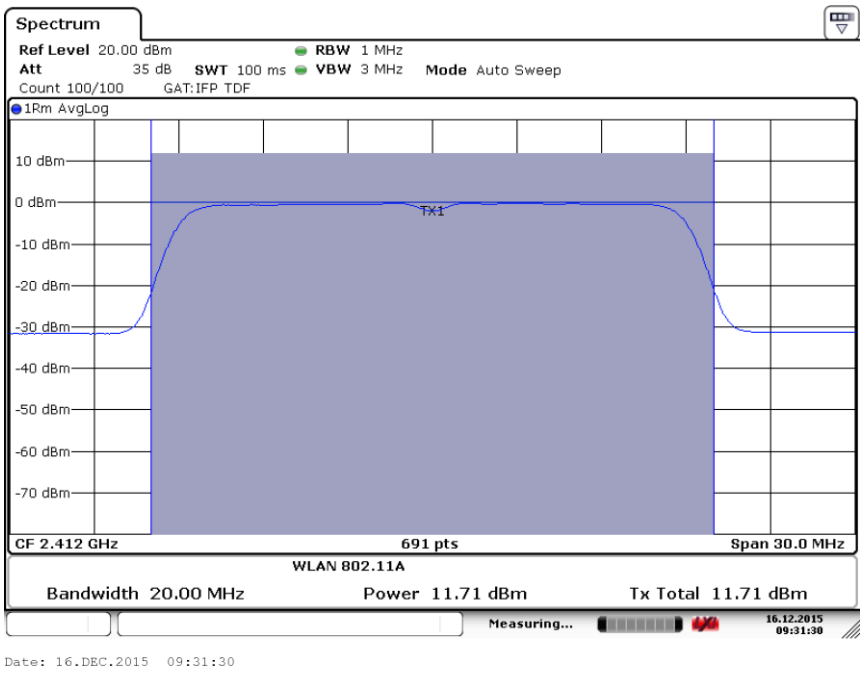
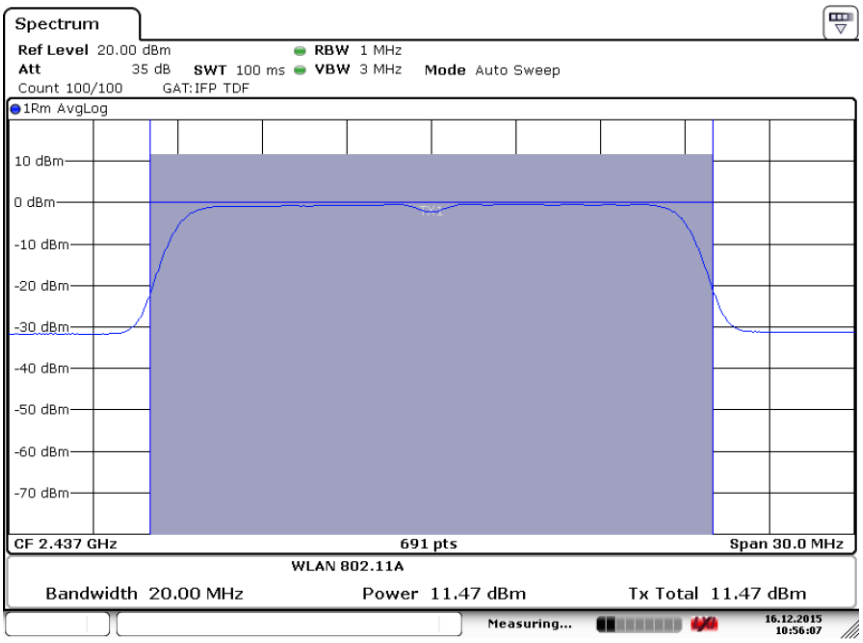
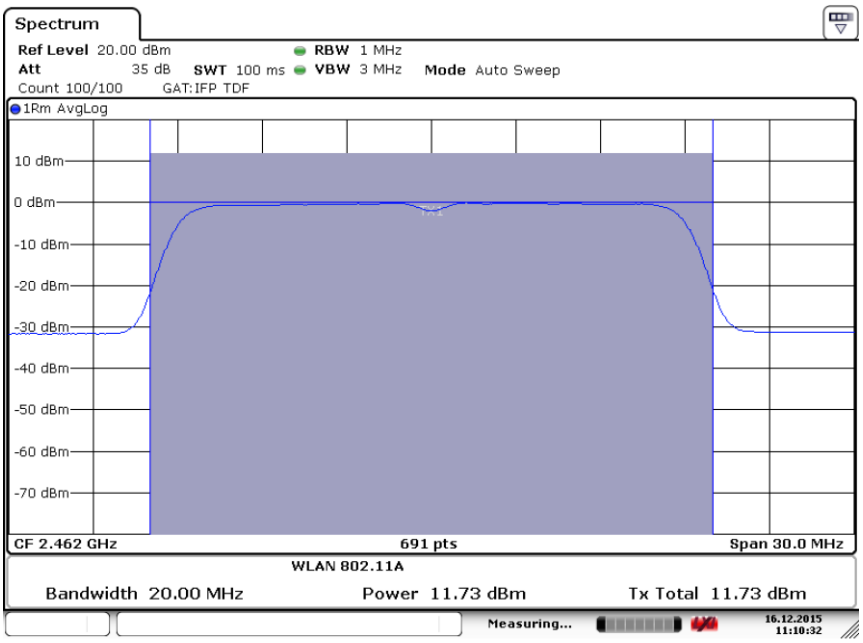


Fig.58 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS7)



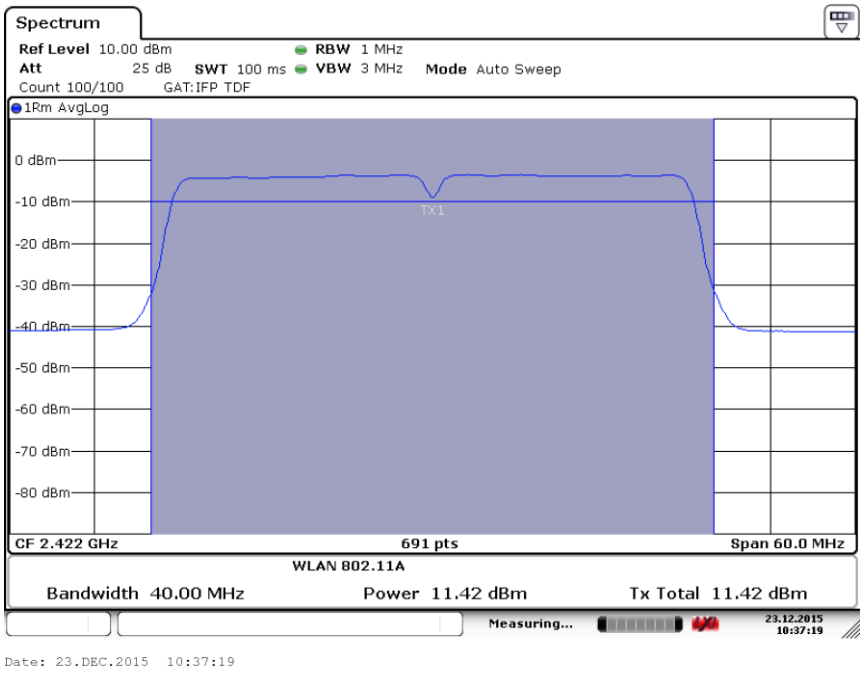
Date: 16.DEC.2015 10:56:07

Fig.59 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS7)



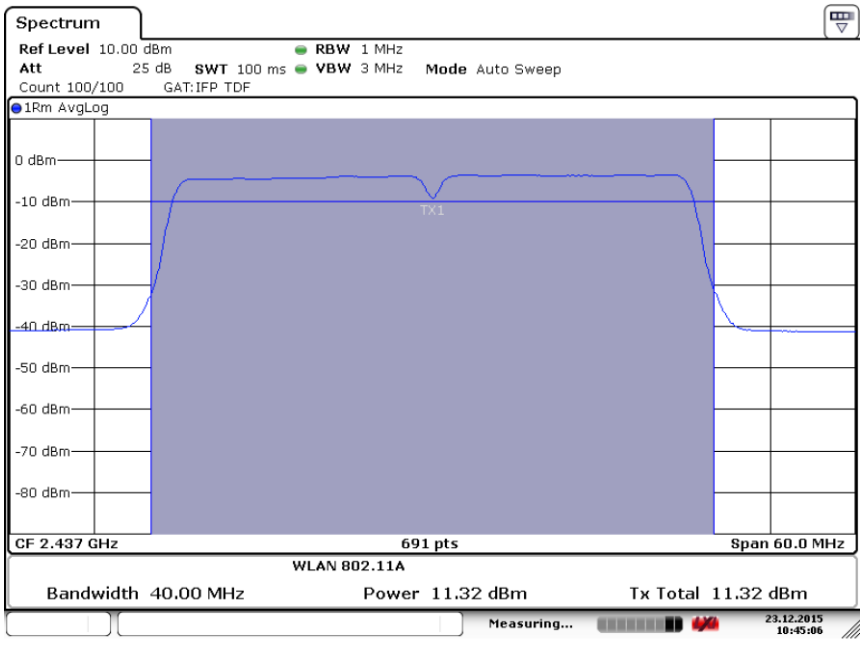
Date: 16.DEC.2015 11:10:32

Fig.60 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS7)



Date: 23.DEC.2015 10:37:19

Fig.61 Maximum Average Output Power (802.11n-40MHz, Ch 3,MCS0)



Date: 23.DEC.2015 10:45:06

Fig.62 Maximum Average Output Power (802.11n-40MHz, Ch 6,MCS0)

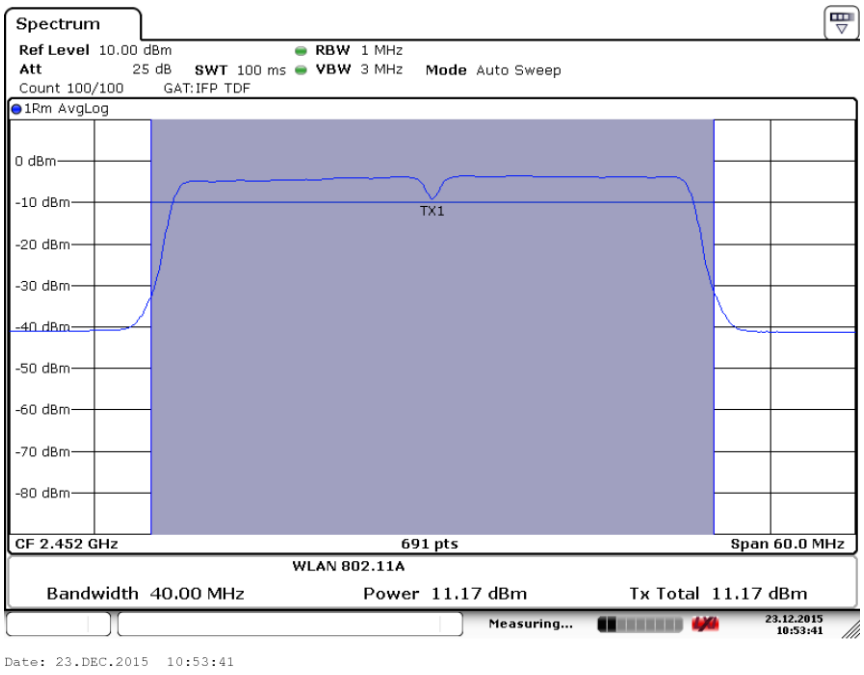


Fig.63 Maximum Average Output Power (802.11n-40MHz, Ch 9,MCS0)

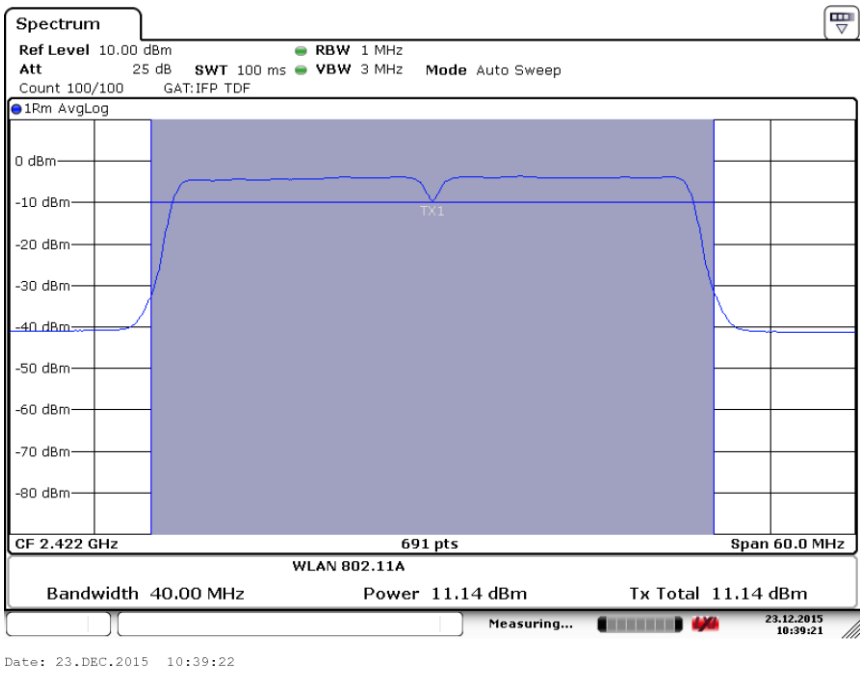


Fig.64 Maximum Average Output Power (802.11n-40MHz, Ch 3,MCS1)

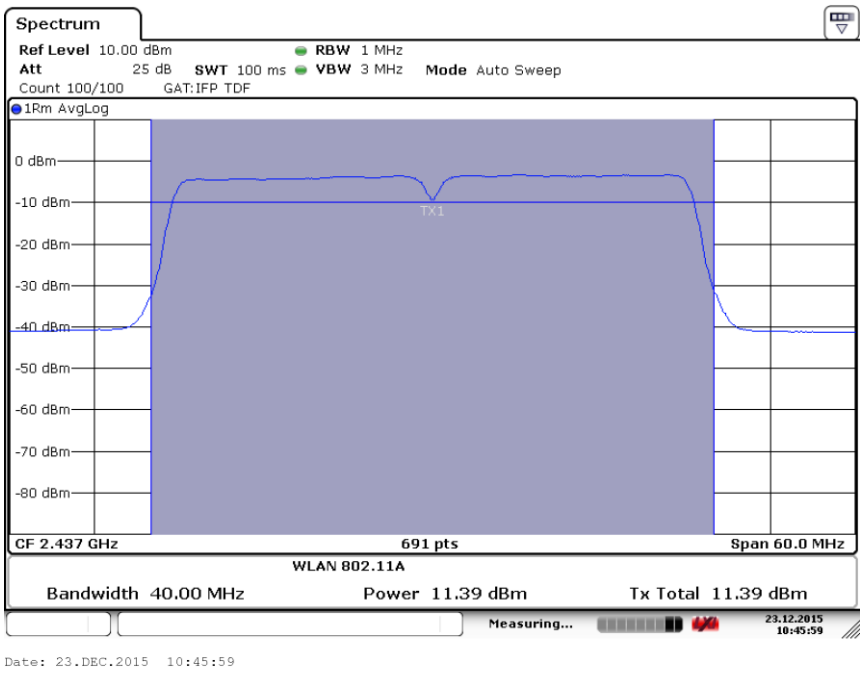


Fig.65 Maximum Average Output Power (802.11n-40MHz, Ch 6,MCS1)

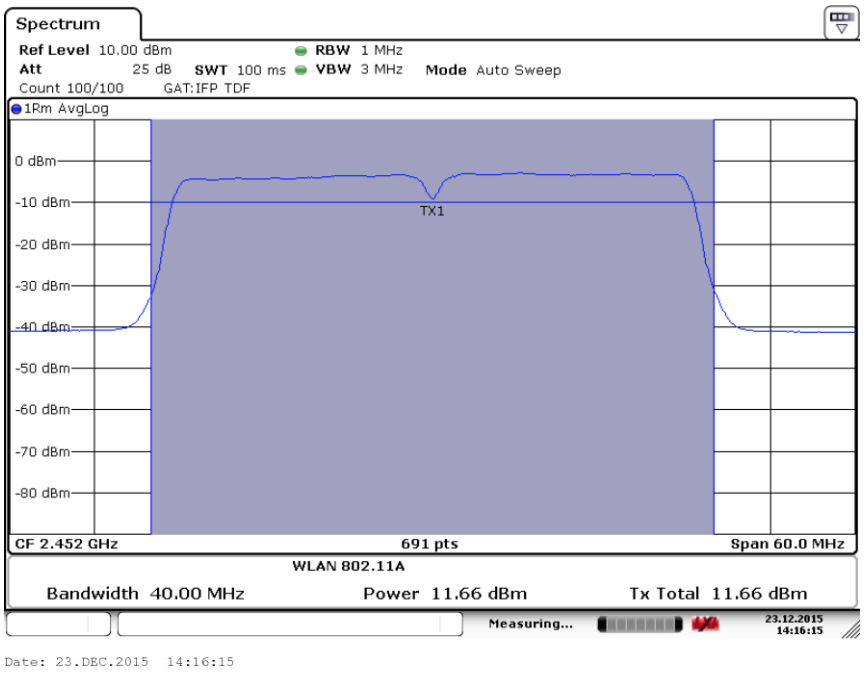


Fig.66 Maximum Average Output Power (802.11n-40MHz, Ch 9,MCS1)

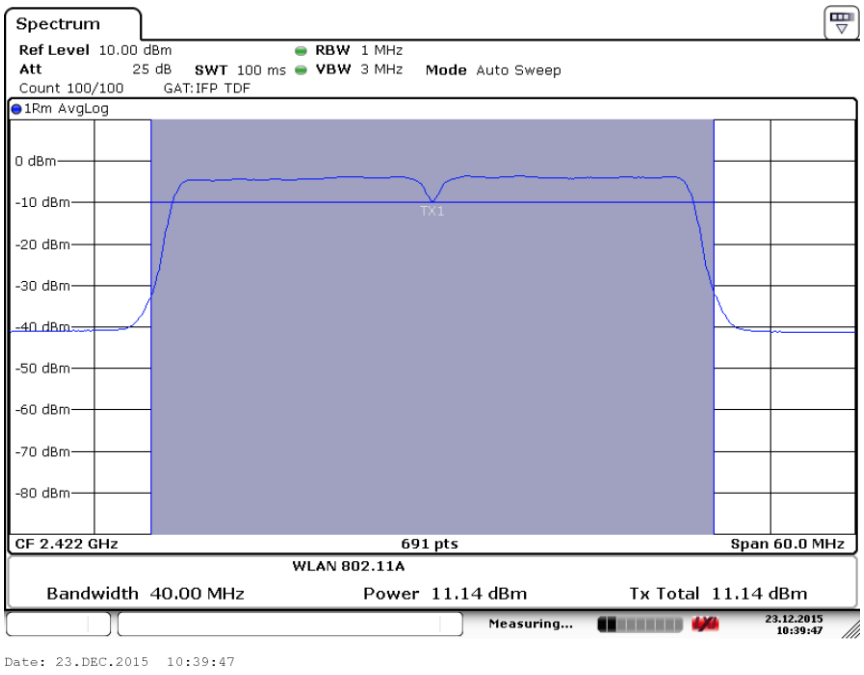


Fig.67 Maximum Average Output Power (802.11n-40MHz, Ch 3,MCS2)

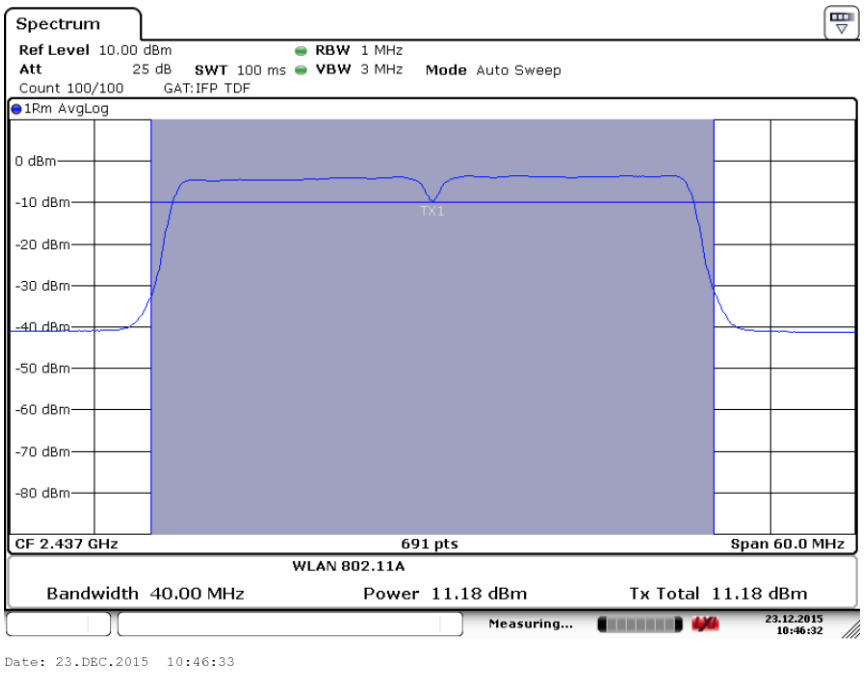


Fig.68 Maximum Average Output Power (802.11n-40MHz, Ch 6,MCS2))

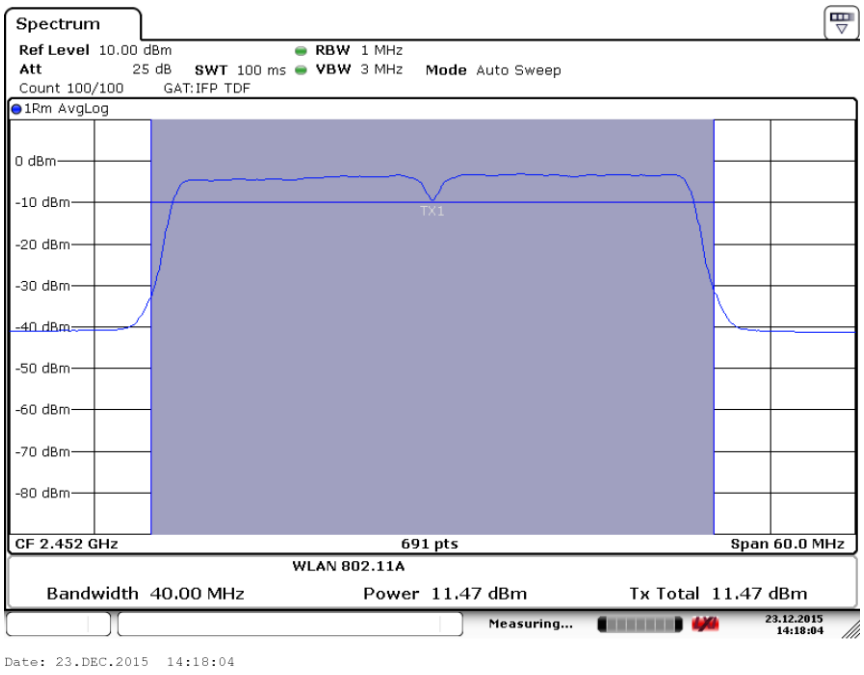


Fig.69 Maximum Average Output Power (802.11n-40MHz, Ch 9,MCS2)

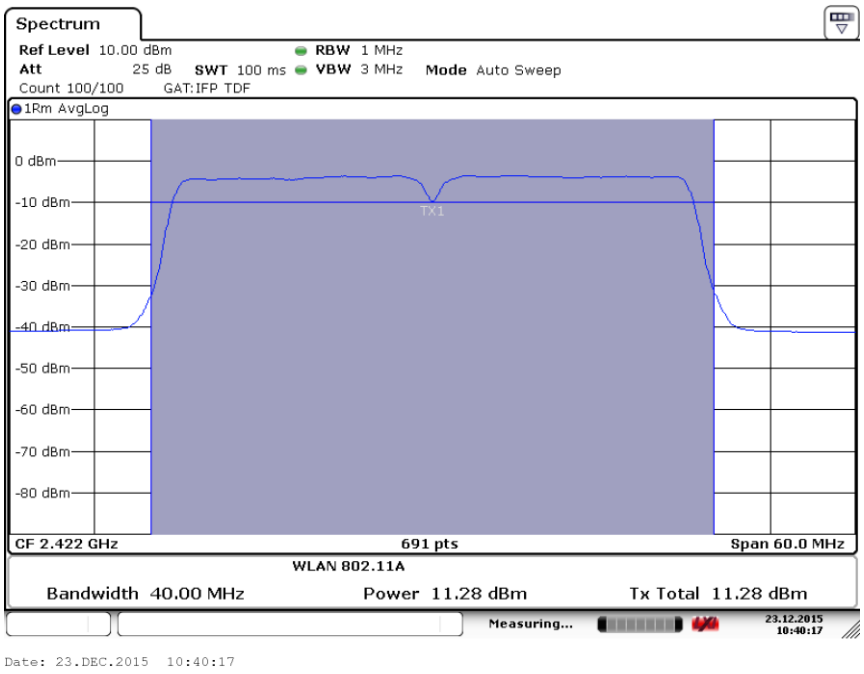


Fig.70 Maximum Average Output Power (802.11n-40MHz, Ch 3,MCS3)

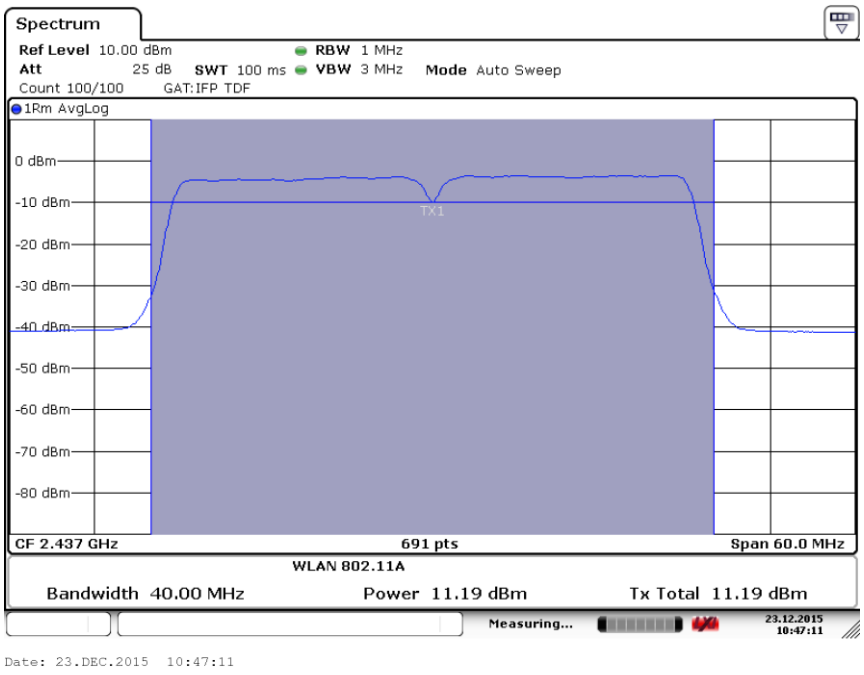


Fig.71 Maximum Average Output Power (802.11n-40MHz, Ch 6,MCS3)

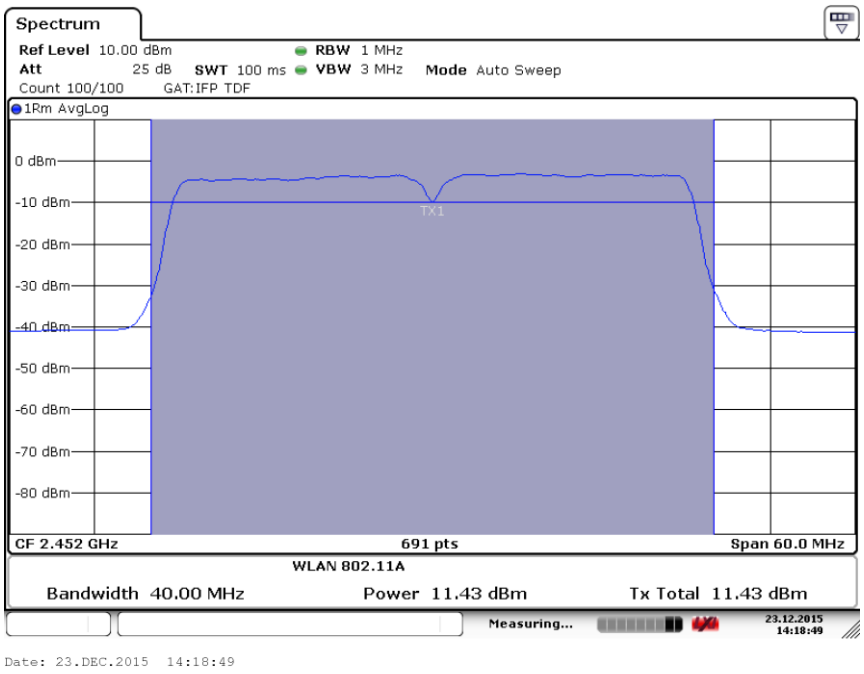


Fig.72 Maximum Average Output Power (802.11n-40MHz, Ch 9,MCS3)

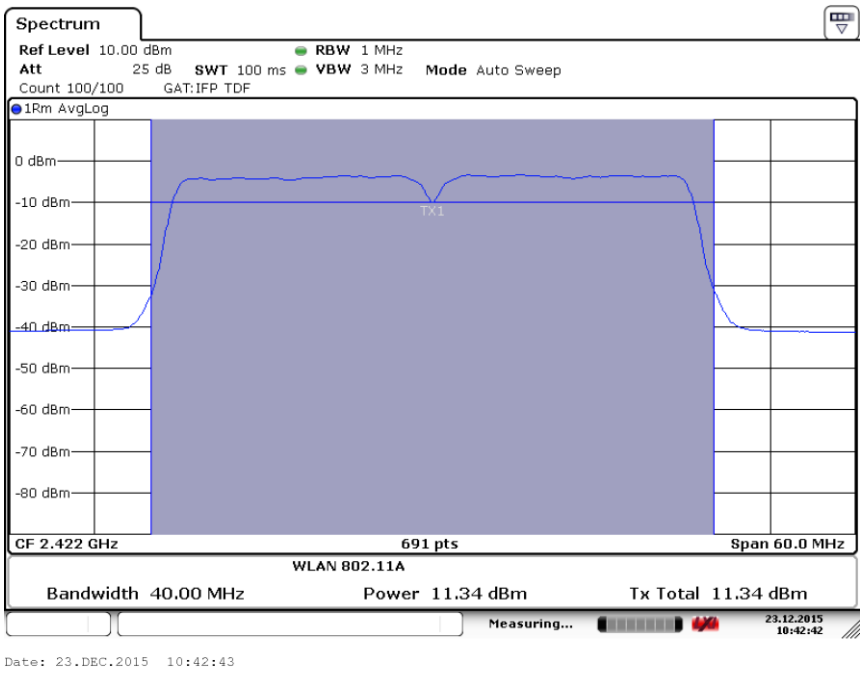


Fig.73 Maximum Average Output Power (802.11n-40MHz, Ch 3,MCS4)

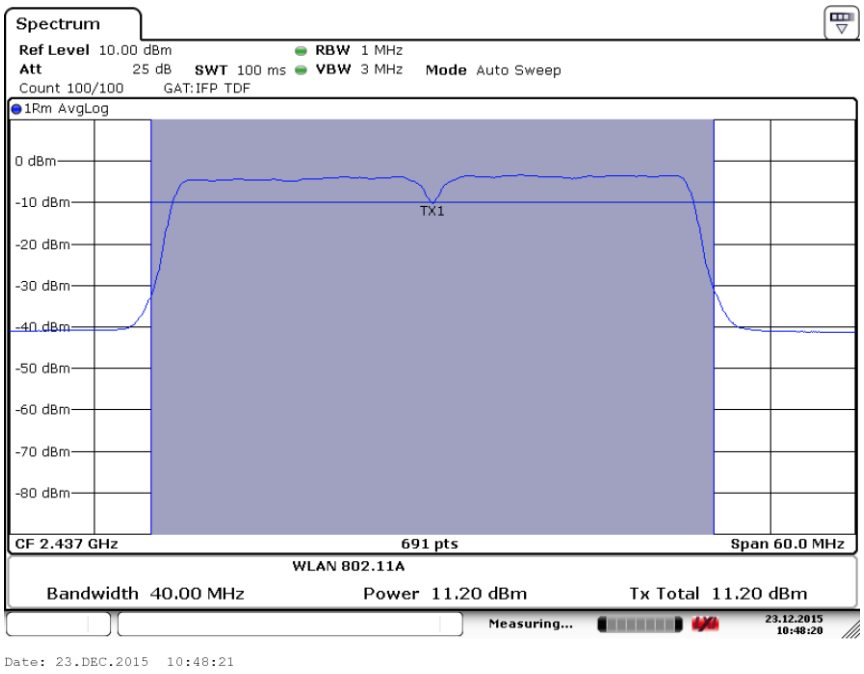


Fig.74 Maximum Average Output Power (802.11n-40MHz, Ch 6,MCS4)

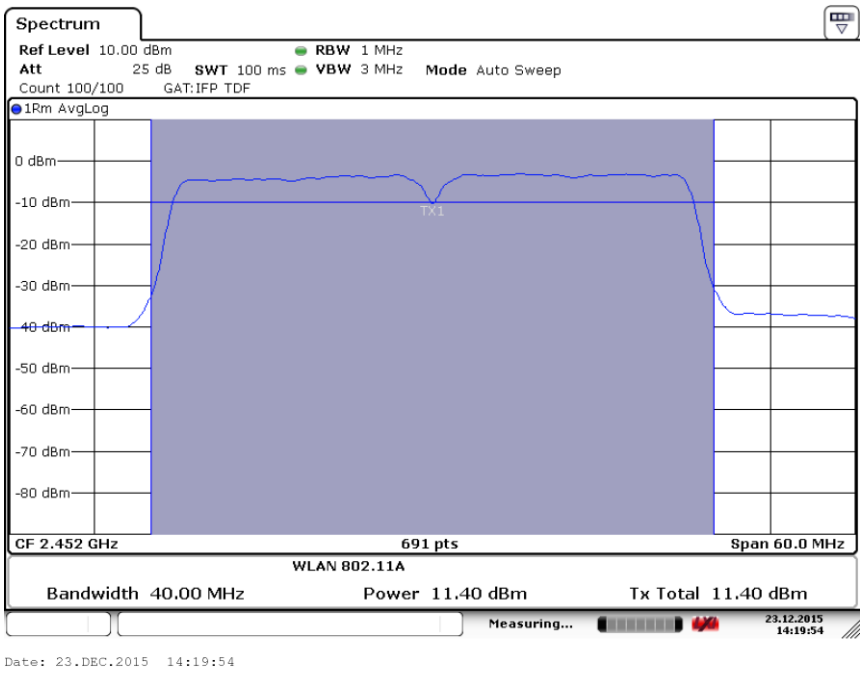


Fig.75 Maximum Average Output Power (802.11n-40MHz, Ch 9,MCS4)

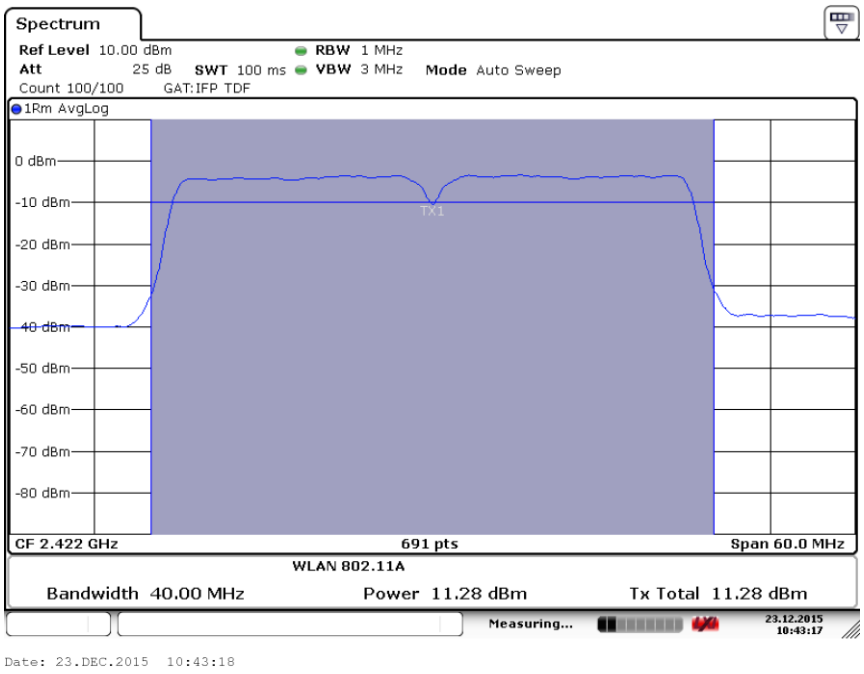


Fig.76 Maximum Average Output Power (802.11n-40MHz, Ch 3,MCS5)

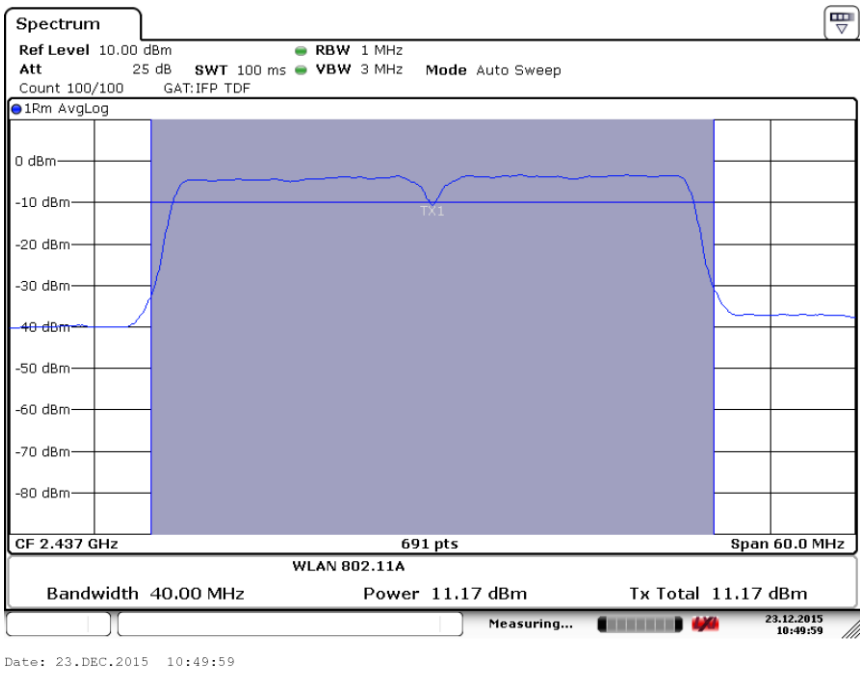


Fig.77 Maximum Average Output Power (802.11n-40MHz, Ch 6,MCS5)

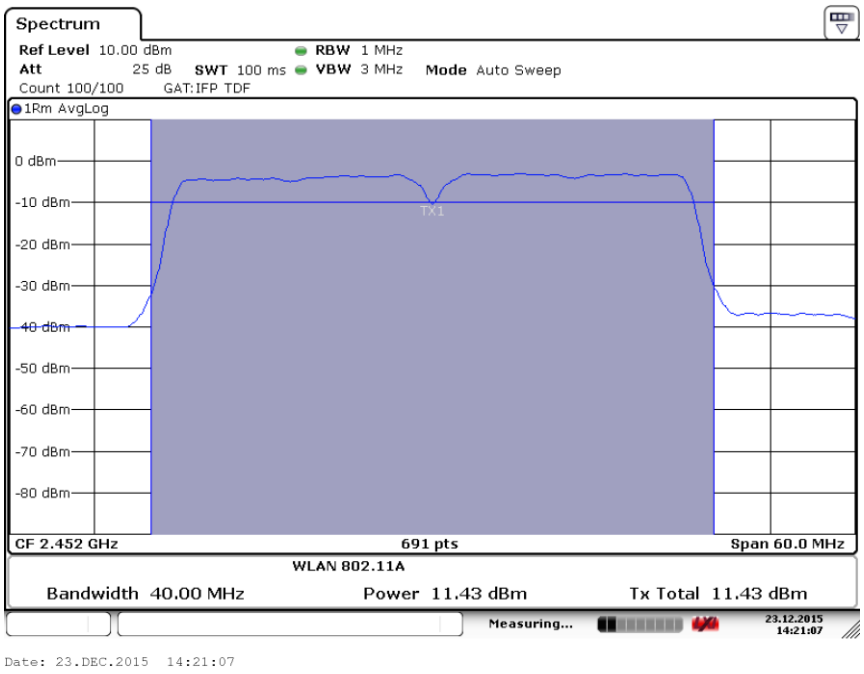


Fig.78 Maximum Average Output Power (802.11n-40MHz, Ch 9,MCS5)

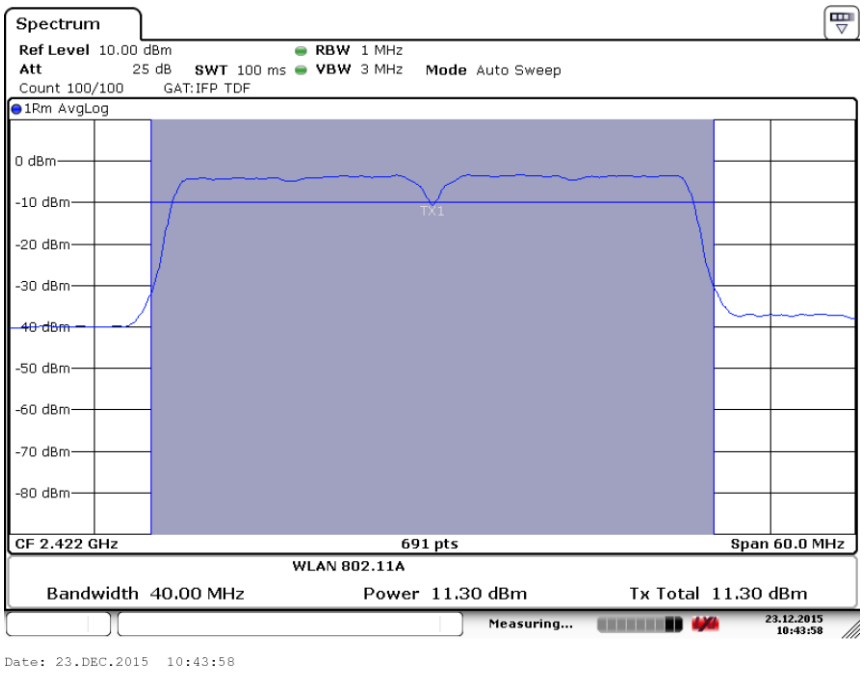


Fig.79 Maximum Average Output Power (802.11n-40MHz, Ch 3,MCS6)

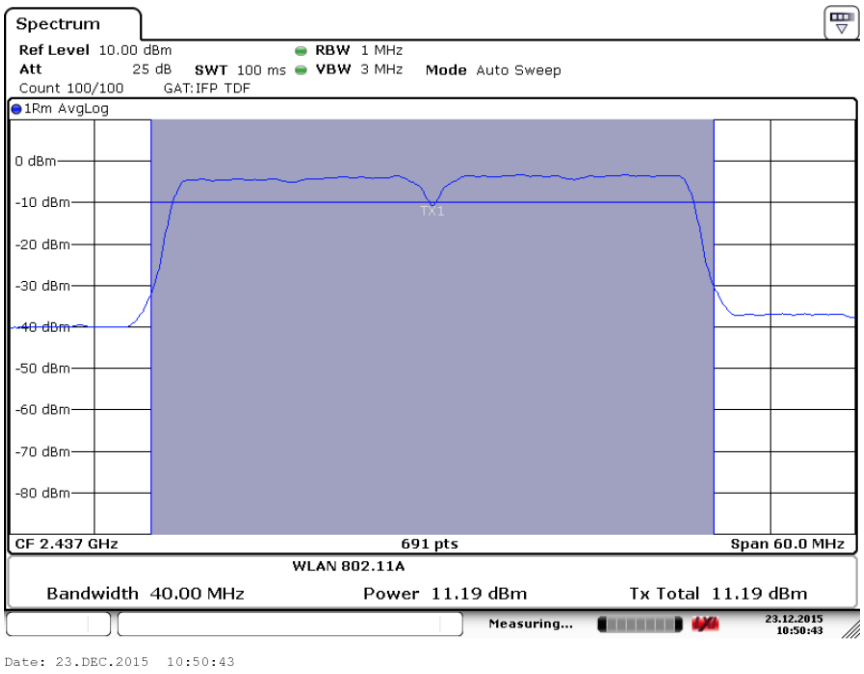


Fig.80 Maximum Average Output Power (802.11n-40MHz, Ch 6,MCS6)