# FCC PART 15C
# TEST REPORT
# No. I15Z41643-SRD01

**for**

**ZTE CORPORATION**

**WCDMA/GSM（GPRS） Dual-Mode Digital Mobile Phone**

**Model Name: ZTE Blade C340/ ZTE T220/ ZTE V812/**

**ZTE Blade Q2 3G/ZTE Open C2**

**With**

**Hardware Version: wrbA**

**Software Version: Blade_S_EIYV1.0.0B01**

**FCC ID: SRQ-ZTEBLADEC340**

**Issued Date: Jul 31st, 2015**

TESTING
CNAS L0570

**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.

Tel:+86(0)10-62304633-2512,Fax:+86(0)10-62304633-2504

Email:cttl_terminals@catr.cn, website:www.chinattl.com

# REPORT HISTORY

| Report Number | Revision | Description | Issue Date |
|---|---|---|---|
| I15Z41643-SRD01 | Rev.0 | 1st edition | 2015-07-31 |

# 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

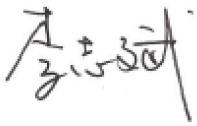
Testing Start Date: 2015-06-24

Testing End Date: 2015-07-30

## 1.4. Signature

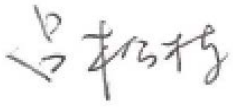
**Xu Zhongfei**

**(Prepared this test report)**



**Li Zhibin**

**(Reviewed this test report)**



**Lv Songdong**

**(Approvedthis test report)**

# 2. Client Information

## 2.1. Applicant Information

| | |
|---|---|
| Company Name: | ZTE CORPORATION |
| Address: | ZTE Plaza, Keji Road South, Shenzhen, China |
| City: | Shenzhen |
| Postal Code: | / |
| Country: | China |
| Telephone: | +86 18616587757 |
| Fax: | +86 021 50801070 |

## 2.2. Manufacturer Information

| | |
|---|---|
| Company Name: | ZTE CORPORATION |
| Address: | ZTE Plaza, Keji Road South, Shenzhen, China |
| City: | Shenzhen |
| Postal Code: | / |
| Country: | China |
| Telephone: | +86 18616587757 |
| Fax: | +86 021 50801070 |

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

## 3.1. About EUT

| | |
|---|---|
| Description | WCDMA/GSM（GPRS） Dual-Mode Digital Mobile Phone |
| Model Name | ZTE Blade C340/ ZTE T220/ ZTE V812/ ZTE Blade Q2 3G/ZTE Open C2 |
| Market Name | ZTE |
| RF Protocol | IEEE 802.11b/g/n20 |
| Operating Frequency | 2412MHz~2462MHz |
| FCC ID | SRQ-ZTEBLADEC340 |

*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 | / | W59_MB_B | ZTE_CN_QD_P172R12V1.0.0 |

*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 | / | / |

*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:<br>15.205 Restricted bands of operation;<br>15.209 Radiated emission limits, general requirements;<br>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** |

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 ℃, Max. = 35 ℃ |
| Relative humidity | Min. = 15 %, Max. = 75 % |
| Shielding effectiveness | 0.014MHz - 1MHz, >60dB;<br>1MHz - 1000MHz, >90dB. |
| Electrical insulation | > 2 M |
| Ground system resistance | < 4 |
| Normalised site attenuation (NSA) | < ±4dB, 3m/10m distance,<br>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 ℃, Max. = 35 ℃ |
| Relative humidity | Min. = 20 %, Max. = 75 % |
| Shielding effectiveness | 0.014MHz - 1MHz, >60dB;<br>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 | Shielding Room | S81 | / | ETS-Lindgren | / | / |

# 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 -2.2 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 | 15.02 | Fig.2 | 15.26 | Fig.3 | 15.60 |
| | 2 | Fig.4 | 15.09 | Fig.5 | 15.19 | Fig.6 | 15.55 |
| | 5.5 | Fig.7 | 14.99 | Fig.8 | 15.30 | Fig.9 | 15.84 |
| | 11 | Fig.10 | 15.10 | Fig.11 | 15.45 | Fig.12 | 15.09 |
| 802.11g | 6 | Fig.13 | 11.10 | Fig.14 | 11.64 | Fig.15 | 11.75 |
| | 9 | Fig.16 | 11.15 | Fig.17 | 11.57 | Fig.18 | 11.73 |
| | 12 | Fig.19 | 11.22 | Fig.20 | 11.37 | Fig.21 | 11.74 |
| | 18 | Fig.22 | 11.26 | Fig.23 | 11.47 | Fig.24 | 11.80 |
| | 24 | Fig.25 | 11.48 | Fig.26 | 11.65 | Fig.27 | 11.97 |
| | 36 | Fig.28 | 11.45 | Fig.29 | 11.69 | Fig.30 | 11.97 |
| | 48 | Fig.31 | 11.42 | Fig.32 | 11.69 | Fig.33 | 11.96 |
| | 54 | Fig.34 | 11.40 | Fig.35 | 11.65 | Fig.36 | 11.93 |

**802.11n mode**

| Mode | Data Rate (MCS Index) | Test Result (dBm) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2412MHz (Ch1) | | 2437MHz (Ch6) | | 2462 MHz (Ch11) | |
| 802.11n (20MHz) | MCS0 | Fig.37 | 9.63 | Fig.38 | 9.90 | Fig.39 | 10.08 |
| | MCS1 | Fig.40 | 9.60 | Fig.41 | 9.88 | Fig.42 | 10.01 |
| | MCS2 | Fig.43 | 9.55 | Fig.44 | 9.86 | Fig.45 | 9.97 |
| | MCS3 | Fig.46 | 9.51 | Fig.47 | 9.88 | Fig.48 | 9.99 |
| | MCS4 | Fig.49 | 9.52 | Fig.50 | 9.88 | Fig.51 | 9.98 |
| | MCS5 | Fig.52 | 9.52 | Fig.53 | 9.87 | Fig.54 | 9.97 |
| | MCS6 | Fig.55 | 9.52 | Fig.56 | 9.83 | Fig.57 | 9.97 |
| | MCS7 | Fig.58 | 9.77 | Fig.59 | 9.91 | Fig.60 | 10.08 |

**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.61 | -6.48 | P |
| | 6 | Fig.62 | -6.30 | P |
| | 11 | Fig.63 | -6.27 | P |
| 802.11g | 1 | Fig.64 | -5.67 | P |
| | 6 | Fig.65 | -5.15 | P |
| | 11 | Fig.66 | -5.19 | P |

**802.11n mode**

| Mode | Channel | Peak Power Spectral Density(dBm) | | Conclusion |
|---|---|---|---|---|
| 802.11n (20MHz) | 1 | Fig.67 | -6.25 | P |
| | 6 | Fig.68 | -5.88 | P |
| | 11 | Fig.69 | -5.70 | 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.70 | 8900 | P |
| | 6 | Fig.71 | 9638 | P |
| | 11 | Fig.72 | 9030 | P |
| 802.11g | 1 | Fig.73 | 16237 | P |
| | 6 | Fig.74 | 16151 | P |
| | 11 | Fig.75 | 15933 | P |

**802.11n mode**

| Mode | Channel | Test Results ( kHz) | | conclusion |
|---|---|---|---|---|
| 802.11n (20MHz) | 1 | Fig.76 | 17540 | P |
| | 6 | Fig.77 | 17192 | P |
| | 11 | Fig.78 | 17106 | 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.79 | P |
| | 11 | Fig.80 | P |
| 802.11g | 1 | Fig.81 | P |
| | 11 | Fig.82 | P |

**802.11n mode**

| Mode | Channel | Test Results | Conclusion |
|---|---|---|---|
| 802.11n (20MHz) | 1 | Fig.83 | P |
| | 11 | Fig.84 | 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.85 | P |
| | | 30 MHz-3 GHz | Fig.86 | P |
| | | 3GHz-18GHz | Fig.87 | P |
| 802.11b | 6 | 2.437 GHz | Fig.88 | P |
| | | 30 MHz-3 GHz | Fig.89 | P |
| | | 3GHz-18GHz | Fig.90 | P |
| | 11 | 2.462 GHz | Fig.91 | P |
| | | 30 MHz-3 GHz | Fig.92 | P |
| | | 3GHz-18GHz | Fig.93 | P |
| 802.11g | 1 | 2.412 GHz | Fig.94 | P |
| | | 30 MHz-3 GHz | Fig.95 | P |
| | | 3GHz-18GHz | Fig.96 | P |
| | 6 | 2.437 GHz | Fig.97 | P |
| | | 30 MHz-3 GHz | Fig.98 | P |
| | | 3GHz-18GHz | Fig.99 | P |
| | 11 | 2.462 GHz | Fig.100 | P |
| | | 30 MHz-3 GHz | Fig.101 | P |
| | | 3GHz-18GHz | Fig.102 | P |

**802.11n mode**

| | | | | |
|---|---|---|---|---|
| 802.11n (20MHz) | 1 | 2.412 GHz | Fig.103 | P |
| | | 30 MHz-3 GHz | Fig.104 | P |
| | | 3GHz-18GHz | Fig.105 | P |
| | 6 | 2.437 GHz | Fig.106 | P |
| | | 30 MHz-3 GHz | Fig.107 | P |
| | | 3GHz-18GHz | Fig.108 | P |
| | 11 | 2.462 GHz | Fig.109 | P |
| | | 30 MHz-3 GHz | Fig.110 | P |
| | | 3GHz-18GHz | Fig.111 | P |
| / | All channels | 18GHz-26GHz | Fig.112 | P |

**See ANNEX C for test graphs.**

**Conclusion: PASS**

# ANNEX B: TEST LAYOUTS

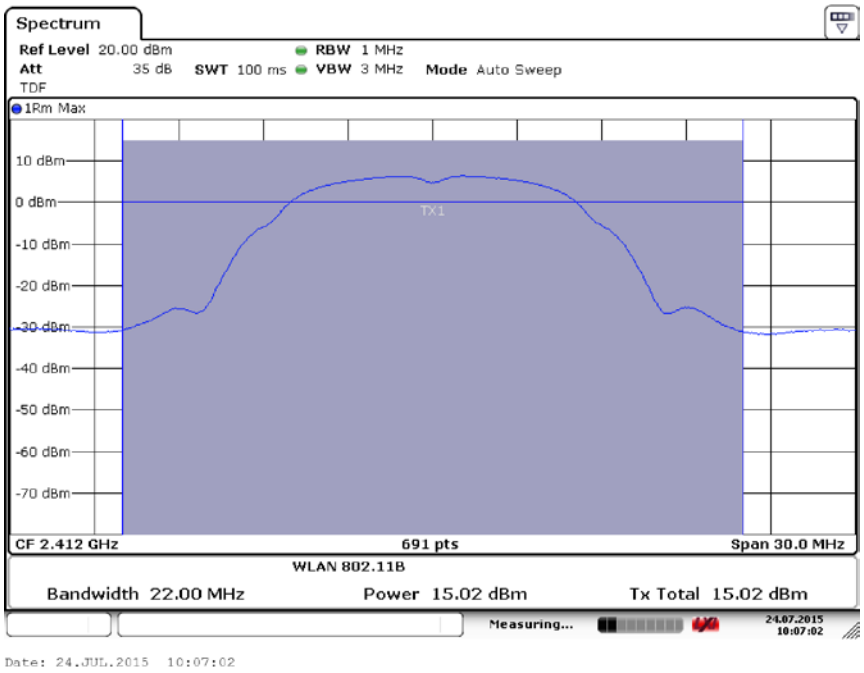



**Fig.1 Maximum Average Output Power (802.11b, Ch 1,1Mbps)**

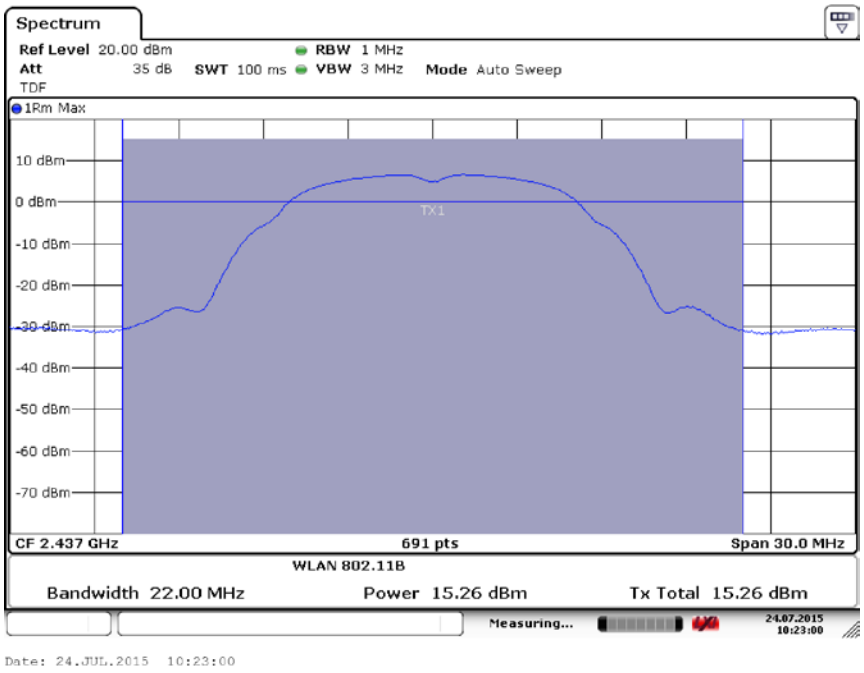



**Fig.2 Maximum Average Output Power (802.11b, Ch 6,1Mbps)**

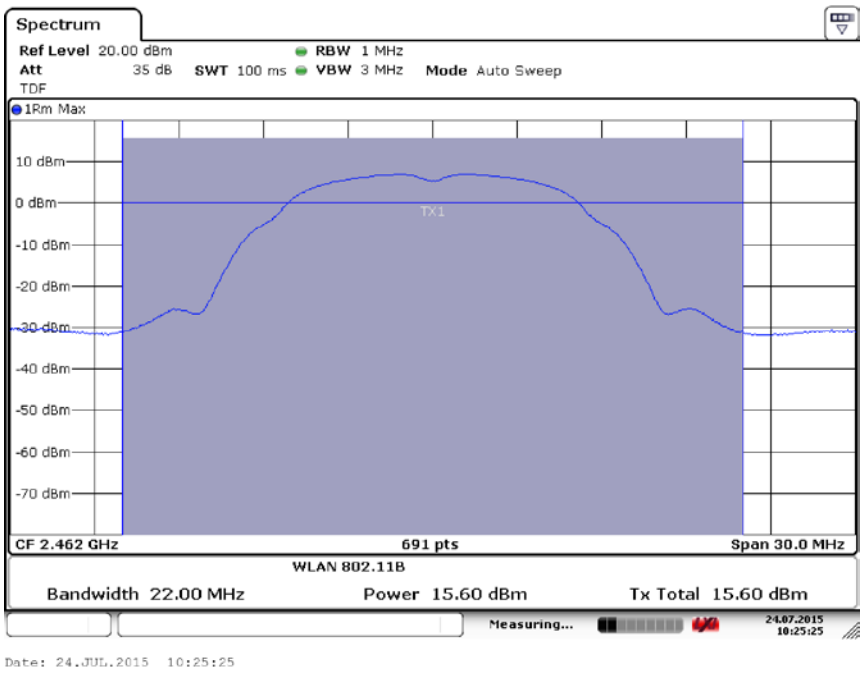



**Fig.3 Maximum Average Output Power (802.11b, Ch 11,1Mbps)**

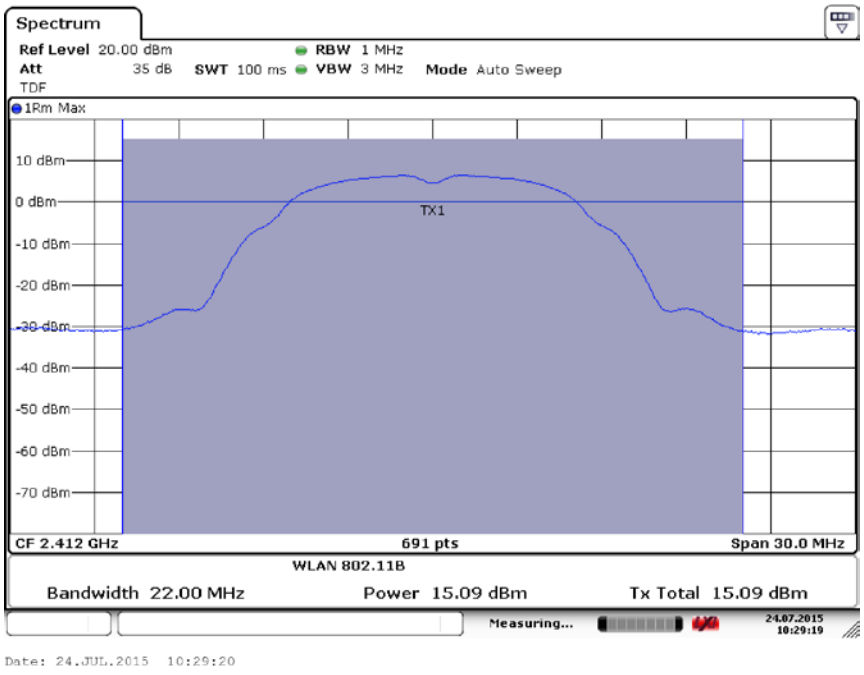



**Fig.4 Maximum Average Output Power (802.11b, Ch 1,2Mbps)**

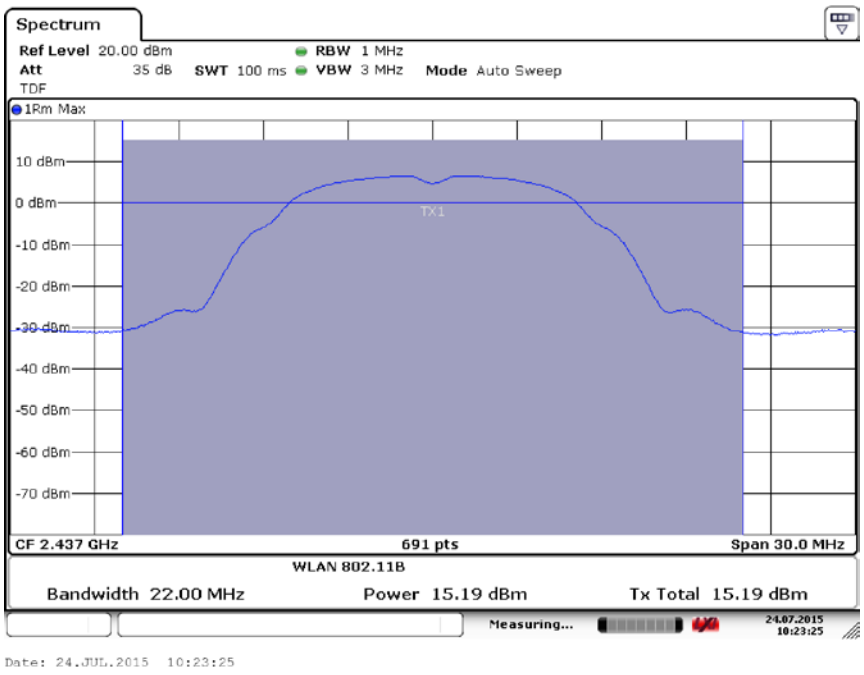



**Fig.5 Maximum Average Output Power (802.11b, Ch 6,2Mbps)**

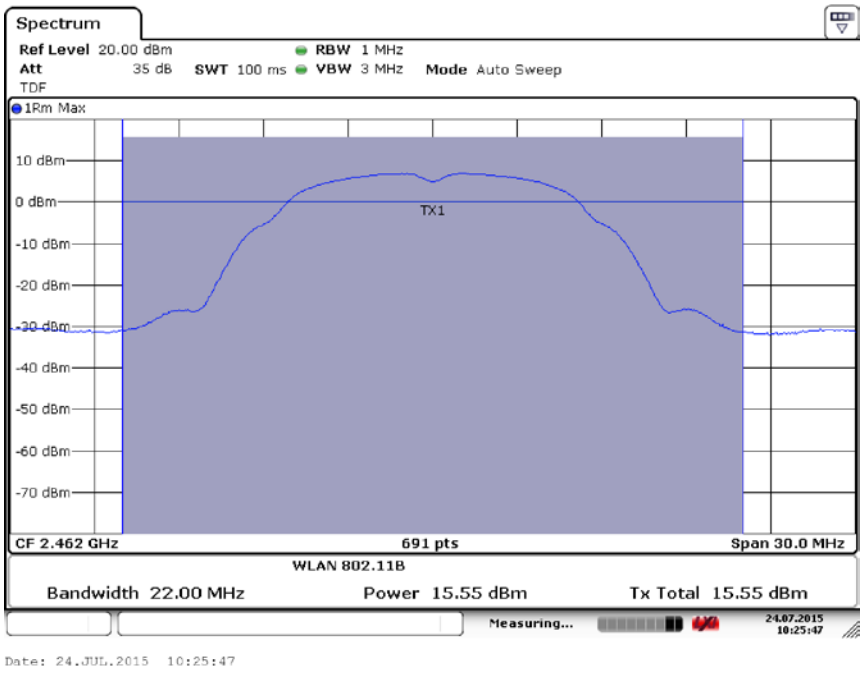



**Fig.6 Maximum Average Output Power (802.11b, Ch 11,2Mbps)**

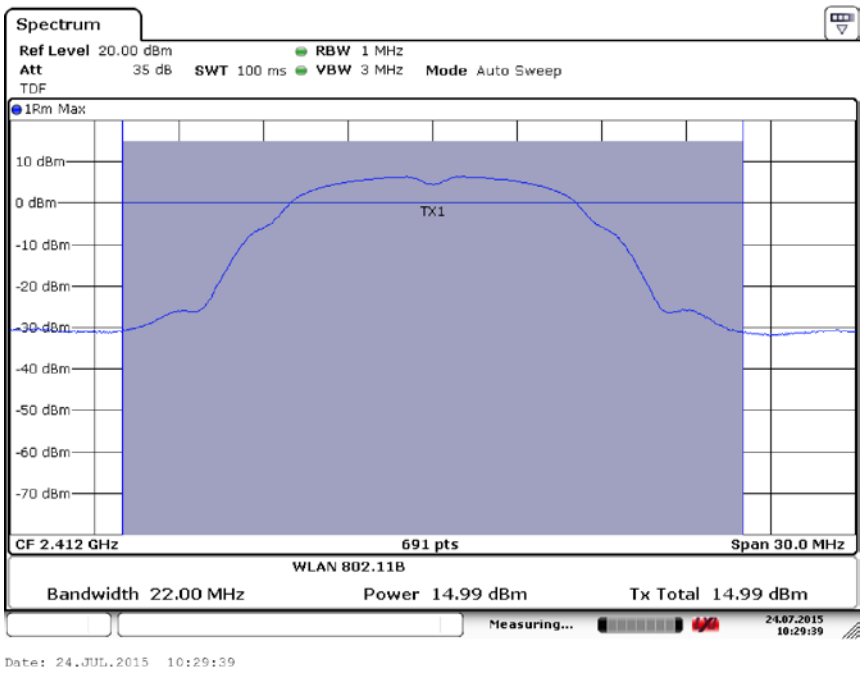



**Fig.7 Maximum Average Output Power (802.11b, Ch 1,5.5Mbps)**

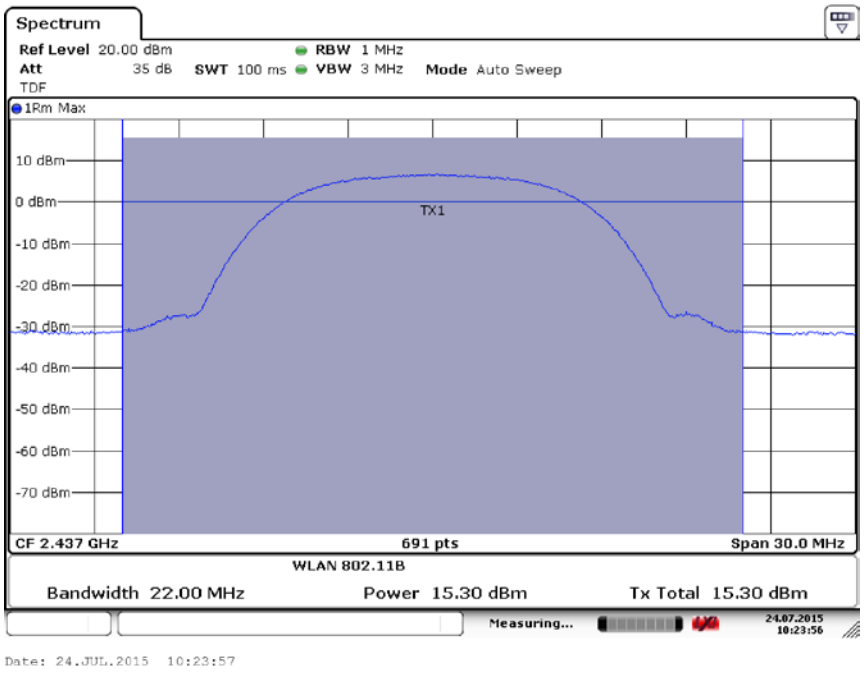



**Fig.8 Maximum Average Output Power (802.11b, Ch 6,5.5Mbps)**

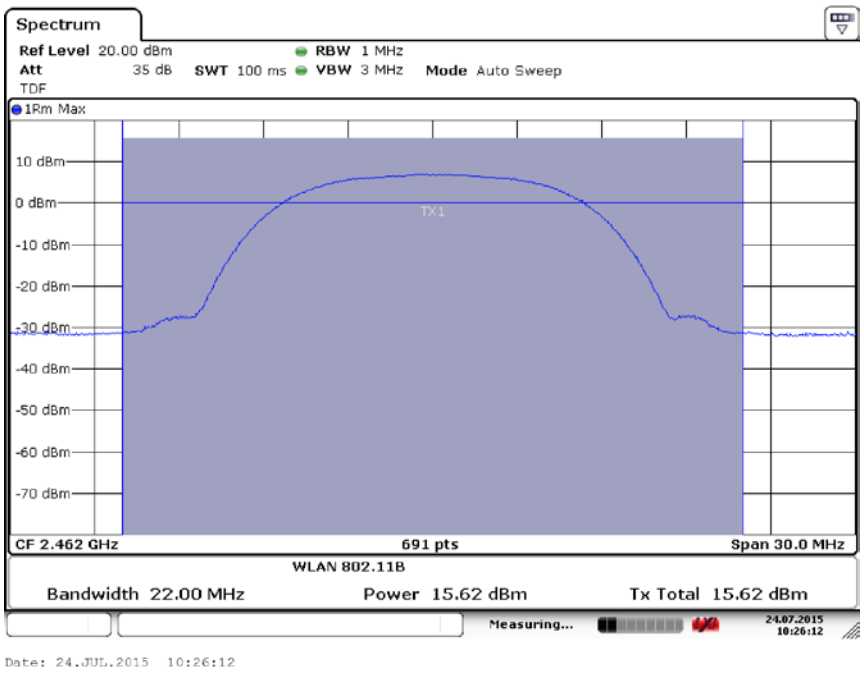



**Fig.9 Maximum Average Output Power (802.11b, Ch 11,5.5Mbps)**

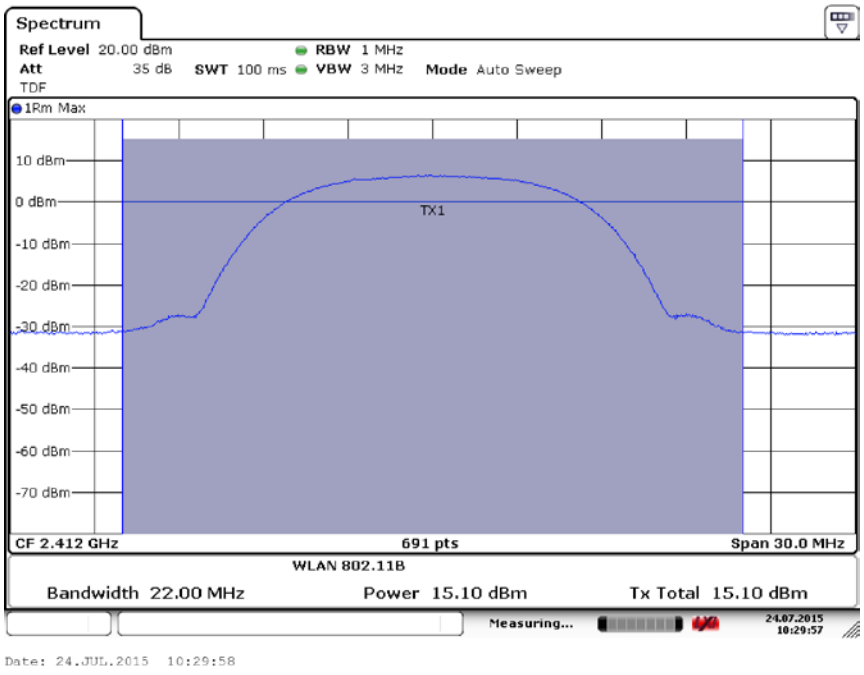



**Fig.10 Maximum Average Output Power (802.11b, Ch 1,11Mbps)**

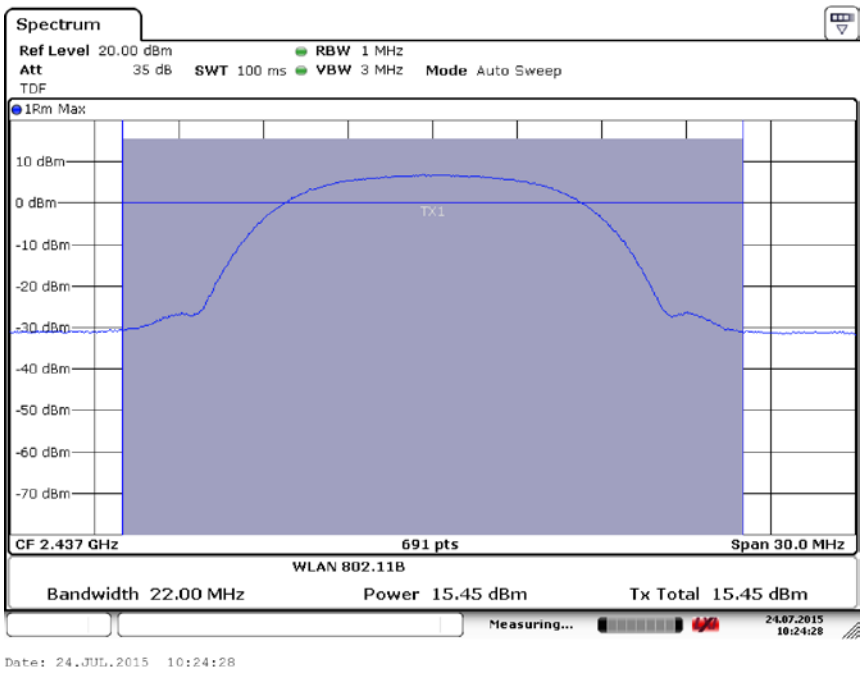



**Fig.11 Maximum Average Output Power (802.11b, Ch 6,11Mbps)**

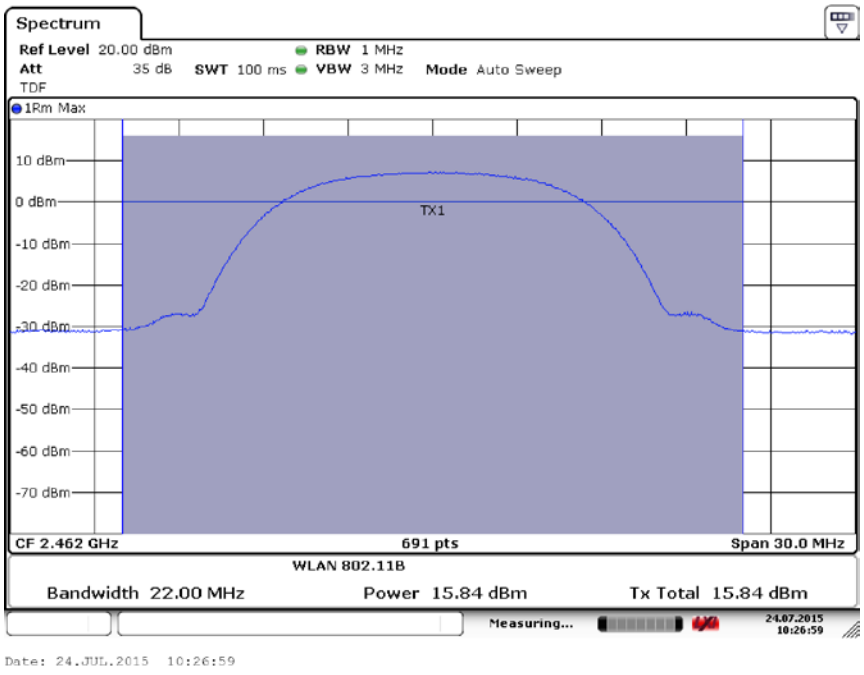



**Fig.12 Maximum Average Output Power (802.11b, Ch 11,11Mbps)**

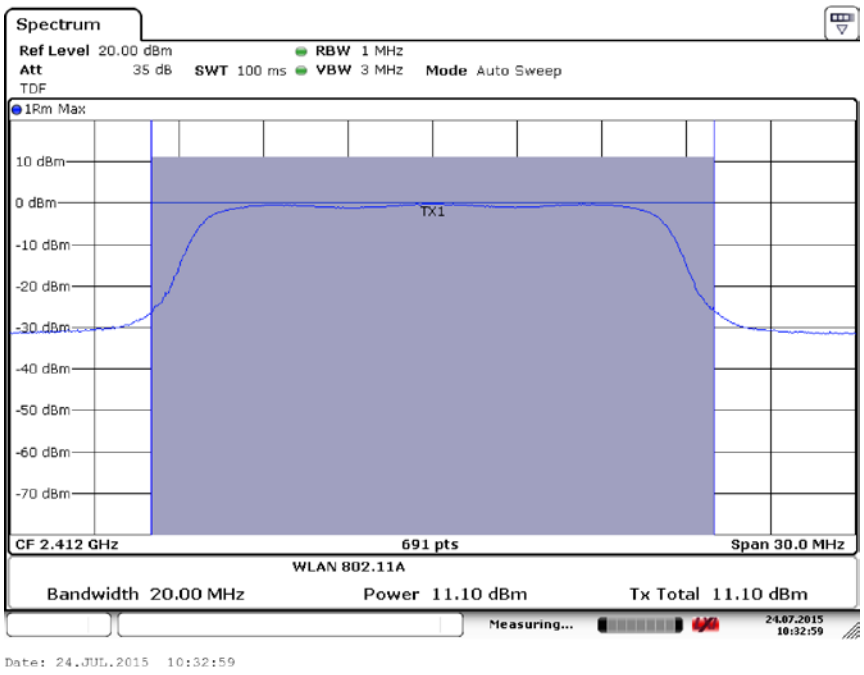



**Fig.13 Maximum Average Output Power (802.11g, Ch 1,6Mbps)**

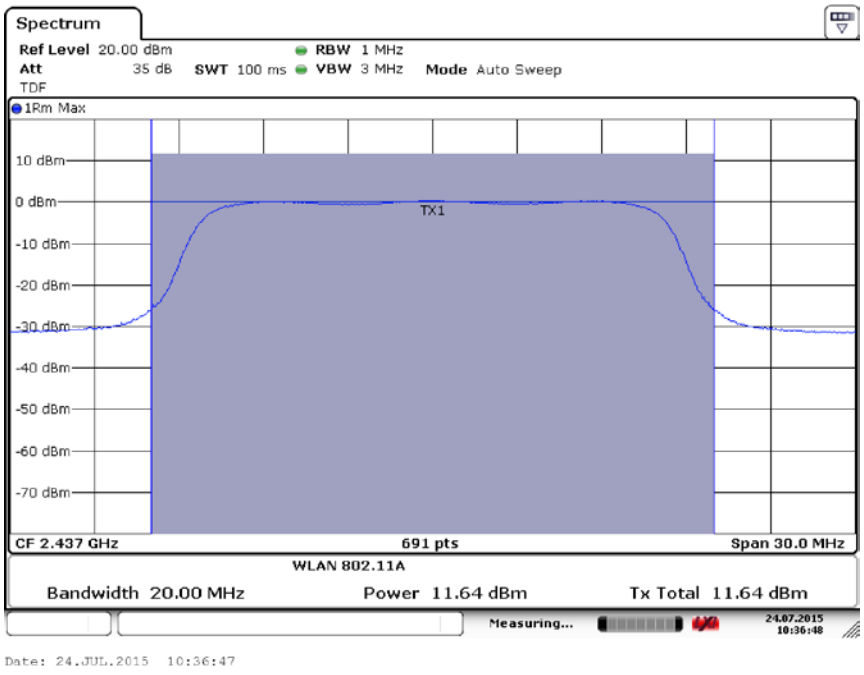



**Fig.14 Maximum Average Output Power (802.11g, Ch 6,6Mbps)**

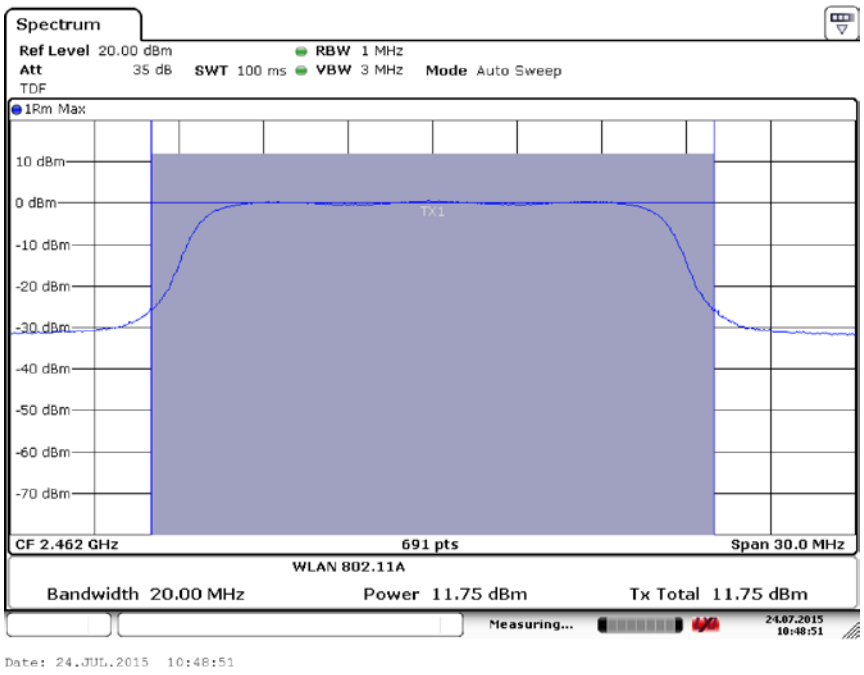



**Fig.15 Maximum Average Output Power (802.11g, Ch 11,6Mbps)**

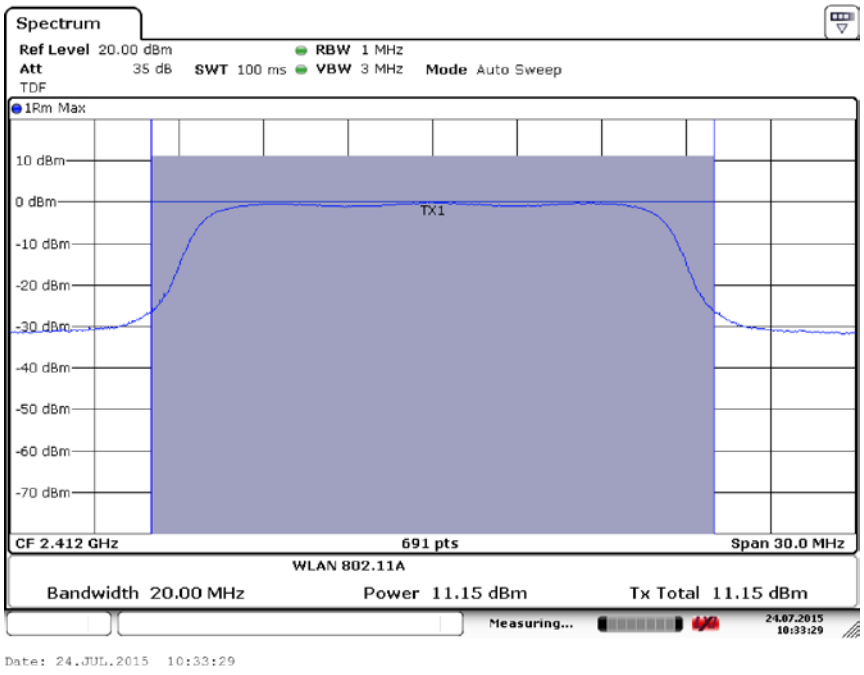



**Fig.16 Maximum Average Output Power (802.11g, Ch 1,9Mbps)**

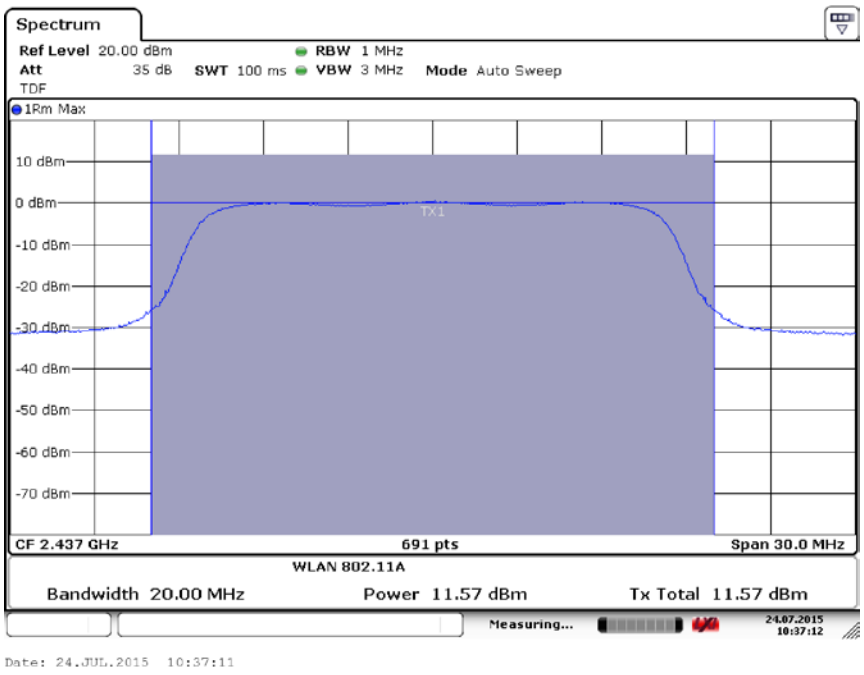



**Fig.17 Maximum Average Output Power (802.11g, Ch 6,9Mbps)**

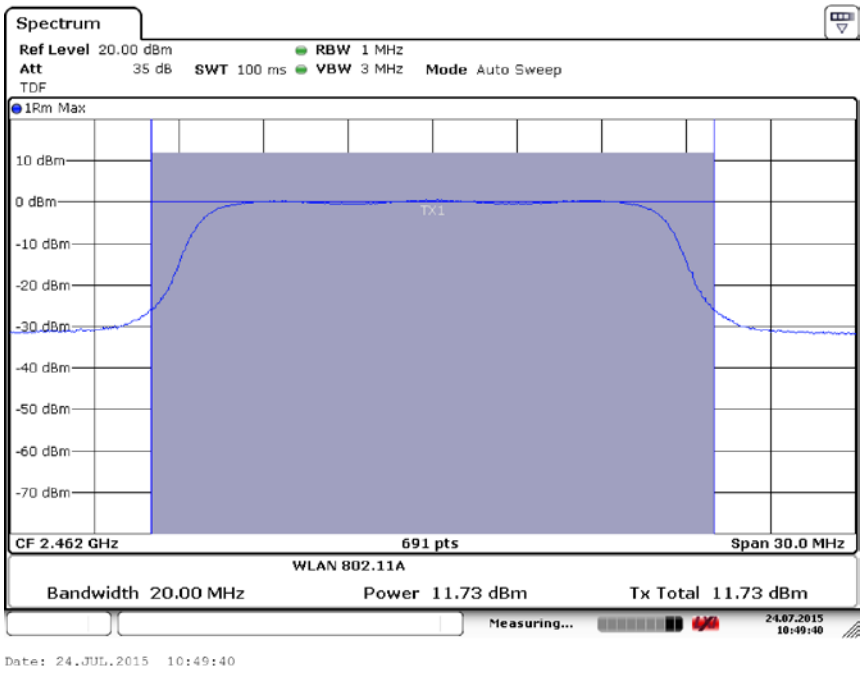



**Fig.18 Maximum Average Output Power (802.11g, Ch 11,9Mbps)**

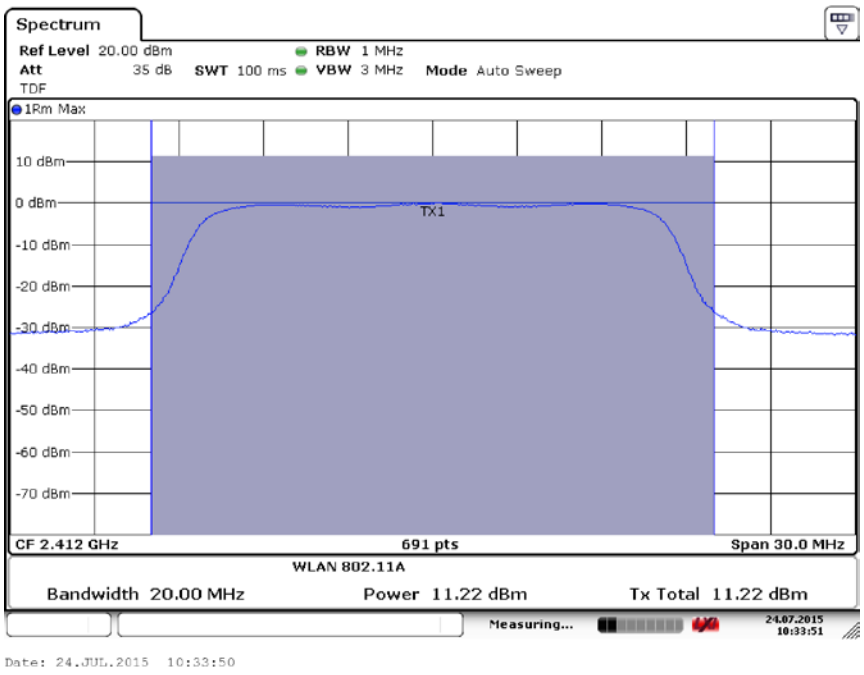



**Fig.19 Maximum Average Output Power (802.11g, Ch 1,12Mbps)**

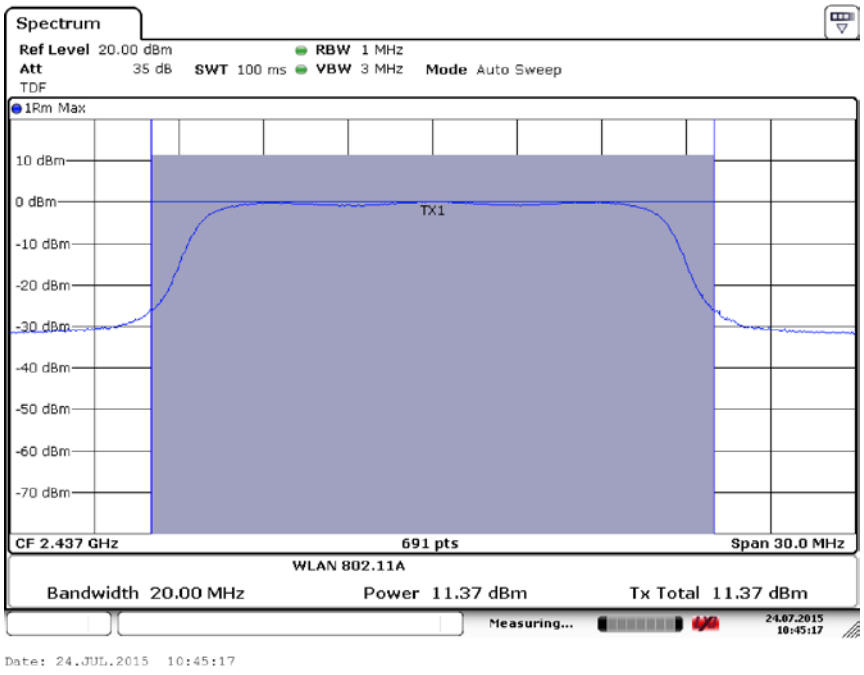



**Fig.20 Maximum Average Output Power (802.11g, Ch 6,12Mbps)**

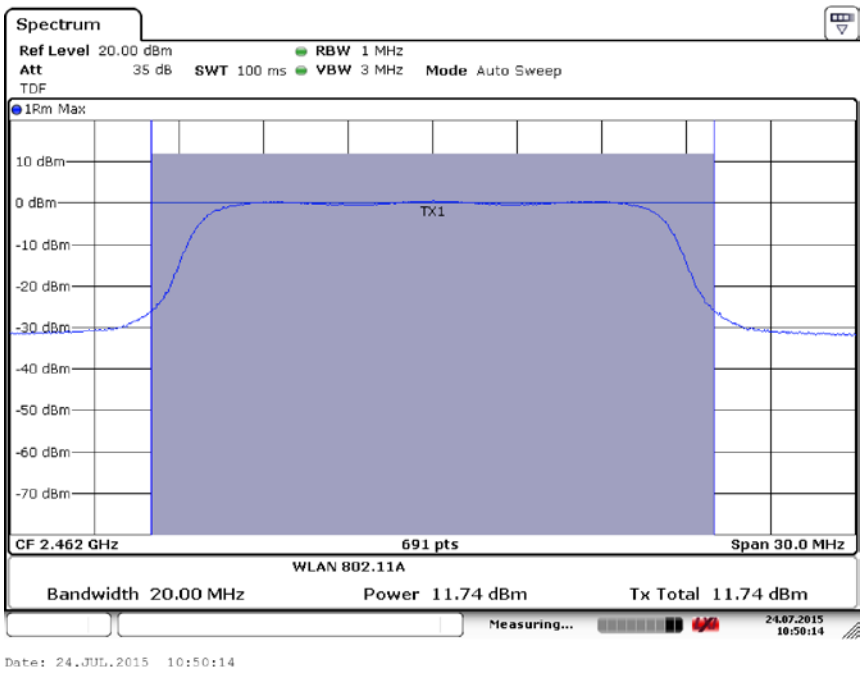



**Fig.21 Maximum Average Output Power (802.11g, Ch 11,12Mbps)**

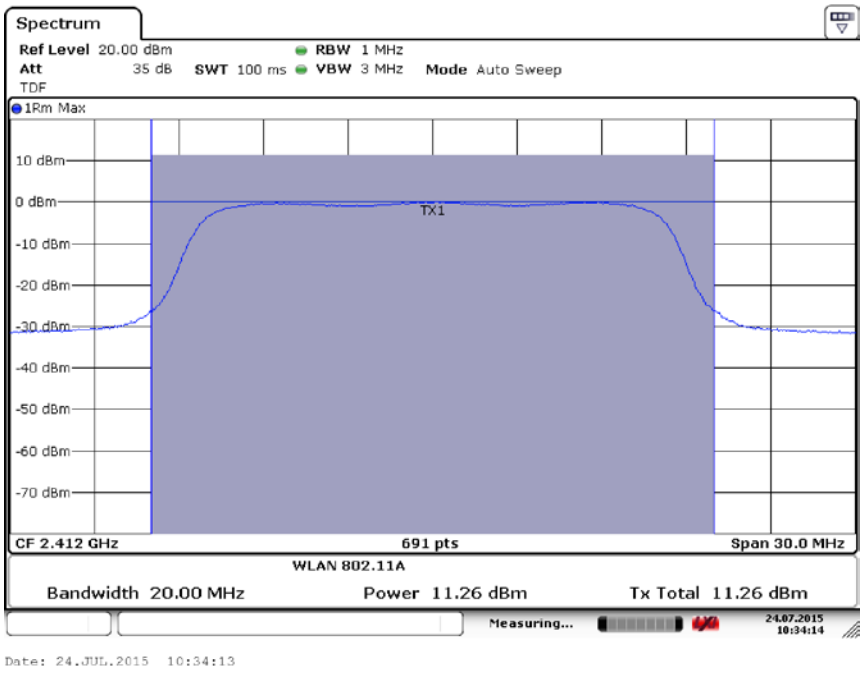



**Fig.22 Maximum Average Output Power (802.11g, Ch 1,18Mbps)**

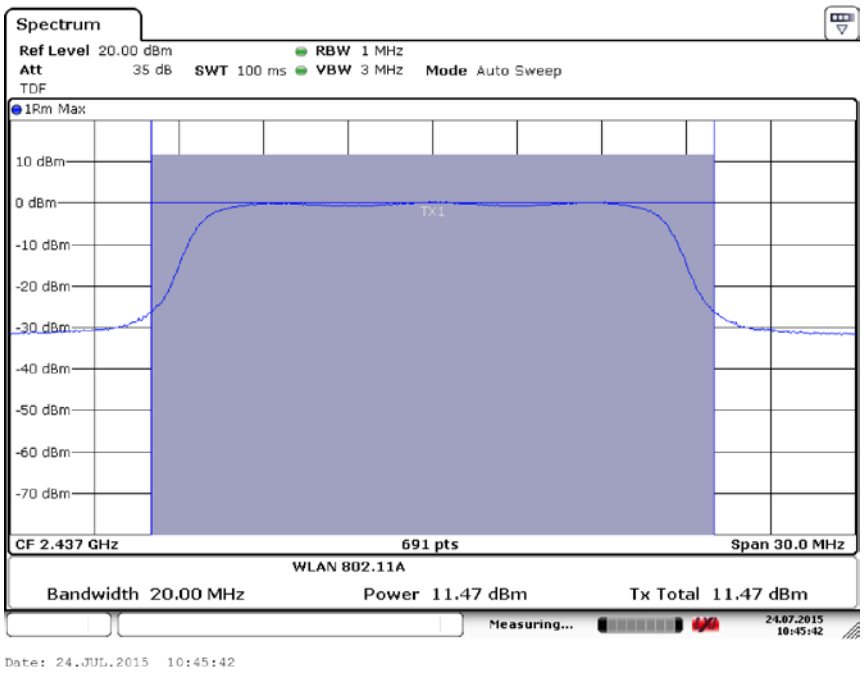



**Fig.23 Maximum Average Output Power (802.11g, Ch 6,18Mbps)**

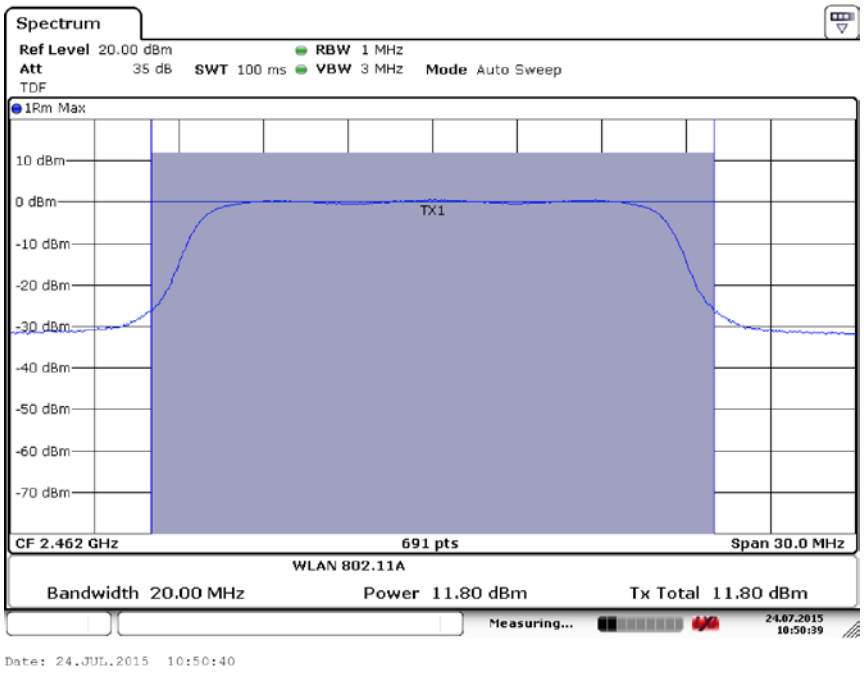



**Fig.24 Maximum Average Output Power (802.11g, Ch 11,18Mbps)**

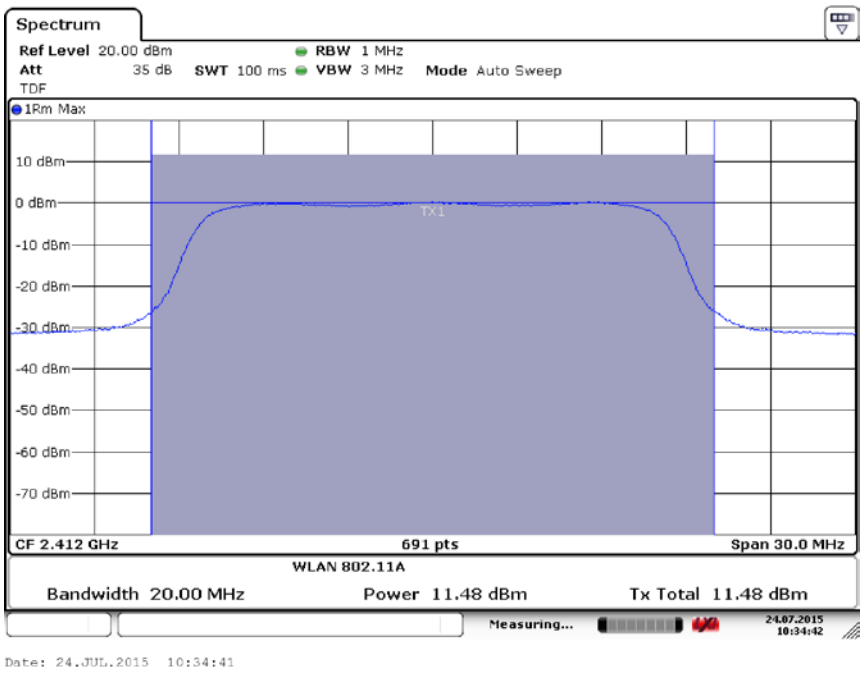



**Fig.25 Maximum Average Output Power (802.11g, Ch 1,24Mbps)**

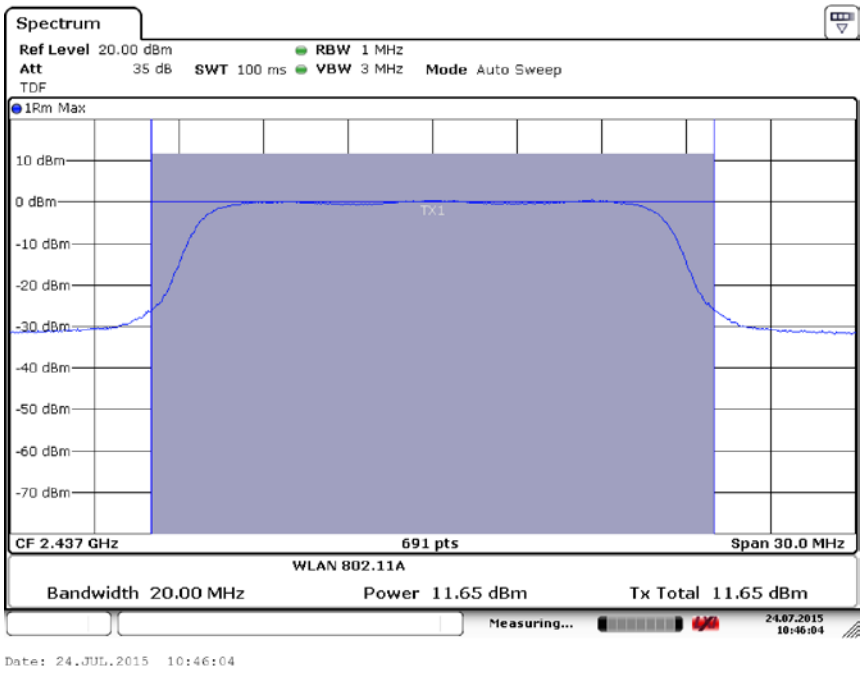



**Fig.26 Maximum Average Output Power (802.11g, Ch 6,24Mbps)**

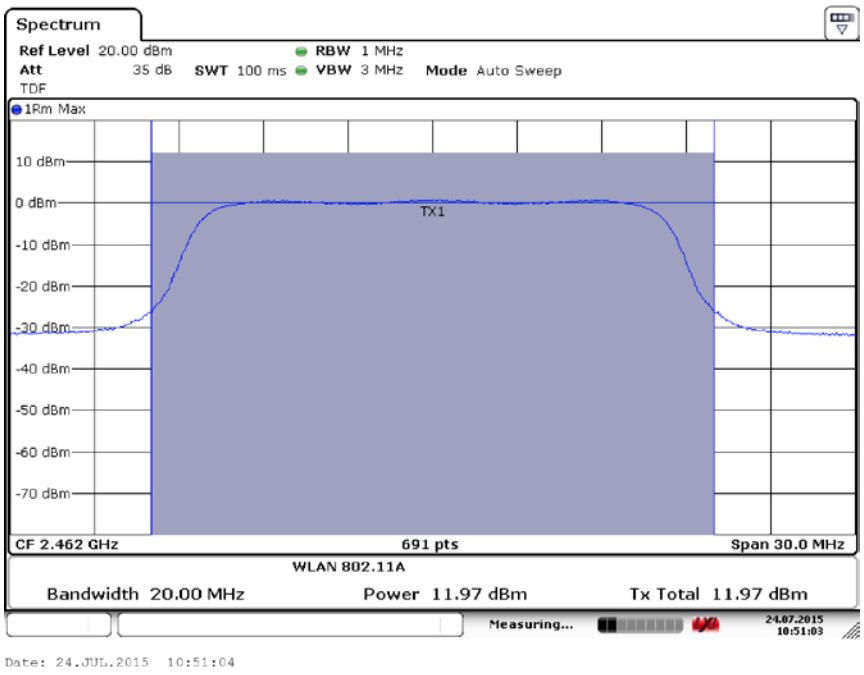



**Fig.27 Maximum Average Output Power (802.11g, Ch 11,24Mbps)**

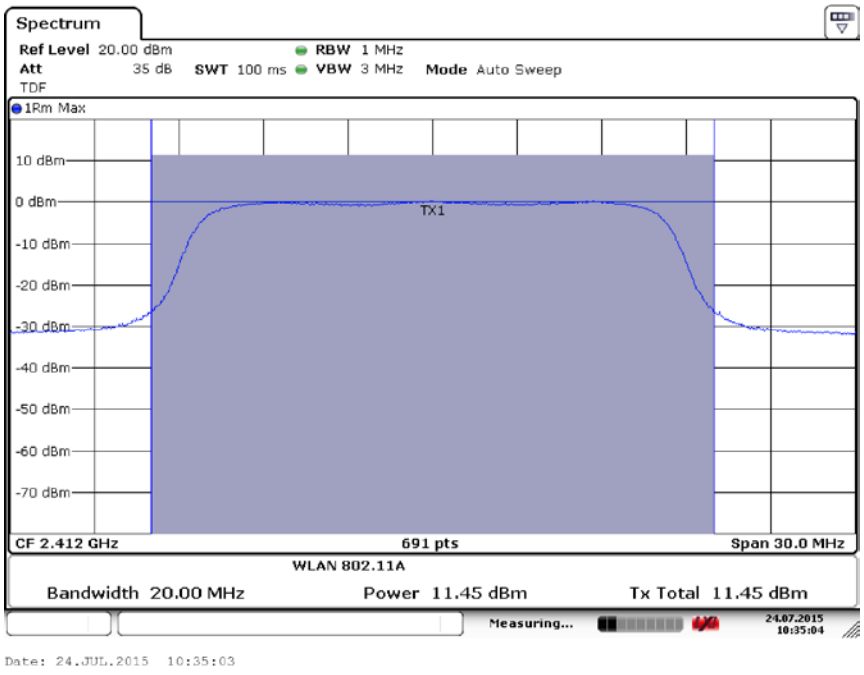



**Fig.28 Maximum Average Output Power (802.11g, Ch 1,36Mbps)**

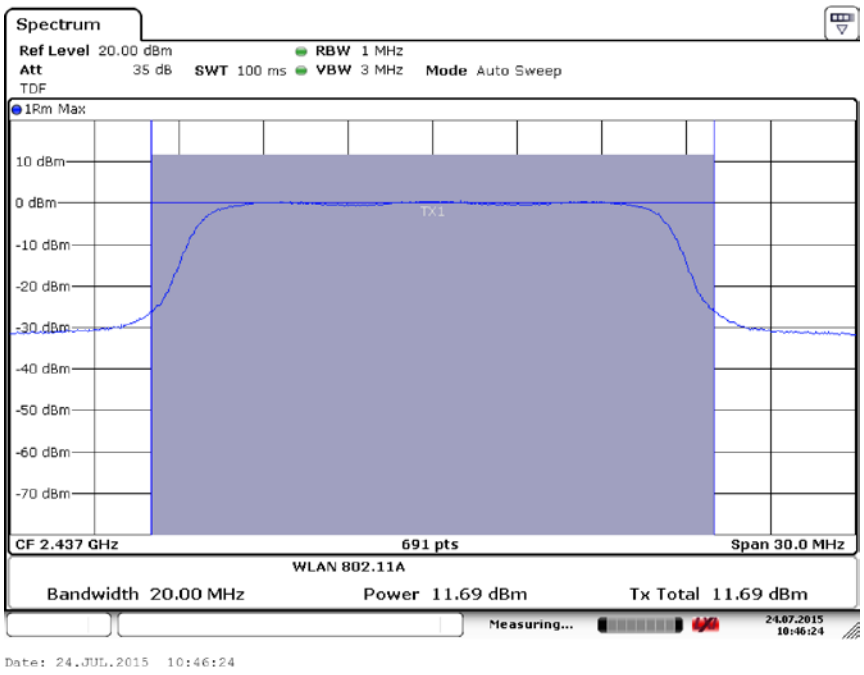



**Fig.29 Maximum Average Output Power (802.11g, Ch 6,36Mbps)**

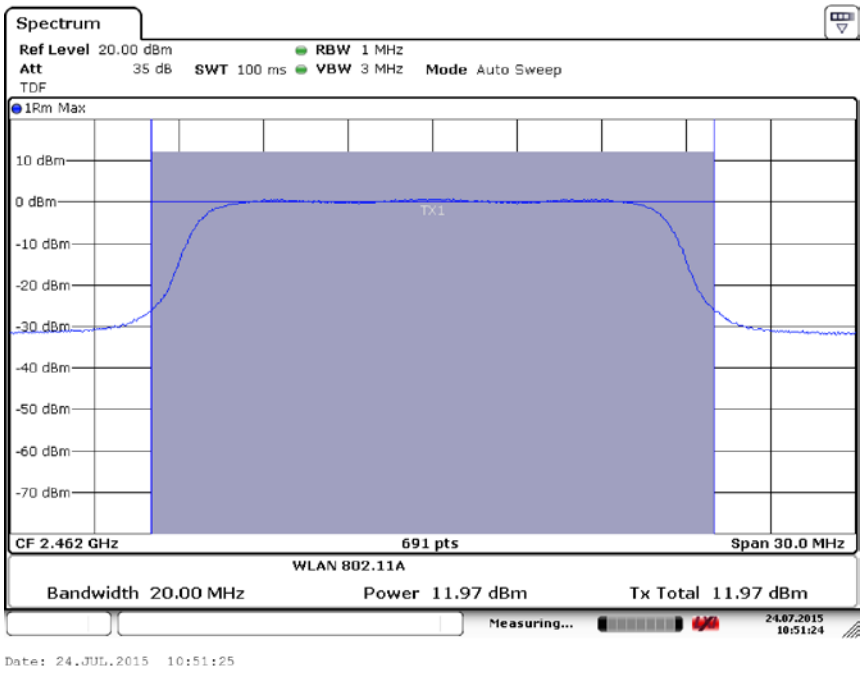



**Fig.30 Maximum Average Output Power (802.11g, Ch 11,36Mbps)**

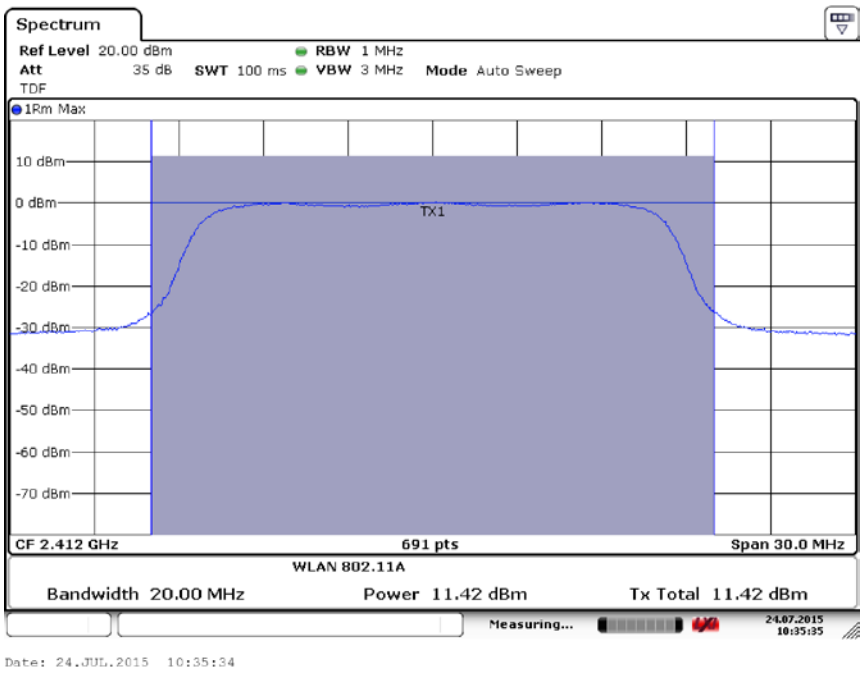



**Fig.31 Maximum Average Output Power (802.11g, Ch 1,48Mbps)**

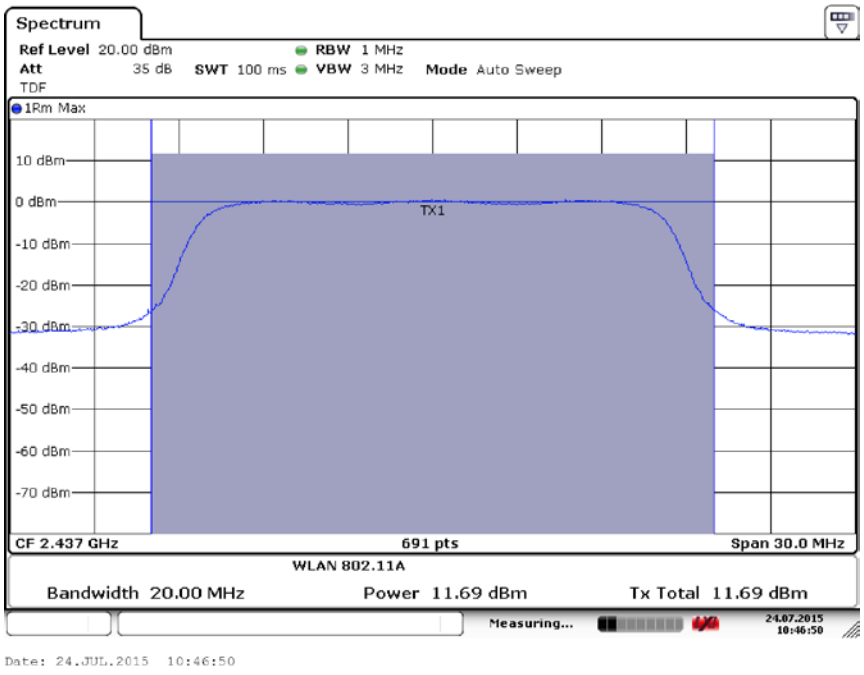



**Fig.32 Maximum Average Output Power (802.11g, Ch 6,48Mbps)**

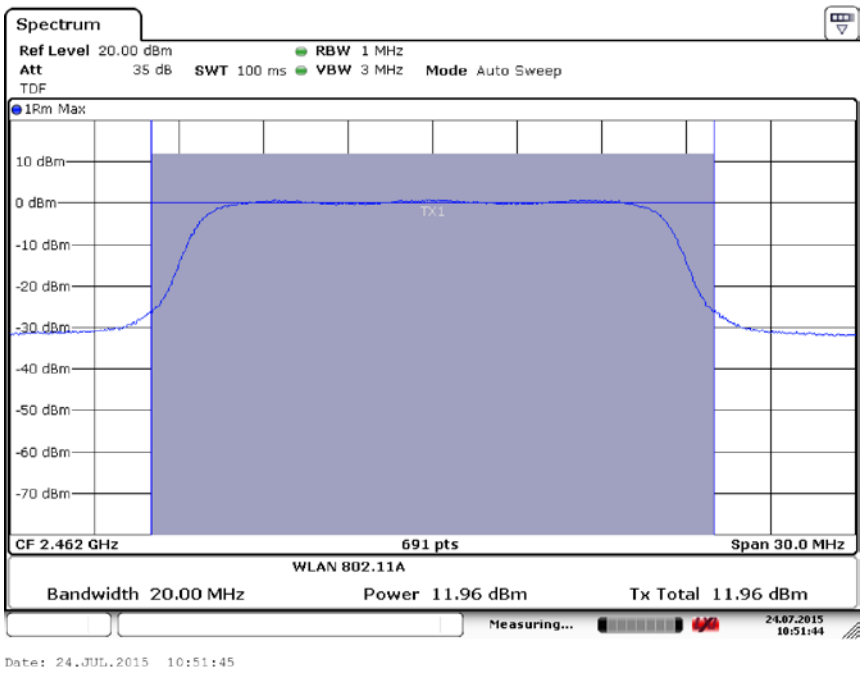



**Fig.33 Maximum Average Output Power (802.11g, Ch 11,48Mbps)**

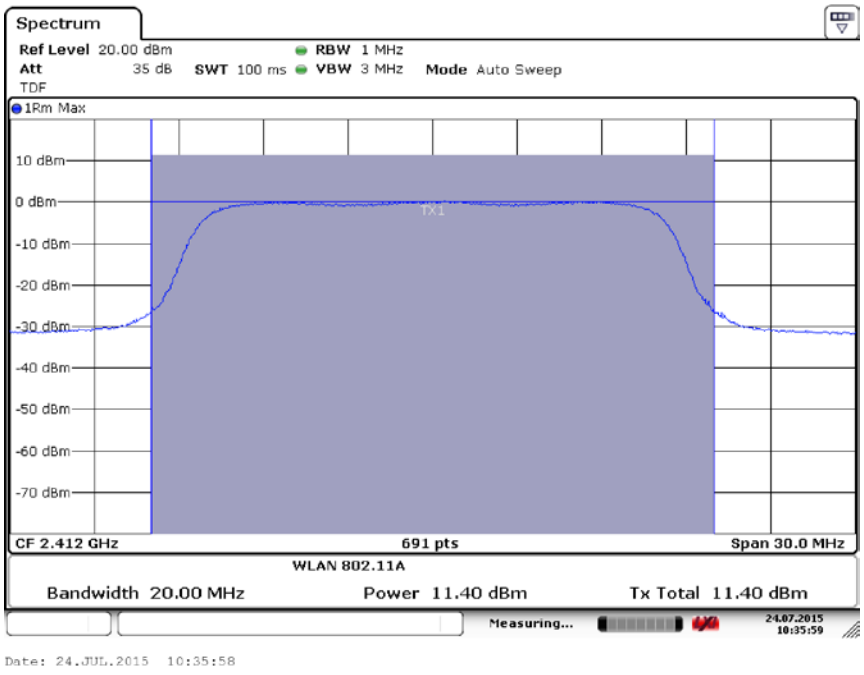



**Fig.34 Maximum Average Output Power (802.11g, Ch 1,54Mbps)**

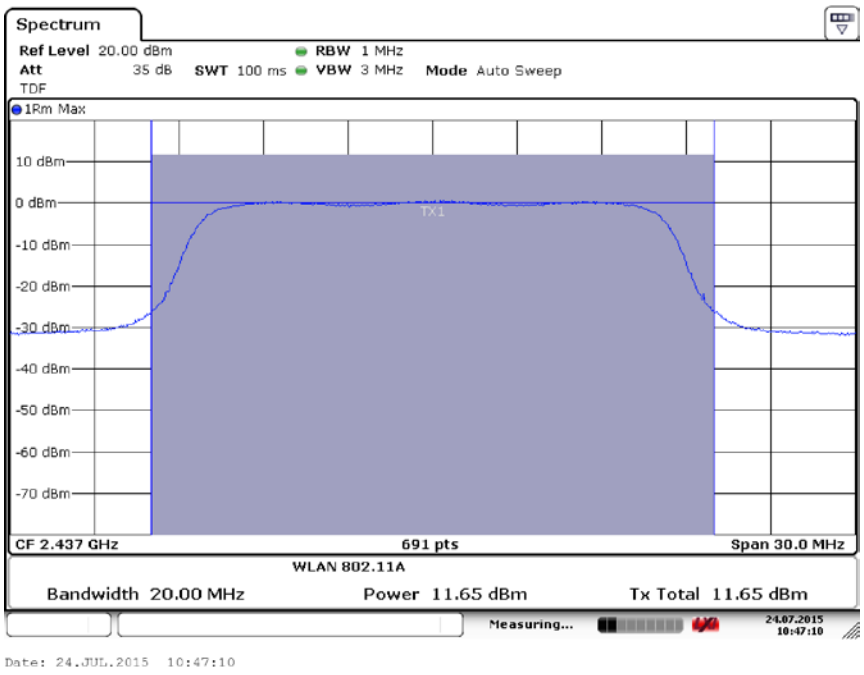



**Fig.35 Maximum Average Output Power (802.11g, Ch 6,54Mbps)**

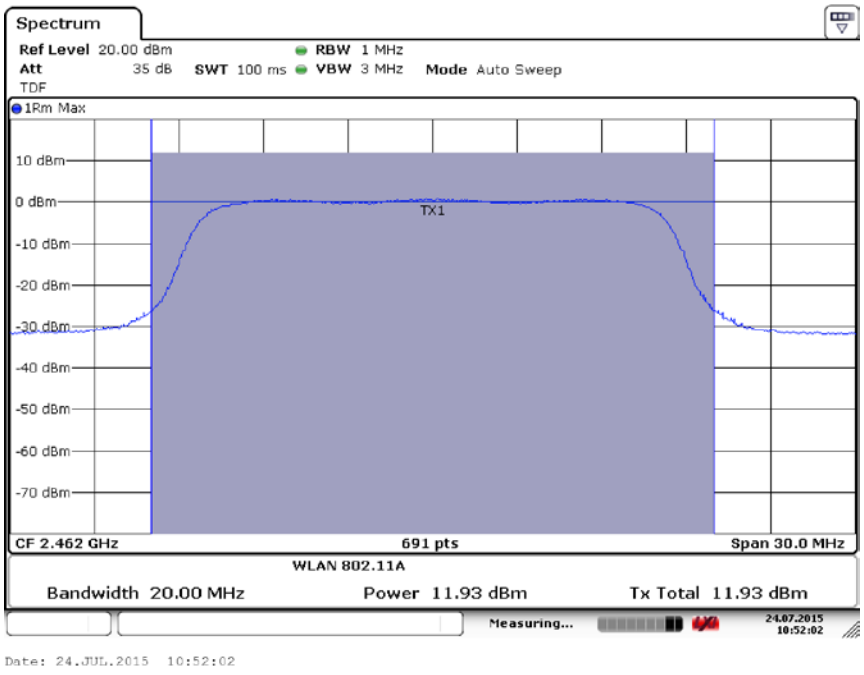



**Fig.36 Maximum Average Output Power (802.11g, Ch 11,54Mbps)**

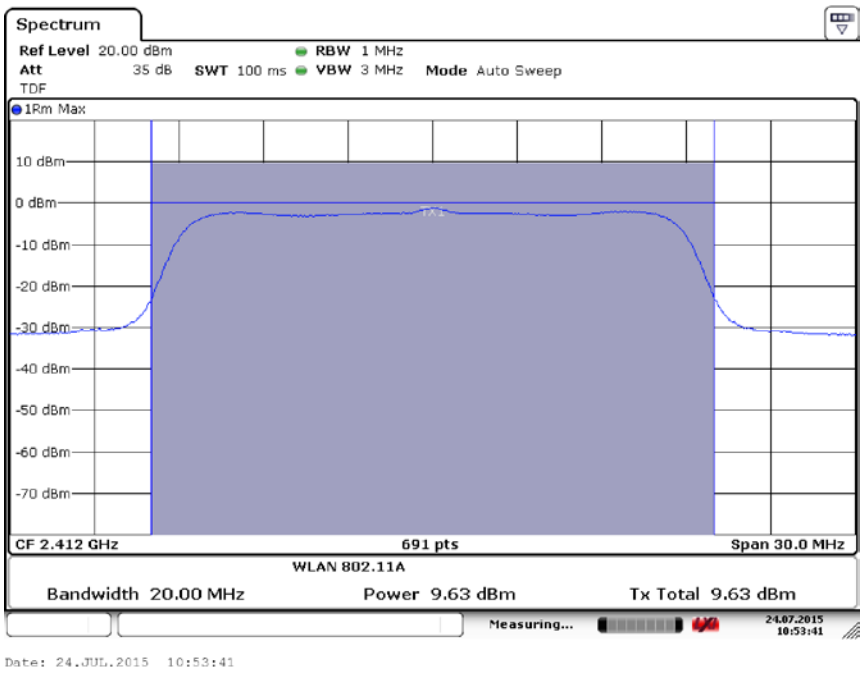



**Fig.37 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS0)**

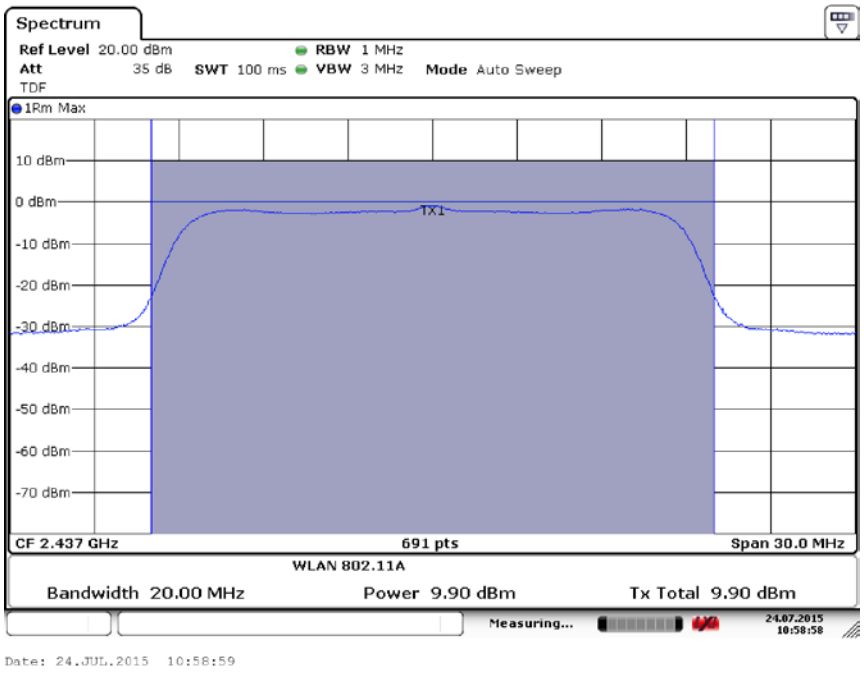



**Fig.38 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS0)**

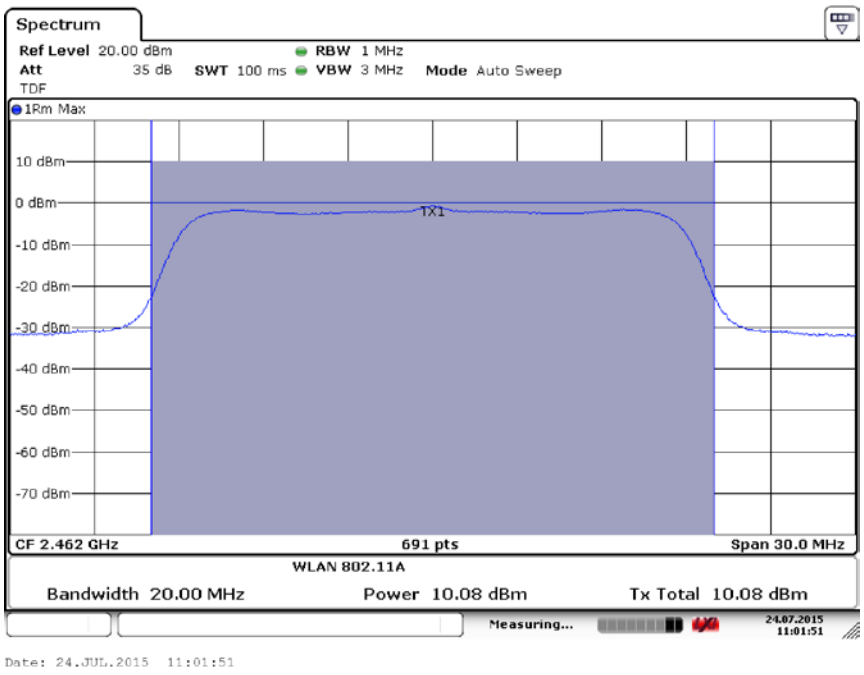



**Fig.39 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS0)**

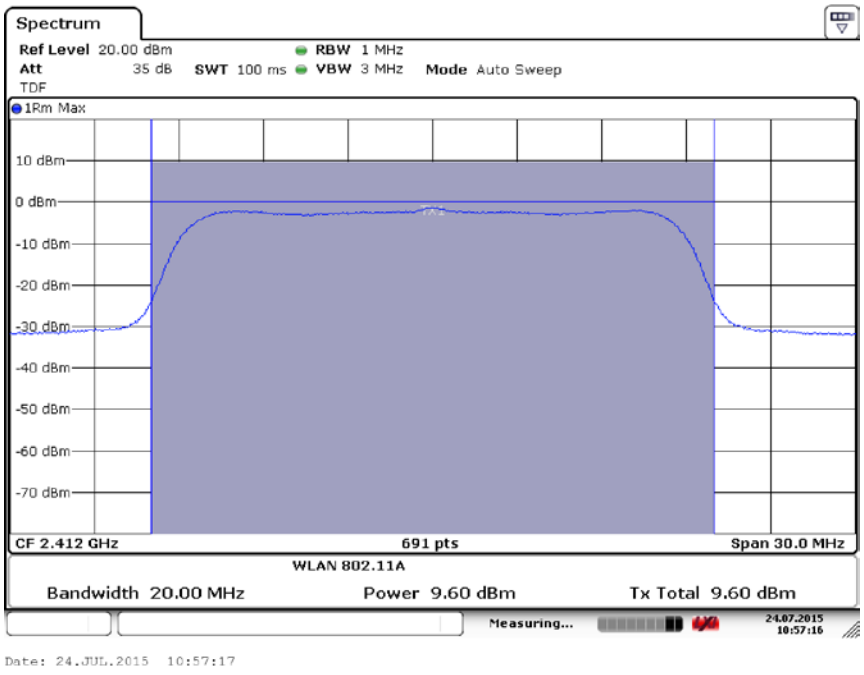



**Fig.40 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS1)**

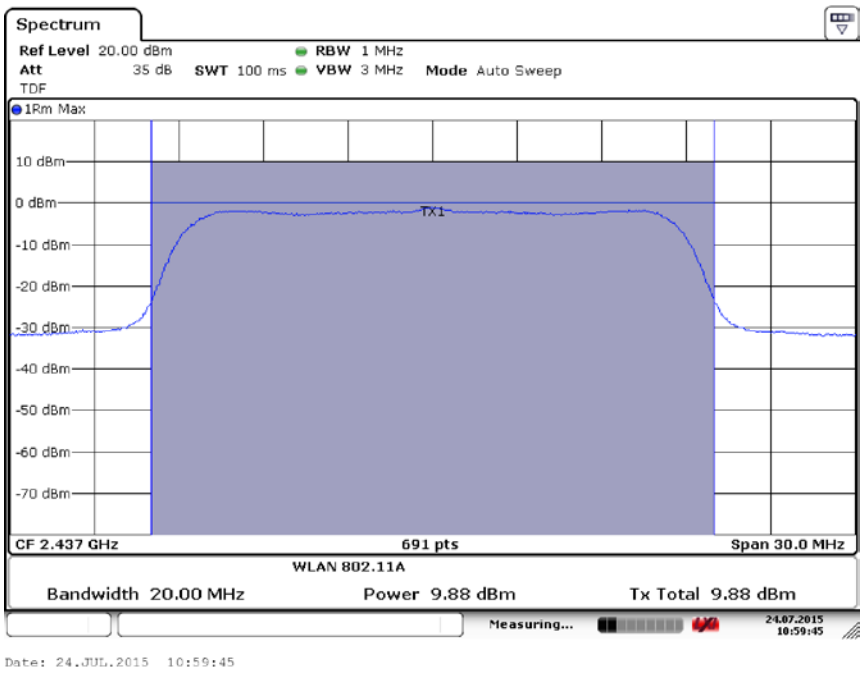



**Fig.41 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS1)**

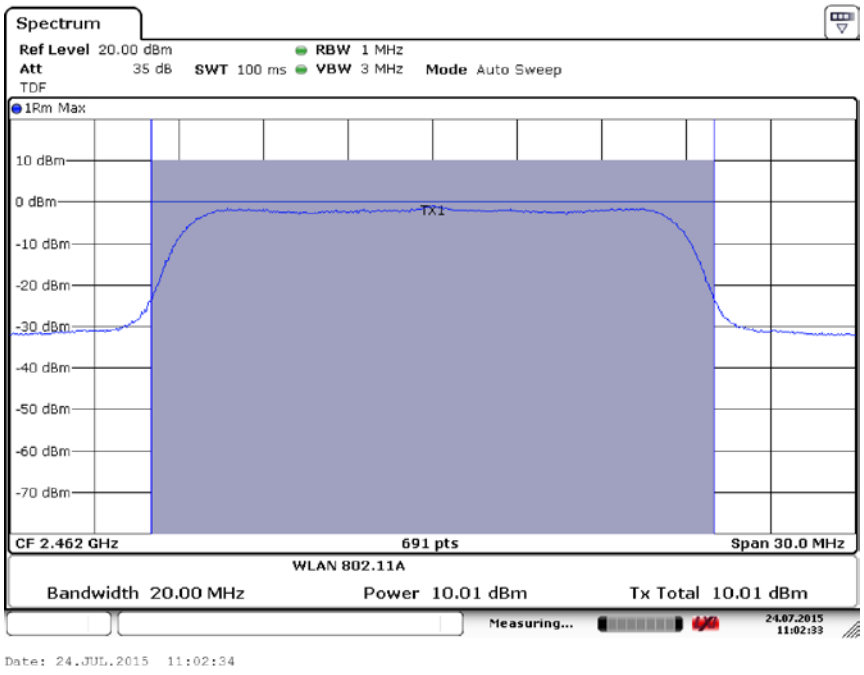



**Fig.42 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS1)**

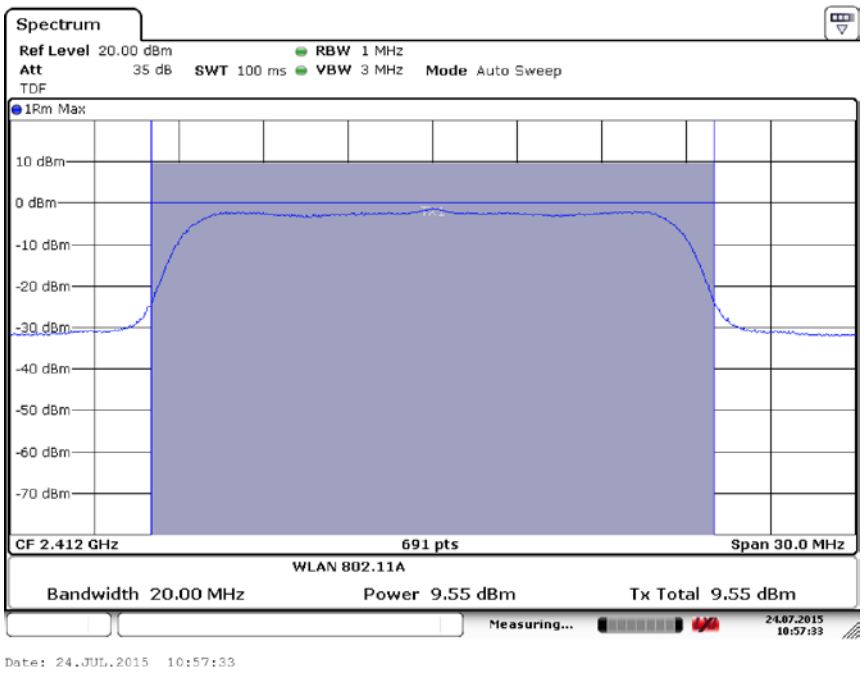



**Fig.43 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS2)**

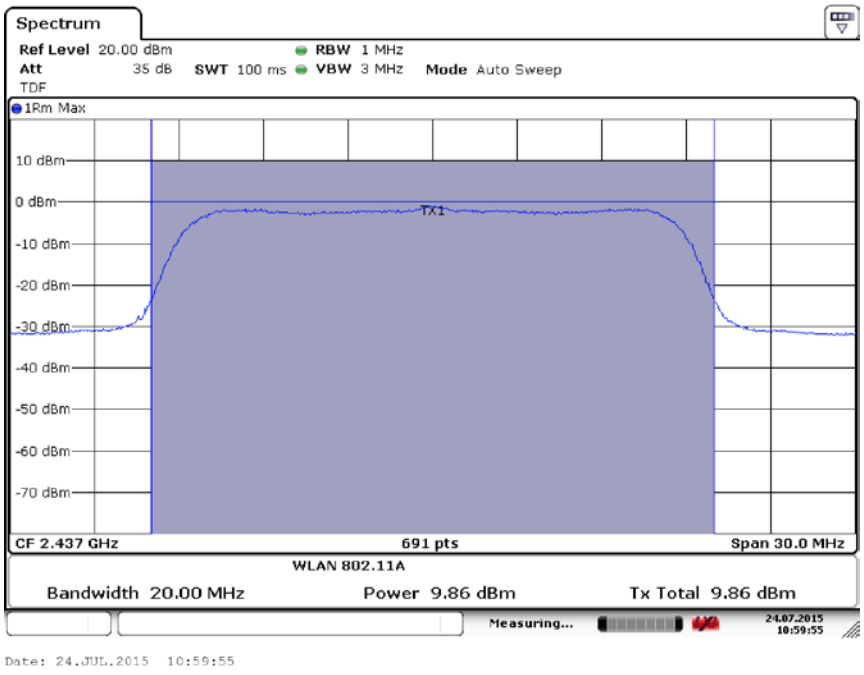



**Fig.44 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS2))**

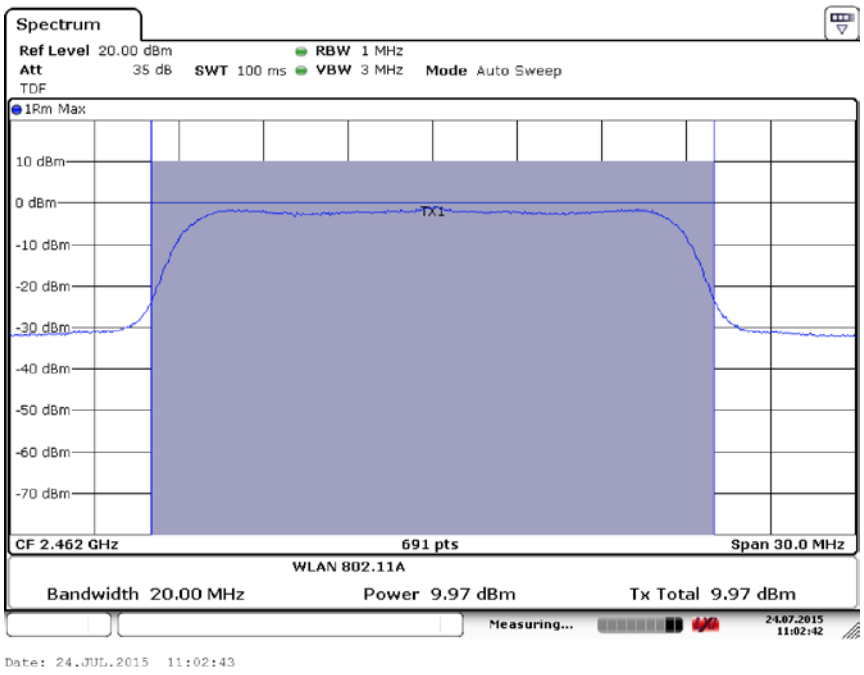



**Fig.45 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS2)**

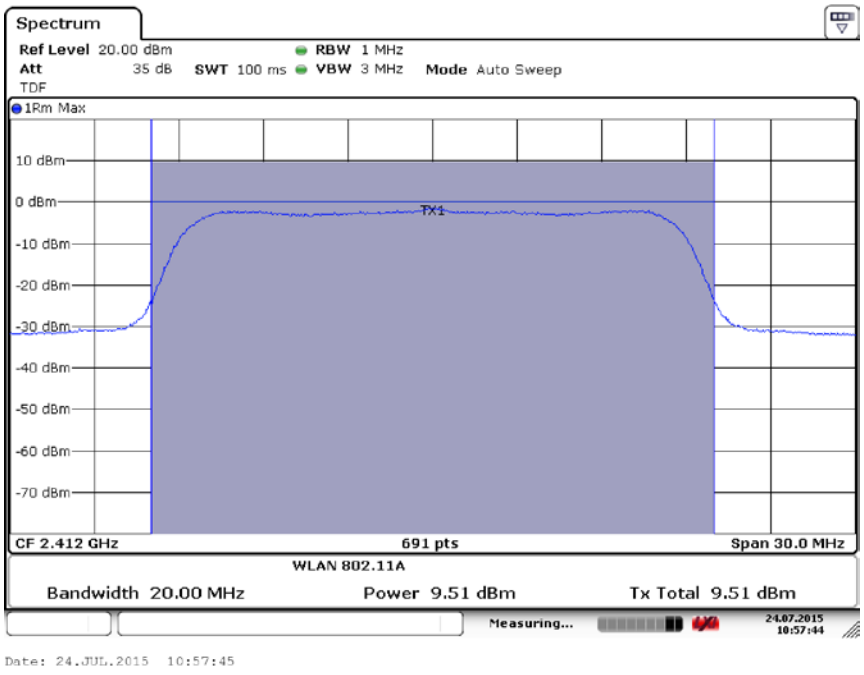



**Fig.46 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS3)**