



**FCC PART 15C  
TEST REPORT  
No. I14N00955-WLAN**

**For**

**ShenZhen Sang Fei Consumer Communications Co,Ltd.**

**WCDMA digital mobile phone**

**Model Name: Philips I908**

**Marketing Name: Philips I908**

**With**

**Hardware Version: I908\_V01**

**Software Version: Philips\_I908\_V01**

**FCC ID: VQRCTI908**

**Issued Date: Oct 21<sup>st</sup>, 2014**

**Test Laboratory:**

***FCC 2.948 Listed: No.310359***

***IC O.A.T.S listed: No.6629C-1***

**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 TMC Beijing.

TMC Beijing, Telecommunication Metrology Center of Ministry of Industry and Information Technology

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

Tel:+86(0)10-62304633-2678 , Fax:+86(0)10-62304633-2504 Email:welcome@emcite.com. www.emcite.com

## CONTENTS

<b>1.</b>	<b>TEST LABORATORY .....</b>	<b>8</b>
1.1.	TESTING LOCATION .....	8
1.2.	TESTING ENVIRONMENT .....	8
1.3.	PROJECT DATA .....	8
1.4.	SIGNATURE .....	8
<b>2.</b>	<b>CLIENT INFORMATION .....</b>	<b>9</b>
2.1.	APPLICANT INFORMATION .....	9
2.2.	MANUFACTURER INFORMATION .....	9
<b>3.</b>	<b>EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE) .....</b>	<b>10</b>
3.1.	ABOUT EUT .....	10
3.2.	INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST .....	10
3.3.	INTERNAL IDENTIFICATION OF AE USED DURING THE TEST .....	10
<b>4.</b>	<b>REFERENCE DOCUMENTS .....</b>	<b>11</b>
4.1.	DOCUMENTS SUPPLIED BY APPLICANT .....	11
4.2.	REFERENCE DOCUMENTS FOR TESTING .....	11
<b>5.</b>	<b>LABORATORY ENVIRONMENT .....</b>	<b>12</b>
<b>6.</b>	<b>SUMMARY OF TEST RESULTS .....</b>	<b>13</b>
6.1.	SUMMARY OF TEST RESULTS .....	13
6.2.	STATEMENTS .....	13
6.3.	TERMS USED IN THE RESULT TABLE .....	13
<b>7.</b>	<b>TEST EQUIPMENTS UTILIZED .....</b>	<b>14</b>
	<b>ANNEX A: EUT PHOTOGRAPH .....</b>	<b>15</b>
	<b>ANNEX B: MEASUREMENT RESULTS .....</b>	<b>17</b>
	B.0 ANTENNA REQUIREMENT .....	17
	B.1 MAXIMUM AVERAGE OUTPUT POWER .....	18
	B.2 PEAK POWER SPECTRAL DENSITY .....	20
	B.3 OCCUPIED 6dB BANDWIDTH .....	21
	B.4 BAND EDGES COMPLIANCE .....	22
	B.5 TRANSMITTER SPURIOUS EMISSION .....	23
	B.5.1 TRANSMITTER SPURIOUS EMISSION - CONDUCTED .....	23
	B.5.2 TRANSMITTER SPURIOUS EMISSION - RADIATED .....	25
	B.6 AC POWERLINE CONDUCTED EMISSION .....	36
	<b>ANNEX C: TEST FIGURE LIST .....</b>	<b>37</b>
FIG. 1	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 1,1MBPS) .....	37
FIG. 2	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 6,1MBPS) .....	37
FIG. 3	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 11,1MBPS) .....	38

FIG. 4	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 1,2MBPS) .....	38
FIG. 5	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 6,2MBPS) .....	39
FIG. 6	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 11,2MBPS).....	39
FIG. 7	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 1,5.5MBPS) .....	40
FIG. 8	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 6,5.5MBPS) .....	40
FIG. 9	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 11,5.5MBPS).....	41
FIG. 10	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 1,11MBPS).....	41
FIG. 11	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 6,11MBPS).....	42
FIG. 12	MAXIMUM AVERAGE OUTPUT POWER (802.11B, CH 11,11MBPS).....	42
FIG. 13	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 1,6MBPS).....	43
FIG. 14	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 6,6MBPS).....	43
FIG. 15	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 11,6MBPS).....	44
FIG. 16	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 1,9MBPS).....	44
FIG. 17	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 6,9MBPS).....	45
FIG. 18	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 11,9MBPS).....	45
FIG. 19	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 1,12MBPS).....	46
FIG. 20	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 6,12MBPS).....	46
FIG. 21	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 11,12MBPS).....	47
FIG. 22	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 1,18MBPS).....	47
FIG. 23	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 6,18MBPS).....	48
FIG. 24	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 11,18MBPS).....	48
FIG. 25	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 1,24MBPS).....	49
FIG. 26	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 6,24MBPS).....	49
FIG. 27	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 11,24MBPS).....	50
FIG. 28	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 1,36MBPS).....	50
FIG. 29	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 6,36MBPS).....	51
FIG. 30	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 11,36MBPS).....	51
FIG. 31	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 1,48MBPS).....	52
FIG. 32	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 6,48MBPS).....	52
FIG. 33	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 11,48MBPS).....	53
FIG. 34	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 1,54MBPS).....	53
FIG. 35	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 6,54MBPS).....	54
FIG. 36	MAXIMUM AVERAGE OUTPUT POWER (802.11G, CH 11,54MBPS).....	54
FIG. 37	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 1,MCS0) .....	55
FIG. 38	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 6,MCS0) .....	55
FIG. 39	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 11,MCS0).....	56
FIG. 40	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 1,MCS1) .....	56
FIG. 41	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 6,MCS1) .....	57
FIG. 42	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 11,MCS1).....	57
FIG. 43	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 1,MCS2) .....	58
FIG. 44	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 6,MCS2)).....	58
FIG. 45	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 11,MCS2).....	59
FIG. 46	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 1,MCS3) .....	59
FIG. 47	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 6,MCS3) .....	60

FIG. 48	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 11,MCS3).....	60
FIG. 49	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 1,MCS4) .....	61
FIG. 50	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 6,MCS4) .....	61
FIG. 51	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 11,MCS4).....	62
FIG. 52	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 1,MCS5) .....	62
FIG. 53	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 6,MCS5) .....	63
FIG. 54	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 11,MCS5).....	63
FIG. 55	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 1,MCS6) .....	64
FIG. 56	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 6,MCS6) .....	64
FIG. 57	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 11,MCS6).....	65
FIG. 58	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 1,MCS7) .....	65
FIG. 59	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 6,MCS7) .....	66
FIG. 60	MAXIMUM AVERAGE OUTPUT POWER (802.11N-20MHZ, CH 11,MCS7).....	66
FIG. 61	MAXIMUM AVERAGE OUTPUT POWER (802.11N-40MHZ, CH 1,MCS0) .....	67
FIG. 62	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH6,MCS0) .....	67
FIG. 63	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH11,MCS0) .....	68
FIG. 64	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH1,MCS1) .....	68
FIG. 65	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH6,MCS1) .....	69
FIG. 66	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH11,MCS1) .....	69
FIG. 67	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH1,MCS2) .....	70
FIG. 68	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH6,MCS2) .....	70
FIG. 69	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH11,MCS2) .....	71
FIG. 70	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH1,MCS3) .....	71
FIG. 71	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH6,MCS3) .....	72
FIG. 72	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH11,MCS3) .....	72
FIG. 73	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH1,MCS4) .....	73
FIG. 74	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH6,MCS4) .....	73
FIG. 75	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH11,MCS4) .....	74
FIG. 76	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH1,MCS5) .....	74
FIG. 77	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH6,MCS5) .....	75
FIG. 78	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH11,MCS5) .....	75
FIG. 79	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH1,MCS6) .....	76
FIG. 80	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH6,MCS6) .....	76
FIG. 81	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH11,MCS6) .....	77
FIG. 82	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH1,MCS7) .....	77
FIG. 83	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH6,MCS7) .....	78
FIG. 84	MAXIMUM AVERAGE OUTPUT POWER (802.11N- 40MHZ,CH11,MCS7) .....	78
FIG. 85	POWER SPECTRAL DENSITY (802.11B, CH 1).....	79
FIG. 86	POWER SPECTRAL DENSITY (802.11B, CH 6).....	79
FIG. 87	POWER SPECTRAL DENSITY (802.11B, CH 11).....	80
FIG. 88	POWER SPECTRAL DENSITY (802.11G, CH 1).....	80
FIG. 89	POWER SPECTRAL DENSITY (802.11G, CH 6).....	81
FIG. 90	POWER SPECTRAL DENSITY (802.11G, CH 11).....	81
FIG. 91	POWER SPECTRAL DENSITY (802.11N-20MHZ, CH 1).....	82

FIG. 92	POWER SPECTRAL DENSITY (802.11N-20MHZ, CH 6).....	82
FIG. 93	POWER SPECTRAL DENSITY (802.11N-20MHZ, CH 11).....	83
FIG. 94	POWER SPECTRAL DENSITY (802.11N-40MHZ, CH 3).....	83
FIG. 95	POWER SPECTRAL DENSITY (802.11N-40MHZ, CH 6).....	84
FIG. 96	POWER SPECTRAL DENSITY (802.11N-40MHZ, CH 9).....	84
FIG. 97	OCCUPIED 6dB BANDWIDTH (802.11B, CH 1).....	85
FIG. 98	OCCUPIED 6dB BANDWIDTH (802.11B, CH 6).....	85
FIG. 99	OCCUPIED 6dB BANDWIDTH (802.11B, CH 11).....	86
FIG. 100	OCCUPIED 6dB BANDWIDTH (802.11G, CH 1).....	86
FIG. 101	OCCUPIED 6dB BANDWIDTH (802.11G, CH 6).....	87
FIG. 102	OCCUPIED 6dB BANDWIDTH (802.11G, CH 11).....	87
FIG. 103	OCCUPIED 6dB BANDWIDTH (802.11 N-20MHZ, CH 1).....	88
FIG. 104	OCCUPIED 6dB BANDWIDTH (802.11 N-20MHZ, CH 6).....	88
FIG. 105	OCCUPIED 6dB BANDWIDTH (802.11N-20MHZ, CH 11).....	89
FIG. 106	OCCUPIED 6dB BANDWIDTH (802.11N-40MHZ, CH 3).....	89
FIG. 107	OCCUPIED 6dB BANDWIDTH (802.11N-40MHZ, CH 6).....	90
FIG. 108	OCCUPIED 6dB BANDWIDTH (802.11N-40MHZ, CH 9).....	90
FIG. 109	BAND EDGES (802.11B, CH 1).....	91
FIG. 110	BAND EDGES (802.11B, CH 11).....	91
FIG. 111	BAND EDGES (802.11G, CH 1).....	92
FIG. 112	BAND EDGES (802.11G, CH 11).....	92
FIG. 113	BAND EDGES (802.11 N-20MHZ, CH 1).....	93
FIG. 114	BAND EDGES (802.11 N-20MHZ, CH 11).....	93
FIG. 115	BAND EDGES (802.11 N-40MHZ, CH 3).....	94
FIG. 116	BAND EDGES (802.11 N-40MHZ, CH 9).....	94
FIG. 117	CONDUCTED SPURIOUS EMISSION (802.11B, CH1, CENTER FREQUENCY).....	95
FIG. 118	CONDUCTED SPURIOUS EMISSION (802.11B, CH1, 30 MHZ-3 GHZ).....	95
FIG. 119	CONDUCTED SPURIOUS EMISSION (802.11B, CH1, 3 GHZ-18 GHZ).....	96
FIG. 120	CONDUCTED SPURIOUS EMISSION (802.11B, CH6, CENTER FREQUENCY).....	96
FIG. 121	CONDUCTED SPURIOUS EMISSION (802.11B, CH6, 30 MHZ-3 GHZ).....	97
FIG. 122	CONDUCTED SPURIOUS EMISSION (802.11B, CH6, 3 GHZ-18 GHZ).....	97
FIG. 123	CONDUCTED SPURIOUS EMISSION (802.11B, CH11, CENTER FREQUENCY).....	98
FIG. 124	CONDUCTED SPURIOUS EMISSION (802.11B, CH11, 30 MHZ-3 GHZ).....	98
FIG. 125	CONDUCTED SPURIOUS EMISSION (802.11B, CH11, 3 GHZ-18 GHZ).....	99
FIG. 126	CONDUCTED SPURIOUS EMISSION (802.11G, CH1, CENTER FREQUENCY).....	99
FIG. 127	CONDUCTED SPURIOUS EMISSION (802.11G, CH1, 30 MHZ-3 GHZ).....	100
FIG. 128	CONDUCTED SPURIOUS EMISSION (802.11G, CH1, 3 GHZ-18 GHZ).....	100
FIG. 129	CONDUCTED SPURIOUS EMISSION (802.11G, CH6, CENTER FREQUENCY).....	101
FIG. 130	CONDUCTED SPURIOUS EMISSION (802.11G, CH6, 30 MHZ-3 GHZ).....	101
FIG. 131	CONDUCTED SPURIOUS EMISSION (802.11G, CH6, 3 GHZ-18 GHZ).....	102
FIG. 132	CONDUCTED SPURIOUS EMISSION (802.11G, CH11, CENTER FREQUENCY).....	102
FIG. 133	CONDUCTED SPURIOUS EMISSION (802.11G, CH11, 30 MHZ-3 GHZ).....	103
FIG. 134	CONDUCTED SPURIOUS EMISSION (802.11G, CH11, 3 GHZ-18 GHZ).....	103
FIG. 135	CONDUCTED SPURIOUS EMISSION (802.11N-20M, CH1, CENTER FREQUENCY).....	104

FIG. 136	CONDUCTED SPURIOUS EMISSION (802.11N-20M, CH1, 30 MHz-3 GHz).....	104
FIG. 137	CONDUCTED SPURIOUS EMISSION (802.11N-20M, CH1, 3 GHz-18 GHz) .....	105
FIG. 138	CONDUCTED SPURIOUS EMISSION (802.11N-20M, CH6, CENTER FREQUENCY) .....	105
FIG. 139	CONDUCTED SPURIOUS EMISSION (802.11N-20M, CH6, 30 MHz-3 GHz).....	106
FIG. 140	CONDUCTED SPURIOUS EMISSION (802.11N-20M, CH6, 3 GHz-18 GHz) .....	106
FIG. 141	CONDUCTED SPURIOUS EMISSION (802.11N-20M, CH11, CENTER FREQUENCY) .....	107
FIG. 142	CONDUCTED SPURIOUS EMISSION (802.11N-20M, CH11, 30 MHz-3 GHz).....	107
FIG. 143	CONDUCTED SPURIOUS EMISSION (802.11N-20M, CH11, 3 GHz-18 GHz).....	108
FIG. 144	CONDUCTED SPURIOUS EMISSION (802.11N-40M, CH3, CENTER FREQUENCY) .....	108
FIG. 145	CONDUCTED SPURIOUS EMISSION (802.11N-40M, CH3, 30 MHz-3 GHz).....	109
FIG. 146	CONDUCTED SPURIOUS EMISSION (802.11N-40M, CH3, 3 GHz-18 GHz) .....	109
FIG. 147	CONDUCTED SPURIOUS EMISSION (802.11N-40M, CH6, CENTER FREQUENCY) .....	110
FIG. 148	CONDUCTED SPURIOUS EMISSION (802.11N-40M, CH6, 30 MHz-3 GHz).....	110
FIG. 149	CONDUCTED SPURIOUS EMISSION (802.11N-40M, CH6, 3 GHz-18 GHz) .....	110
FIG. 150	CONDUCTED SPURIOUS EMISSION (802.11N-40M, CH9, CENTER FREQUENCY) .....	111
FIG. 151	CONDUCTED SPURIOUS EMISSION (802.11N-40M, CH9, 30 MHz-3 GHz).....	111
FIG. 152	CONDUCTED SPURIOUS EMISSION (802.11N-40M, CH9, 3 GHz-18 GHz) .....	112
FIG. 153	CONDUCTED SPURIOUS EMISSION (ALL CHANNELS, 18 GHz-26 GHz).....	112
FIG. 154	RADIATED SPURIOUS EMISSION (802.11B, CH1, 30MHz-1 GHz) .....	113
FIG. 155	RADIATED SPURIOUS EMISSION (802.11B, CH1, 1 GHz-18 GHz) .....	113
FIG. 156	RADIATED SPURIOUS EMISSION (802.11B, CH6, 30MHz-1 GHz) .....	114
FIG. 157	RADIATED SPURIOUS EMISSION (802.11B, CH6, 1 GHz-18 GHz) .....	115
FIG. 158	RADIATED SPURIOUS EMISSION (802.11B, CH11, 30MHz-1 GHz).....	115
FIG. 159	RADIATED SPURIOUS EMISSION (802.11B, CH11, 1 GHz-18 GHz) .....	116
FIG. 160	RADIATED EMISSION POWER (802.11B, CH1, 2380GHz~2450GHz) .....	116
FIG. 161	RADIATED EMISSION POWER (802.11B, CH11, 2450GHz~2500GHz).....	116
FIG. 162	RADIATED SPURIOUS EMISSION (802.11G, CH1, 30MHz-1 GHz) .....	117
FIG. 163	RADIATED SPURIOUS EMISSION (802.11G, CH1, 1 GHz-18 GHz) .....	117
FIG. 164	RADIATED SPURIOUS EMISSION (802.11G, CH6, 30MHz-1 GHz).....	118
FIG. 165	RADIATED SPURIOUS EMISSION (802.11G, CH6, 1 GHz-18 GHz) .....	118
FIG. 166	RADIATED SPURIOUS EMISSION (802.11G, CH11, 30MHz-1 GHz).....	119
FIG. 167	RADIATED SPURIOUS EMISSION (802.11G, CH11, 1 GHz-18 GHz).....	119
FIG. 168	RADIATED EMISSION POWER (802.11G, CH1, 2380GHz~2450GHz).....	120
FIG. 169	RADIATED EMISSION POWER (802.11G, CH11, 2450GHz~2500GHz).....	120
FIG. 170	RADIATED SPURIOUS EMISSION (802.11N-20M, CH1, 30MHz-1 GHz) .....	121
FIG. 171	RADIATED SPURIOUS EMISSION (802.11N-20M, CH1, 1 GHz-18 GHz) .....	121
FIG. 172	RADIATED SPURIOUS EMISSION (802.11N-20M, CH6, 30MHz-1 GHz) .....	122
FIG. 173	RADIATED SPURIOUS EMISSION (802.11N-20M, CH6, 1 GHz-18 GHz) .....	122
FIG. 174	RADIATED SPURIOUS EMISSION (802.11N-20M, CH11, 30MHz-1 GHz).....	123
FIG. 175	RADIATED SPURIOUS EMISSION (802.11N-20M, CH11, 1 GHz-18 GHz) .....	123
FIG. 176	RADIATED EMISSION POWER (802.11N-20M, CH1, 2380GHz~2450GHz) .....	124
FIG. 177	RADIATED EMISSION POWER (802.11N-20M, CH11, 2450GHz~2500GHz).....	124
FIG. 178	RADIATED SPURIOUS EMISSION (802.11N-40M, CH3, 30MHz-1 GHz) .....	125
FIG. 179	RADIATED SPURIOUS EMISSION (802.11N-40M, CH3, 1 GHz-18 GHz) .....	125

FIG. 180	RADIATED SPURIOUS EMISSION (802.11N-40M, CH6, 30MHZ-1 GHz) .....	126
FIG. 181	RADIATED SPURIOUS EMISSION (802.11N-40M, CH6, 1 GHz-18 GHz) .....	126
FIG. 182	RADIATED SPURIOUS EMISSION (802.11N-40M, CH9, 30MHZ-1 GHz) .....	127
FIG. 183	RADIATED SPURIOUS EMISSION (802.11N-40M, CH9, 1 GHz-18 GHz) .....	127
FIG. 184	RADIATED EMISSION POWER (802.11N-40M, CH3, 2380GHZ~2450GHZ) .....	128
FIG. 185	RADIATED EMISSION POWER (802.11N-20M, CH9, 2450GHZ~2500GHZ) .....	128
FIG. 186	RADIATED EMISSION: 18 GHz - 26 GHz .....	129
FIG. 187	AC POWERLINE CONDUCTED EMISSION (TRAFFIC, AE1) .....	130
FIG. 188	AC POWERLINE CONDUCTED EMISSION (IDLE, AE1) .....	131

## 1. Test Laboratory

### 1.1. Testing Location

Company Name: TMC Shenzhen, Telecommunication Metrology Center of MIIT  
Address: No. 12 Building, Shangsha Innovation and Technology Park, Futian District, Shenzhen, P. R. China  
Postal Code: 518048  
Telephone: +86(0)755-33322000  
Fax: +86(0)755-33322001

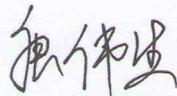
### 1.2. Testing Environment

Normal Temperature: 15°C-30°C  
Extreme Temperature: -20°C/+55°C  
Relative Humidity: 30%-60%

### 1.3. Project data

Project Leader: Zhang Bojun  
Test Engineer: Tang Weisheng  
Testing Start Date: Aug 22<sup>nd</sup>, 2014  
Testing End Date: Sep 4<sup>th</sup>, 2014

### 1.4. Signature



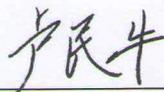
---

Tang Weisheng  
(Prepared this test report)



---

Zhang Bojun  
(Reviewed this test report)



---

Lu Minniu  
Director of the laboratory  
(Approved this test report)

## **2. Client Information**

### **2.1. Applicant Information**

Company Name: ShenZhen Sang Fei Consumer Communications Co.,Ltd.  
Address /Post: 11 Science and Technology Road, Shenzhen Hi-tech industrial Park  
Nanshan District, Shenzhen, PRC  
City: Shenzhen  
Country: China  
E-mail: Helen Lin@Sangfei.com  
Telephone: 0755-26633217  
Fax: 0755-26635272

### **2.2. Manufacturer Information**

Company Name: ShenZhen Sang Fei Consumer Communications Co.,Ltd.  
Address /Post: 11 Science and Technology Road, Shenzhen Hi-tech industrial Park  
Nanshan District, Shenzhen, PRC  
City: Shenzhen  
Country: China  
E-mail: Helen Lin@Sangfei.com  
Telephone: 0755-26633217  
Fax: 0755-26635272

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

#### **3.1. About EUT**

Description	WCDMA/GSM digital mobile phone
Model Name	Philips I908
Market Name	Philips I908
RF Protocol	IEEE 802.11b/g/n20/n40
Operating Frequency	2412MHz~2462MHz
FCC ID	VQRCTI908

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

#### **3.2. Internal Identification of EUT used during the test**

<b>EUT ID*</b>	<b>IMEI</b>	<b>HW Version</b>	<b>SW Version</b>
EUT1	/	I908_V01	Philips_I908_V01

#### **3.3. Internal Identification of AE used during the test**

<b>AE ID*</b>	<b>Description</b>	<b>Type</b>	<b>SN</b>
AE1	Charger	A31-501000	/

\*AE ID: is used to identify the test accessory 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.

<b>Reference</b>	<b>Title</b>	<b>Version</b>
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, 2013 Edition
ANSI C63.4	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2003
KDB558074	Measurement of Digital Transmission Systems Operating under Section 15.247	Jun, 2014

## 5. Laboratory Environment

**Half-anechoic chamber** (11.20 meters×6.10 meters×5.60 meters) did not exceed following limits:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2M Ω
Ground system resistance	< 0.5 Ω
Normalized Site Attenuation (NSA)	< ±3.5dB, with 3m of Measuring distance, 30MHz 1000MHz
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

**Fully-anechoic chamber** (11.20 meters×6.10 meters×6.60 meters) did not exceed following limits:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2M Ω
Ground system resistance	< 0.5 Ω
VSWR	Between 0 and 6 dB, from 30MHz to 18 000 MHz

**Conduction Lab** did not exceed following limits:

Temperature	Min.=15 °C, Max.=30 °C
Relative humidity	Min.=30 %, Max.= 60 %
Shielding effectiveness	> 80 dB
Electrical insulation	> 2M Ω
Ground system resistance	< 0.5 Ω

## 6. Summary of Test Results

### 6.1. Summary of Test Results

No	Test cases	Sub-clause of Part15C	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

### 6.2. Statements

TMC has evaluated the test cases requested by the applicant/manufacturer as listed in section 6.1 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in section 4.2

### 6.3. 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

## 7. Test Equipments Utilized

### Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Vector Signal Analyzer	FSV40	100903	Rohde & Schwarz	2015-04-22	1 year

### Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Chamber	FACT5-2.0	4166	ETS-Lindgren	2016-05-29	3 years
2	Test Receiver	ESCI	100701	Rohde & Schwarz	2015-07-30	1 year
3	Spectrum Analyzer	FSP40	100378	Rohde & Schwarz	2014-12-20	1 year
4	BiLog Antenna	VULB9163	9163-329	Schwarzbeck	2017-01-20	3 years
5	Test Receiver	ESCI	100702	Rohde & Schwarz	2015-07-30	1 year
6	LISN	ESH2-Z5	100196	Rohde & Schwarz	2015-01-14	1 year
7	Signal Generator	SMR40	100541	Rohde & Schwarz	2014-12-26	1 year
8	Dual-Ridge Waveguide Horn Antenna	3117	00066577	ETS-Lindgren	2016-04-01	3 years
9	Loop Antenna	HLA6120	35779	TESEQ	2016-02-25	3 years
10	EMI Antenna	3160-09	00118383	ETS-Lindgren	2015-09-05	3 years

### Anechoic chamber

Fully anechoic chamber by ETS-Lindgren.

**ANNEX A: EUT photograph**



**Pic A-1 Mobile phone**



**Pic A-2 Mobile phone**



Pic A-3 Charger



Pic A-4 Charger

## ANNEX B: MEASUREMENT RESULTS

### B.0 Antenna requirement

**Measurement Limit:**

Standard	Requirement
FCC CRF Part 15.203	<p>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.</p>

**Conclusion: The Directional gains of antenna used for transmitting is 2.8 dBi.  
The RF transmitter uses an integrate antenna without connector.**

## B.1 Maximum Average Output Power

### Measurement Limit and Method:

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	13.06	Fig.2	13.07	Fig.3	13.19
	2	Fig.4	13.05	Fig.5	12.82	Fig.6	13.13
	5.5	Fig.7	13.25	Fig.8	13.03	Fig.9	13.24
	11	Fig.10	13.12	Fig.11	12.90	Fig.12	13.24
802.11g	6	Fig.13	11.52	Fig.14	11.59	Fig.15	11.76
	9	Fig.16	11.42	Fig.17	11.55	Fig.18	11.70
	12	Fig.19	11.11	Fig.20	11.52	Fig.21	11.53
	18	Fig.22	11.00	Fig.23	11.61	Fig.24	11.72
	24	Fig.25	11.90	Fig.26	11.25	Fig.27	11.64
	36	Fig.28	10.58	Fig.29	11.22	Fig.30	11.61
	48	Fig.31	10.57	Fig.32	11.26	Fig.33	11.68
	54	Fig.34	10.59	Fig.35	11.26	Fig.36	11.64

**802.11n mode**

Mode	Data Rate (MCS Index)	Test Result (dBm)					
		2412MHz (Ch1)		2437MHz (Ch6)		2462 MHz (Ch11)	
802.11n (20MHz)	MCS0	Fig.37	11.40	Fig.38	11.44	Fig.39	11.63
	MCS1	Fig.40	11.41	Fig.41	11.41	Fig.42	11.54
	MCS2	Fig.43	11.42	Fig.44	11.45	Fig.45	11.27
	MCS3	Fig.46	11.46	Fig.47	11.23	Fig.48	11.25
	MCS4	Fig.49	11.37	Fig.50	11.21	Fig.51	10.77
	MCS5	Fig.52	11.14	Fig.53	11.18	Fig.54	10.81
	MCS6	Fig.55	11.16	Fig.56	11.16	Fig.57	10.83
	MCS7	Fig.58	11.08	Fig.59	11.12	Fig.60	10.56

Mode	Data Rate (MCS Index)	Test Result (dBm)					
		2422MHz (Ch3)		2437MHz (Ch6)		2452 MHz (Ch9)	
802.11n (40MHz)	MCS0	Fig.61	7.57	Fig.62	7.72	Fig.63	7.90
	MCS1	Fig.64	7.40	Fig.65	7.46	Fig.66	7.71
	MCS2	Fig.67	7.38	Fig.68	7.41	Fig.69	7.41
	MCS3	Fig.70	7.35	Fig.71	7.42	Fig.72	7.47
	MCS4	Fig.73	7.37	Fig.74	7.43	Fig.75	7.51
	MCS5	Fig.76	7.11	Fig.77	7.44	Fig.78	7.50
	MCS6	Fig.79	7.14	Fig.80	7.42	Fig.81	7.53
	MCS7	Fig.82	7.07	Fig.83	7.42	Fig.84	7.40

**Conclusion: Pass**

## B.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	-16.08	P
	6	Fig.86	-16.59	P
	11	Fig.87	-16.41	P
802.11g	1	Fig.88	-18.45	P
	6	Fig.89	-18.49	P
	11	Fig.90	-18.21	P

#### 802.11n mode

Mode	Channel	Peak Power Spectral Density(dBm)		Conclusion
802.11n (20MHz)	1	Fig.91	-18.21	P
	6	Fig.92	-18.46	P
	11	Fig.93	-17.28	P
802.11n (40MHz)	3	Fig.94	-21.01	P
	6	Fig.95	-21.16	P
	9	Fig.96	-21.55	P

See ANNEX C for test graphs.

Conclusion: Pass

### B.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	7988	P
	6	Fig.98	7988	P
	11	Fig.99	7988	P
802.11g	1	Fig.100	15195	P
	6	Fig.101	14674	P
	11	Fig.102	14978	P

**802.11n mode**

Mode	Channel	Test Results ( kHz)		conclusion
802.11n (20MHz)	1	Fig.103	15326	P
	6	Fig.104	14935	P
	11	Fig.105	15369	P
802.11n (40MHz)	3	Fig.106	32301	P
	6	Fig.107	34732	P
	9	Fig.108	35014	P

See ANNEX C for test graphs.

**Conclusion: Pass**

## B.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**

## B.5 Transmitter Spurious Emission

### B.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**

### B.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( $\mu$ V/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	30 MHz ~1 GHz	Fig.154	P
		1 GHz ~ 18 GHz	Fig.155	P
	6	30 MHz ~1 GHz	Fig.156	P
		1 GHz ~ 18 GHz	Fig.157	P
	11	30 MHz ~1 GHz	Fig.158	P
		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	30 MHz ~1 GHz	Fig.162	P
		1 GHz ~ 18 GHz	Fig.163	P
	6	30 MHz ~1 GHz	Fig.164	P
		1 GHz ~ 18 GHz	Fig.165	P
	11	30 MHz ~1 GHz	Fig.166	P
		1 GHz ~ 18 GHz	Fig.167	P
	Power(CH1)	2.38 GHz ~ 2.45 GHz	Fig.168	P
Power(CH11)	2.45 GHz ~ 2.5 GHz	Fig.169	P	

**802.11n mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (20M)	1	30 MHz ~1 GHz	Fig.170	P
		1 GHz ~ 18 GHz	Fig.171	P
	6	30 MHz ~1 GHz	Fig.172	P
		1 GHz ~ 18 GHz	Fig.173	P
	11	30 MHz ~1 GHz	Fig.174	P
		1 GHz ~ 18 GHz	Fig.175	P
	Power(CH1)	2.38 GHz ~ 2.45 GHz	Fig.176	P
Power(CH11)	2.45 GHz ~ 2.5 GHz	Fig.177	P	
802.11n (40M)	3	30 MHz ~1 GHz	Fig.178	P
		1 GHz ~ 18 GHz	Fig.179	P
	6	30 MHz ~1 GHz	Fig.180	P
		1 GHz ~ 18 GHz	Fig.181	P
	9	30 MHz ~1 GHz	Fig.182	P
		1 GHz ~ 18 GHz	Fig.183	P
	Power(CH3)	2.38 GHz ~ 2.45 GHz	Fig.184	P
Power(CH9)	2.45 GHz ~ 2.5 GHz	Fig.185	P	
/	All channels	18 GHz~ 26.5 GHz	Fig.186	P

**802.11b CH1 (1-18GHz)**

Frequency (MHz)	MaxPeak (dBμV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
14471.000	57.1	V	13.0	16.9	74.0
15083.000	57.8	H	13.0	16.2	74.0
15679.000	59.2	V	13.8	14.8	74.0
16250.000	59.1	V	14.6	14.9	74.0
16828.000	59.6	H	15.5	14.4	74.0
17339.000	60.5	H	15.5	13.5	74.0

Frequency (MHz)	Average (dBμV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
14463.000	44.9	H	13.0	9.1	54.0
14986.000	45.5	V	13.7	8.5	54.0
15793.000	47.1	V	14.2	6.9	54.0
16265.000	47.3	H	14.7	6.7	54.0
16833.000	47.9	V	15.5	6.1	54.0
17359.000	47.6	V	15.5	6.4	54.0

**802.11b CH 6(1-18GHz)**

Frequency (MHz)	MaxPeak (dBμV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
14545.000	57.1	H	12.6	16.9	74.0
15076.000	58.6	V	13.1	15.4	74.0
15771.000	59.7	V	14.1	14.3	74.0
16257.000	59.9	V	14.6	14.1	74.0
16814.000	61.3	H	15.4	12.7	74.0
17847.000	60.4	H	15.8	13.6	74.0

Frequency (MHz)	Average (dBμV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
14528.000	45.0	V	12.7	9.0	54.0
15156.000	45.8	V	13.0	8.2	54.0
15692.000	47.5	H	13.9	6.5	54.0
16204.000	48.2	V	14.4	5.8	54.0
16816.000	48.8	V	15.4	5.2	54.0
17288.000	48.4	V	15.4	5.6	54.0

**802.11b CH11 (1-18GHz)**

Frequency (MHz)	MaxPeak (dBμV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
14502.000	57.0	H	12.8	17.0	74.0
15036.000	58.0	H	13.4	16.0	74.0
15788.000	59.8	V	14.2	14.2	74.0
16262.000	59.0	V	14.6	15.0	74.0
16783.000	61.5	V	15.3	12.5	74.0
17260.000	59.7	H	15.3	14.3	74.0

Frequency (MHz)	Average (dBμV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
14400.000	45.0	V	13.4	9.0	54.0
14981.000	45.7	V	13.7	8.3	54.0
15763.000	47.3	V	14.1	6.7	54.0
16278.000	47.6	H	14.7	6.4	54.0
16827.000	48.3	V	15.5	5.7	54.0
17274.000	48.1	V	15.4	5.9	54.0

**802.11g CH1 (1-18GHz)**

Frequency (MHz)	MaxPeak (dBμV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
14502.000	56.9	V	12.8	17.1	74.0
15058.000	57.8	V	13.2	16.2	74.0
15819.000	58.8	V	14.3	15.2	74.0
16313.000	59.9	V	14.9	14.1	74.0
16742.000	60.3	V	15.0	13.7	74.0
17358.000	60.5	V	15.5	13.5	74.0

Frequency (MHz)	Average (dBμV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
14529.000	45.1	V	12.6	8.9	54.0
15178.000	45.7	V	13.1	8.3	54.0
15717.000	47.5	V	14.0	6.5	54.0
16280.000	47.9	V	14.7	6.1	54.0
16834.000	48.5	V	15.5	5.5	54.0
17277.000	48.3	V	15.4	5.7	54.0

**802.11g CH6 (1-18GHz)**

Frequency (MHz)	MaxPeak (dBμV/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
14282.000	56.7	H	13.1	17.3	74.0
15138.000	57.5	V	12.8	16.5	74.0
15775.000	59.4	V	14.2	14.6	74.0
16164.000	60.1	V	14.5	13.9	74.0
16714.000	60.2	V	14.9	13.8	74.0
17857.000	60.5	V	15.8	13.5	74.0

Frequency (MHz)	Average (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14507.000	45.1	V	12.8	8.9	54.0
15168.000	45.8	V	13.0	8.2	54.0
15769.000	47.5	V	14.1	6.5	54.0
16180.000	48.0	H	14.5	6.0	54.0
16826.000	48.7	V	15.5	5.3	54.0
17362.000	48.3	V	15.5	5.7	54.0

**802.11g CH11 (1-18GHz)**

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14172.000	56.6	V	12.5	17.4	74.0
15057.000	58.1	V	13.2	15.9	74.0
15709.000	58.6	H	13.9	15.4	74.0
16498.000	59.7	V	15.3	14.3	74.0
16820.000	60.0	H	15.5	14.0	74.0
17768.000	60.5	H	15.7	13.5	74.0

Frequency (MHz)	Average (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14452.000	45.0	V	13.1	9.0	54.0
15050.000	45.8	V	13.3	8.2	54.0
15768.000	47.4	V	14.1	6.6	54.0
16322.000	47.5	V	15.0	6.5	54.0
16846.000	48.2	H	15.6	5.8	54.0
17323.000	47.8	V	15.4	6.2	54.0

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

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14179.000	56.7	V	12.6	17.3	74.0
15088.000	57.1	H	13.0	16.9	74.0
15735.000	59.6	V	14.0	14.4	74.0
16357.000	60.1	V	15.2	13.9	74.0
16865.000	60.0	V	15.7	14.0	74.0
17838.000	59.5	H	15.8	14.5	74.0

Frequency (MHz)	Average (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14445.000	45.1	V	13.1	8.9	54.0
15060.000	45.7	V	13.2	8.3	54.0
15771.000	47.5	H	14.1	6.5	54.0
16265.000	47.4	V	14.7	6.6	54.0
16851.000	48.3	V	15.6	5.7	54.0
17359.000	47.7	V	15.5	6.3	54.0

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

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14461.000	57.3	V	13.0	16.7	74.0
15115.000	57.8	V	12.8	16.2	74.0
15703.000	58.8	V	13.9	15.2	74.0
16310.000	60.1	H	14.9	13.9	74.0
16830.000	61.4	V	15.5	12.6	74.0
17281.000	60.7	H	15.4	13.3	74.0

Frequency (MHz)	Average (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14531.000	45.2	V	12.6	8.8	54.0
15064.000	45.8	H	13.2	8.2	54.0
15690.000	47.5	V	13.9	6.5	54.0
16202.000	47.9	V	14.4	6.1	54.0
16774.000	48.6	V	15.2	5.4	54.0
17293.000	48.2	V	15.4	5.8	54.0

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

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14178.000	57.1	H	12.6	16.9	74.0
14985.000	57.7	V	13.7	16.3	74.0
15675.000	60.4	V	13.8	13.6	74.0
16306.000	59.7	V	14.9	14.3	74.0
16707.000	60.6	V	14.8	13.4	74.0
17805.000	60.4	H	15.7	13.6	74.0

Frequency (MHz)	Average (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14543.000	45.1	V	12.6	8.9	54.0
15054.000	45.7	V	13.2	8.3	54.0
15675.000	47.5	V	13.8	6.5	54.0
16234.000	48.0	V	14.5	6.0	54.0
16823.000	48.6	H	15.5	5.4	54.0
17339.000	48.3	V	15.5	5.7	54.0

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

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14085.000	57.0	V	12.1	17.0	74.0
15054.000	57.8	V	13.2	16.2	74.0
15818.000	59.4	V	14.3	14.6	74.0
16275.000	59.9	H	14.7	14.1	74.0
16794.000	60.5	H	15.3	13.5	74.0
17289.000	60.3	H	15.4	13.7	74.0

Frequency (MHz)	Average (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14503.000	45.2	V	12.8	8.8	54.0
15043.000	45.7	V	13.3	8.3	54.0
15677.000	47.4	H	13.8	6.6	54.0
16203.000	47.9	V	14.4	6.1	54.0
16787.000	48.8	H	15.3	5.2	54.0
17306.000	48.3	H	15.4	5.7	54.0

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

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14498.000	57.9	V	12.8	16.1	74.0
15000.000	57.7	H	13.6	16.3	74.0
15771.000	59.5	H	14.1	14.5	74.0
16296.000	59.4	V	14.8	14.6	74.0
16738.000	61.0	V	15.0	13.0	74.0
17435.000	60.8	V	15.6	13.2	74.0

Frequency (MHz)	Average (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14492.000	45.1	V	12.9	8.9	54.0
15167.000	45.8	V	13.0	8.2	54.0
15776.000	47.5	H	14.2	6.5	54.0
16203.000	47.9	V	14.4	6.1	54.0
16821.000	48.8	H	15.5	5.2	54.0
17347.000	48.3	V	15.5	5.7	54.0

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

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14222.000	57.0	H	12.8	17.0	74.0
15122.000	57.3	V	12.8	16.7	74.0
15741.000	58.6	H	14.0	15.4	74.0
16234.000	59.3	V	14.5	14.7	74.0
16869.000	60.3	V	15.7	13.7	74.0
17326.000	59.8	H	15.4	14.2	74.0

Frequency (MHz)	Average (dB $\mu$ V/m)	Polarization	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V/m)
14398.000	45.0	V	13.4	9.0	54.0
15057.000	45.5	V	13.2	8.5	54.0
15773.000	47.1	H	14.2	6.9	54.0
16329.000	47.2	H	15.0	6.8	54.0
16828.000	47.9	V	15.5	6.1	54.0
17382.000	47.4	V	15.5	6.6	54.0

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

## B.6 AC Powerline Conducted Emission

### Test Condition:

Voltage (V)	Frequency (Hz)
120	60

### Measurement Result and limit:

#### WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		Traffic	Idle	
0.15 to 0.5	66 to 56	Fig.187	Fig.188	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)

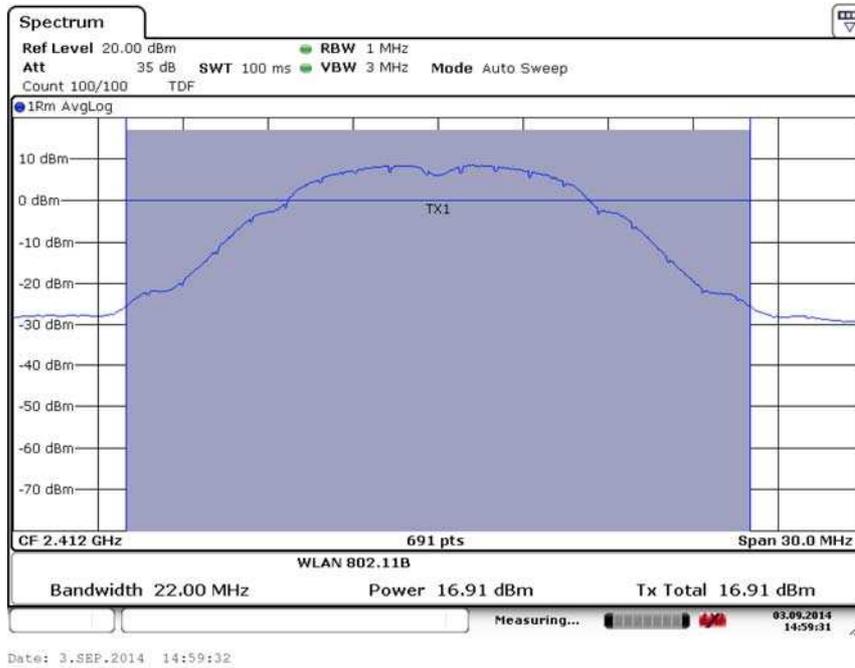
Frequency range (MHz)	Average-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		Traffic	Idle	
0.15 to 0.5	56 to 46	Fig.187	Fig.188	P
0.5 to 5	46			
5 to 30	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

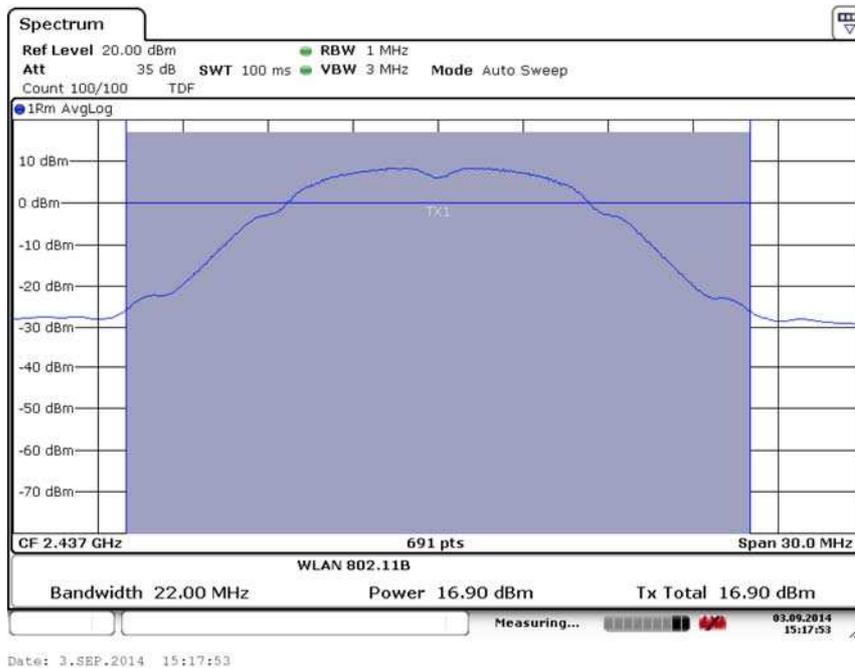
See ANNEX C for test graphs.

**Conclusion: Pass**

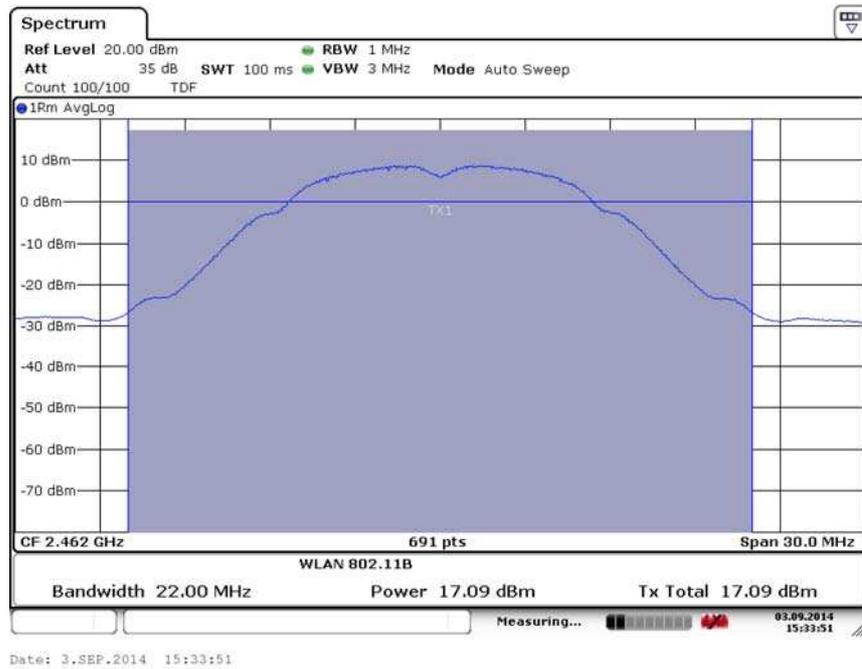
### ANNEX C: TEST FIGURE LIST



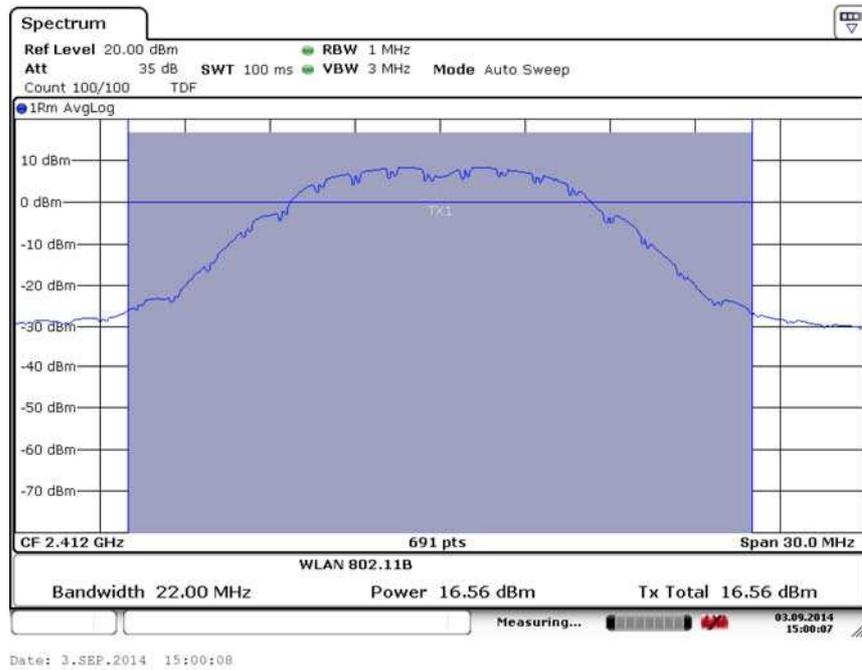
**Fig. 1 Maximum Average Output Power (802.11b, Ch 1,1Mbps)**



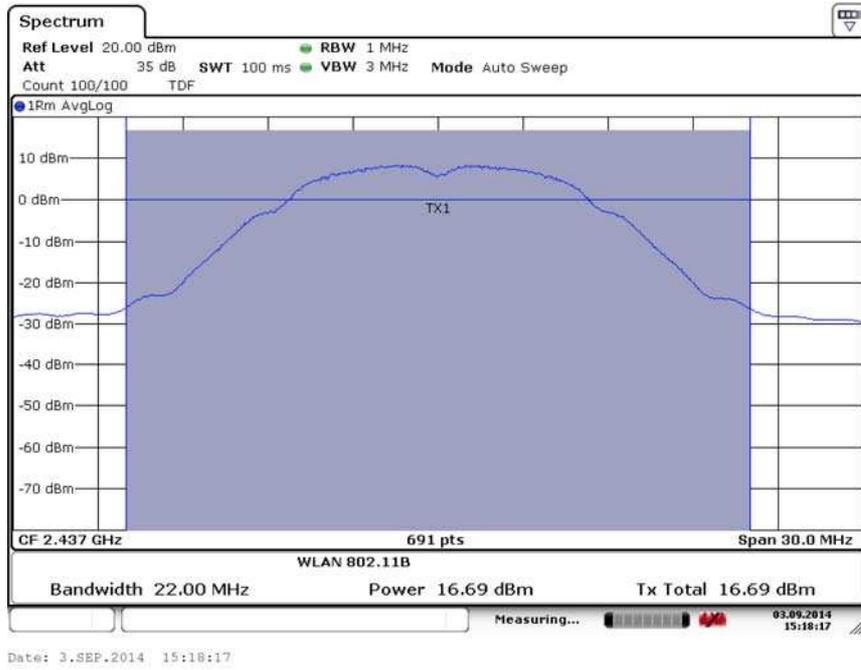
**Fig. 2 Maximum Average Output Power (802.11b, Ch 6,1Mbps)**



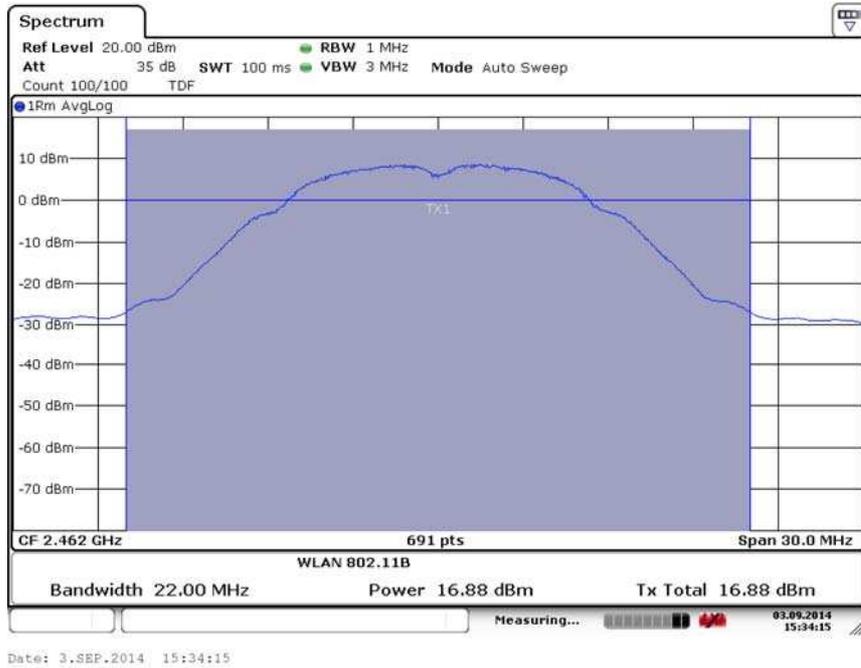
**Fig. 3 Maximum Average Output Power (802.11b, Ch 11,1Mbps)**



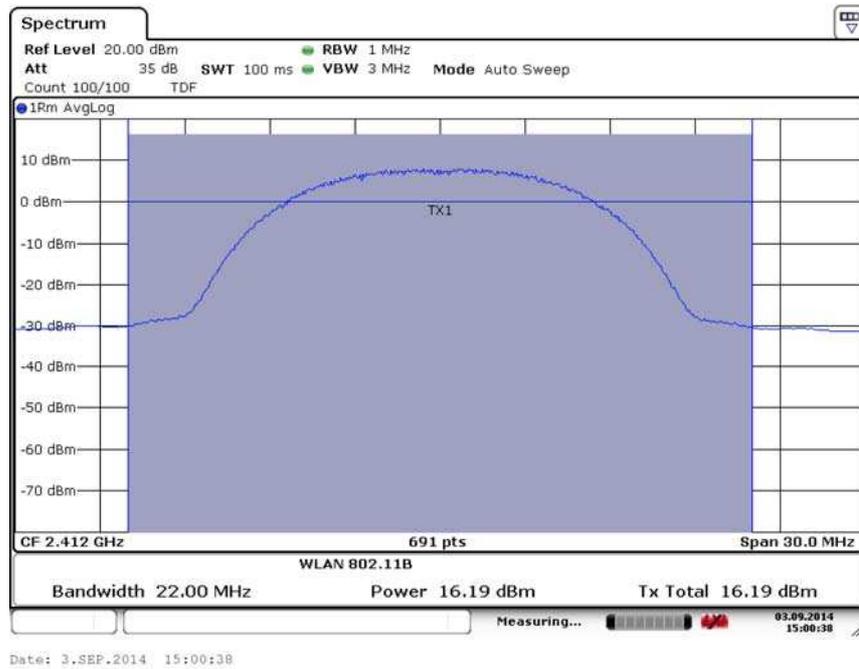
**Fig. 4 Maximum Average Output Power (802.11b, Ch 1,2Mbps)**



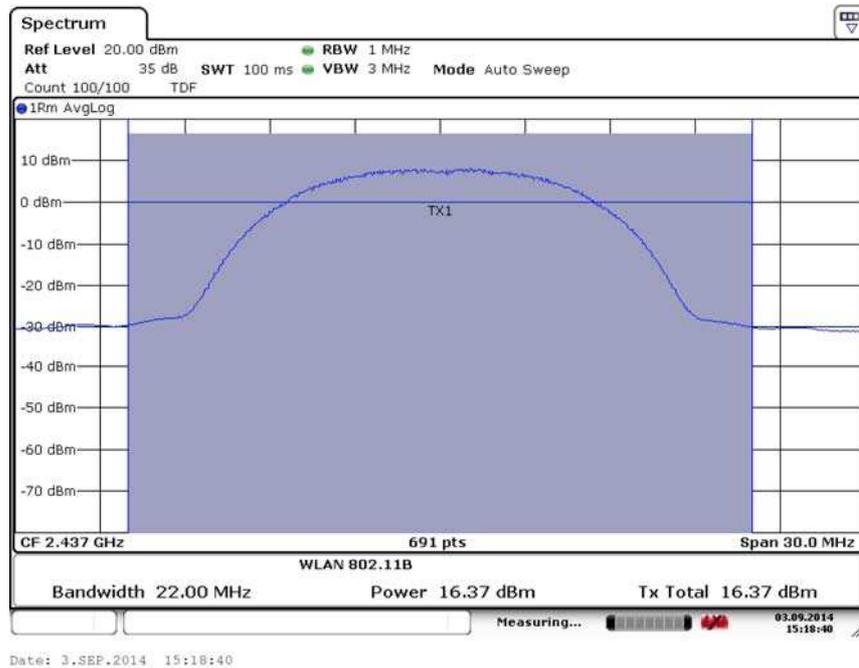
**Fig. 5 Maximum Average Output Power (802.11b, Ch 6,2Mbps)**



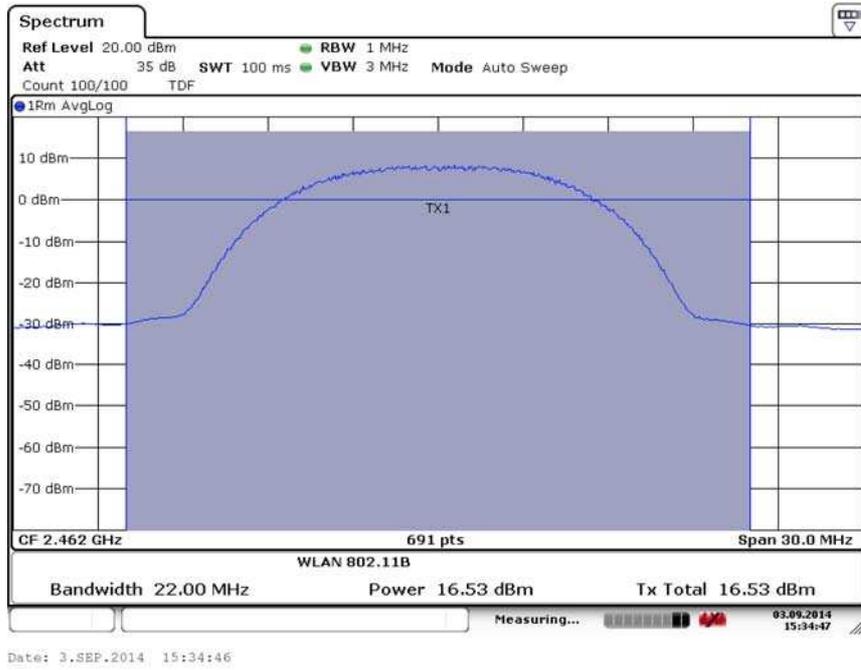
**Fig. 6 Maximum Average Output Power (802.11b, Ch 11,2Mbps)**



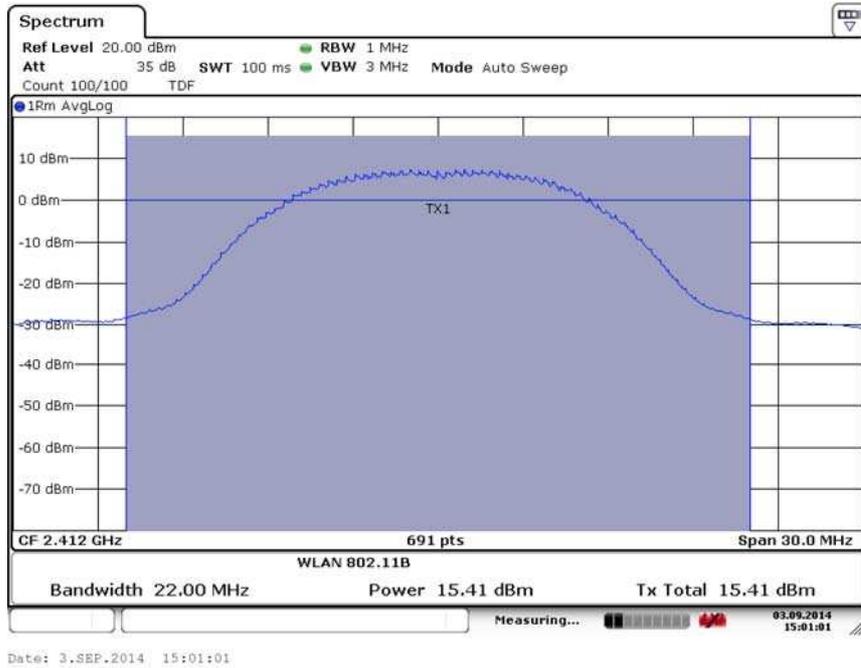
**Fig. 7 Maximum Average Output Power (802.11b, Ch 1,5.5Mbps)**



**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)**

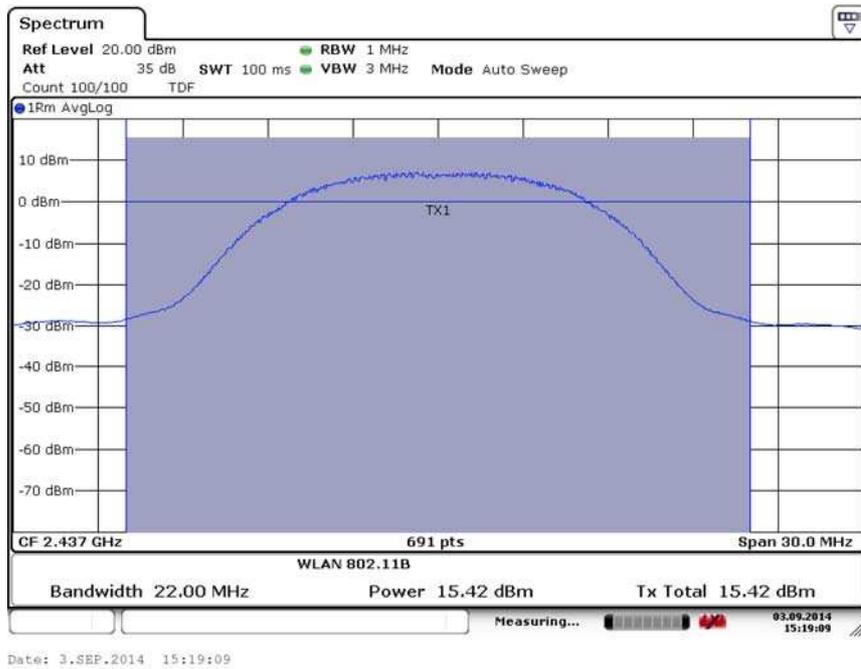


Fig. 11 Maximum Average Output Power (802.11b, Ch 6,11Mbps)

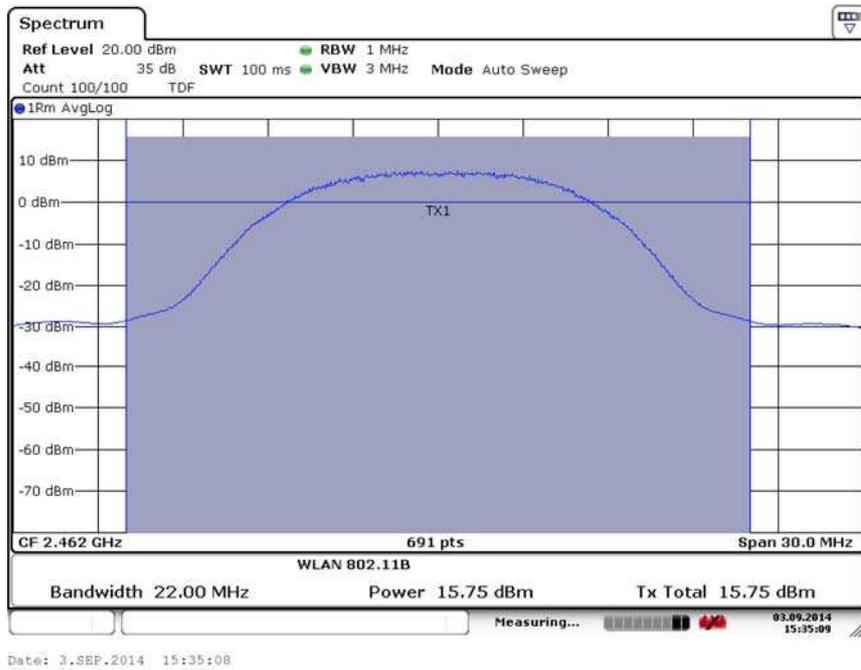
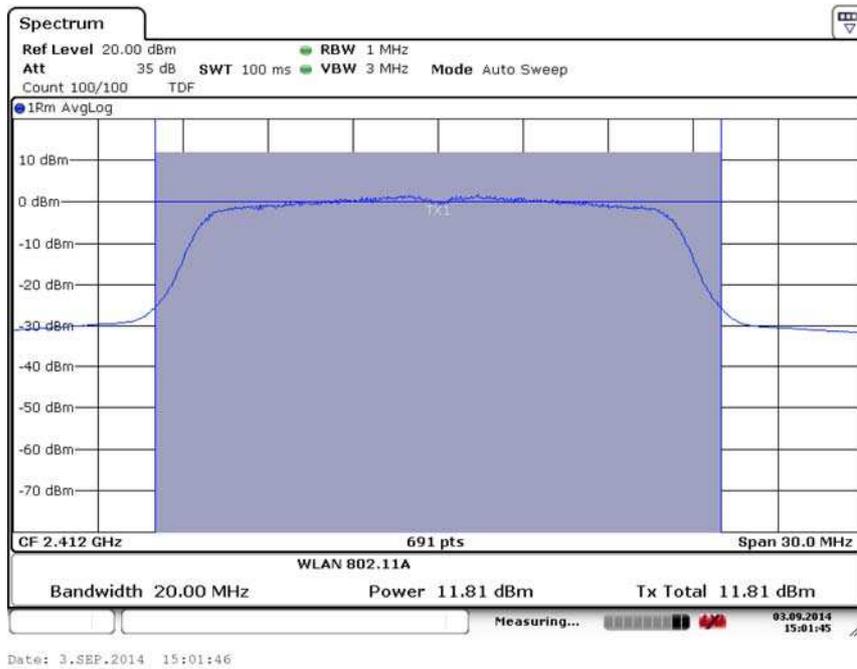
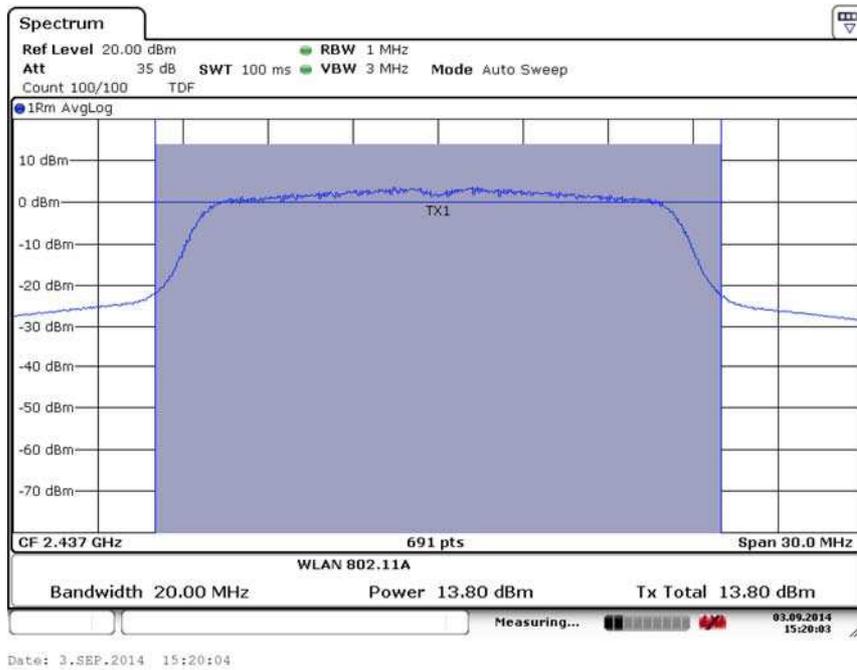


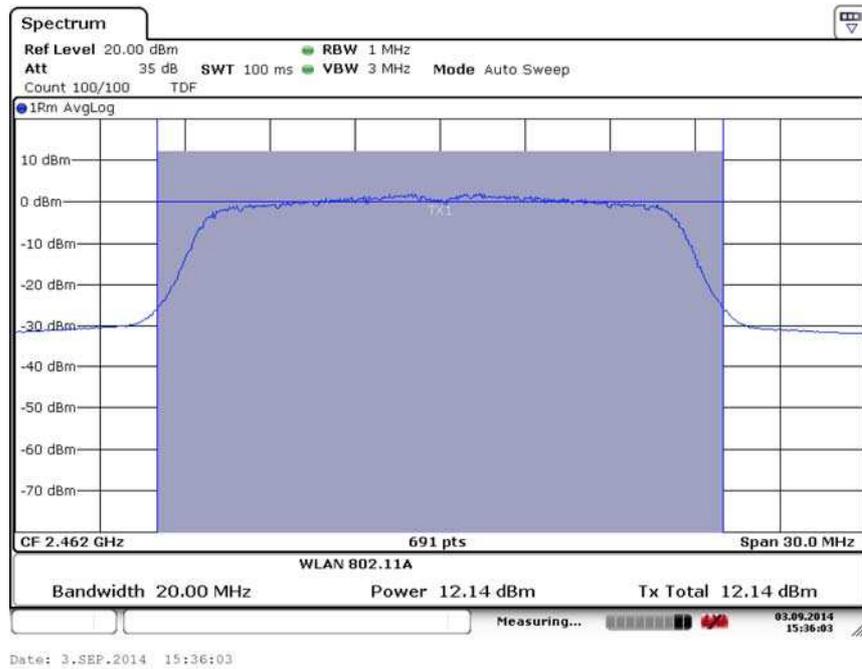
Fig. 12 Maximum Average Output Power (802.11b, Ch 11,11Mbps)



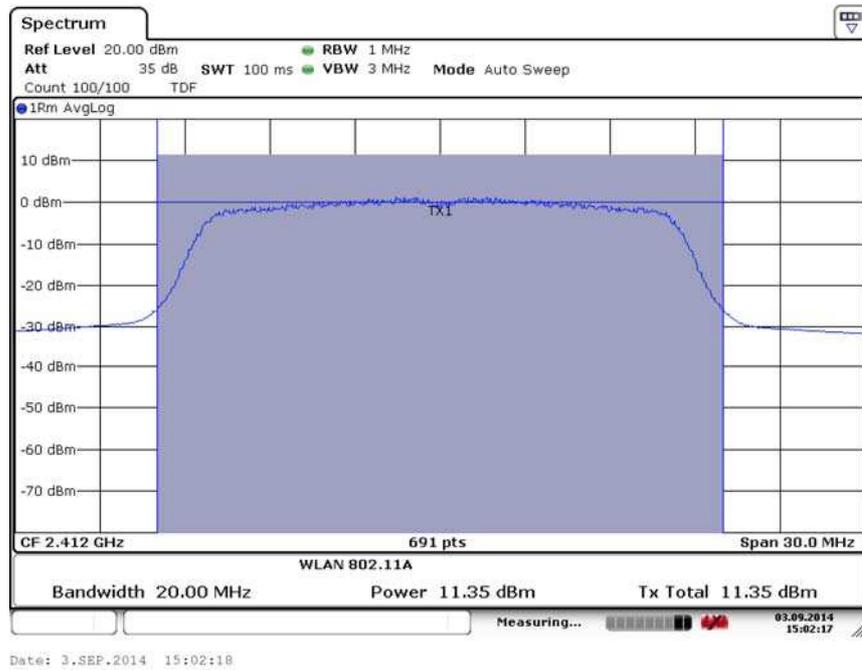
**Fig. 13 Maximum Average Output Power (802.11g, Ch 1,6Mbps)**



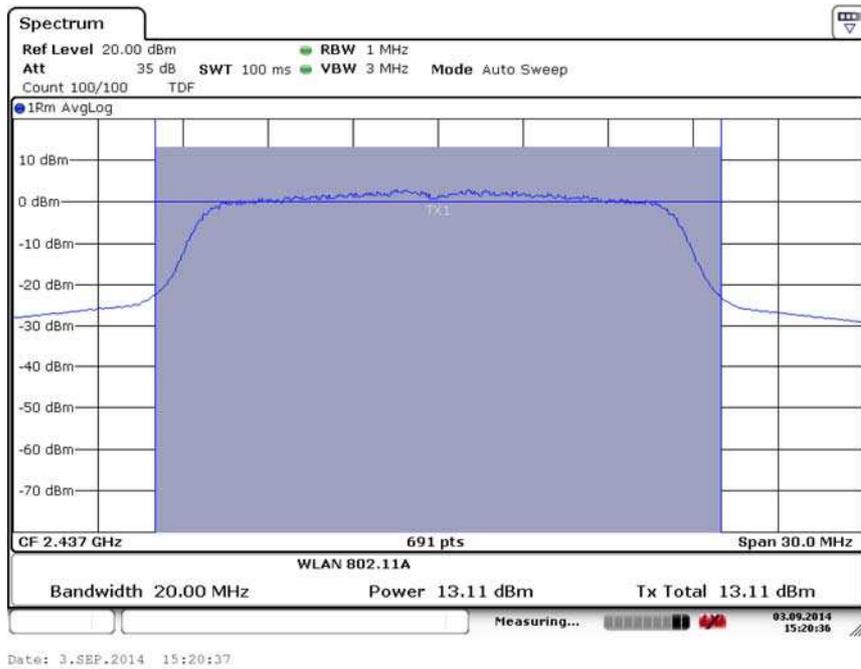
**Fig. 14 Maximum Average Output Power (802.11g, Ch 6,6Mbps)**



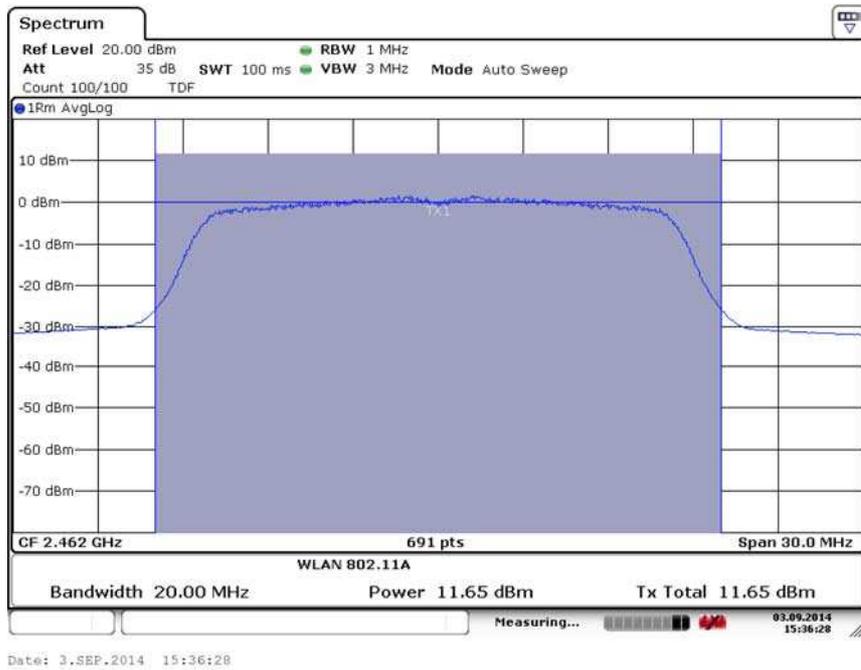
**Fig. 15 Maximum Average Output Power (802.11g, Ch 11,6Mbps)**



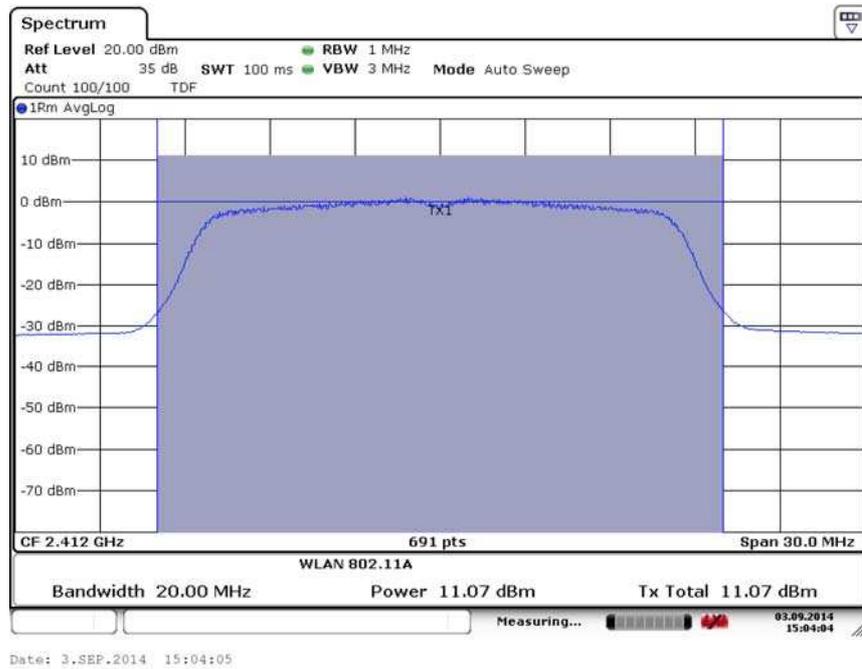
**Fig. 16 Maximum Average Output Power (802.11g, Ch 1,9Mbps)**



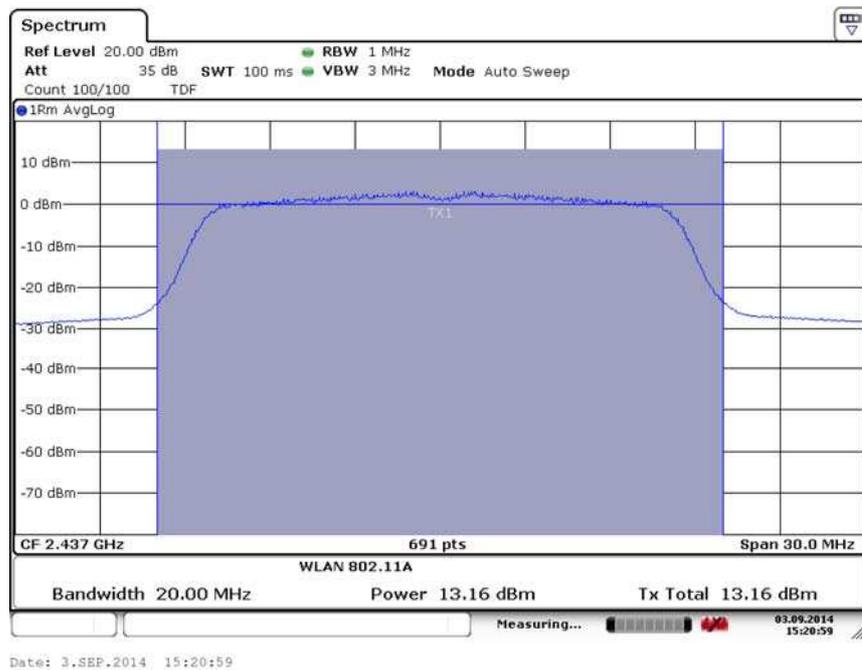
**Fig. 17 Maximum Average Output Power (802.11g, Ch 6,9Mbps)**



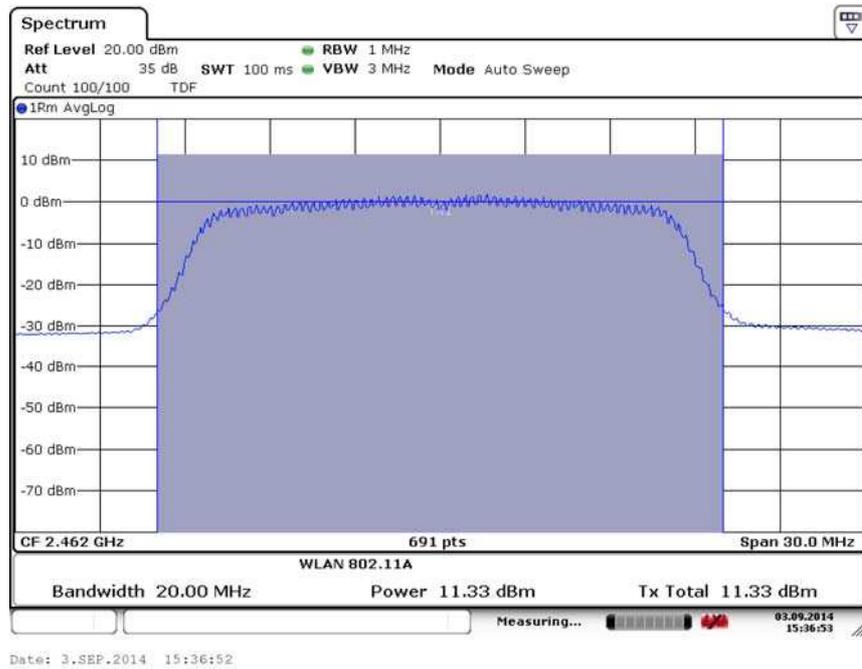
**Fig. 18 Maximum Average Output Power (802.11g, Ch 11,9Mbps)**



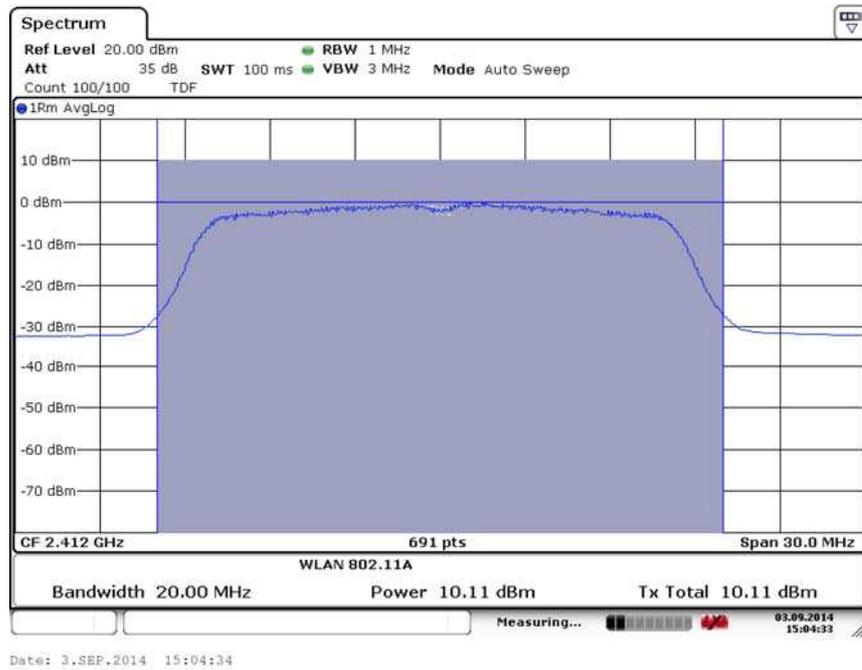
**Fig. 19 Maximum Average Output Power (802.11g, Ch 1,12Mbps)**



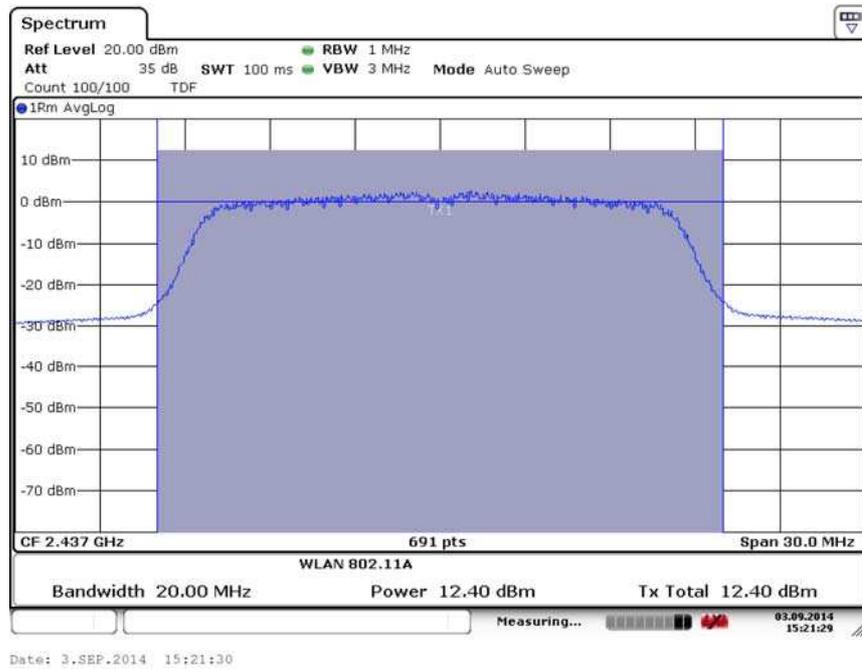
**Fig. 20 Maximum Average Output Power (802.11g, Ch 6,12Mbps)**



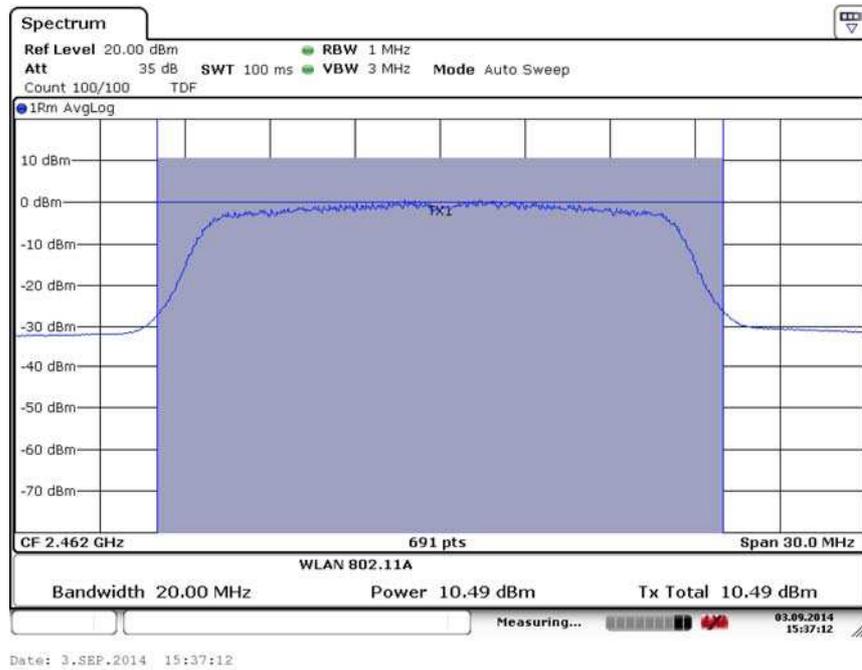
**Fig. 21 Maximum Average Output Power (802.11g, Ch 11,12Mbps)**



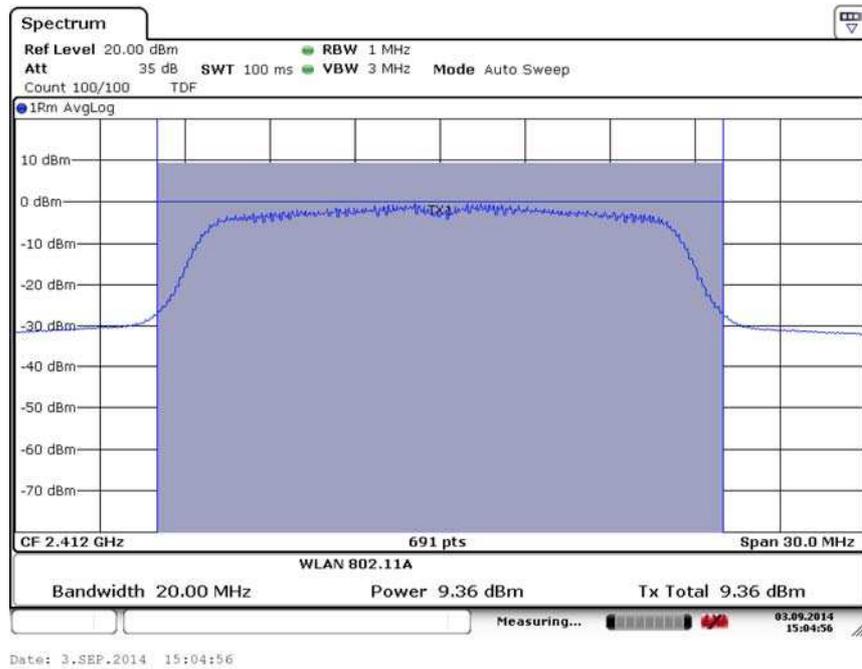
**Fig. 22 Maximum Average Output Power (802.11g, Ch 1,18Mbps)**



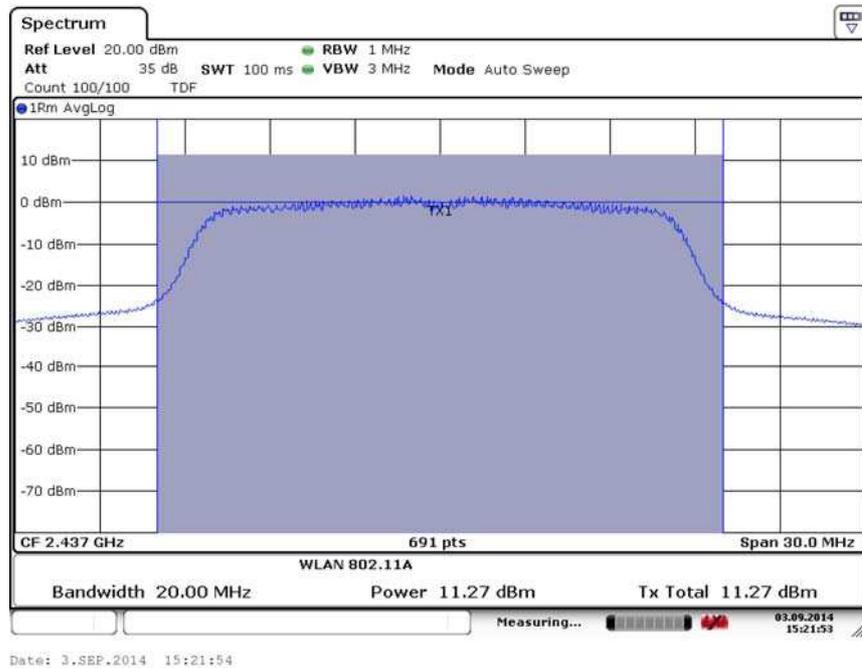
**Fig. 23 Maximum Average Output Power (802.11g, Ch 6,18Mbps)**



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



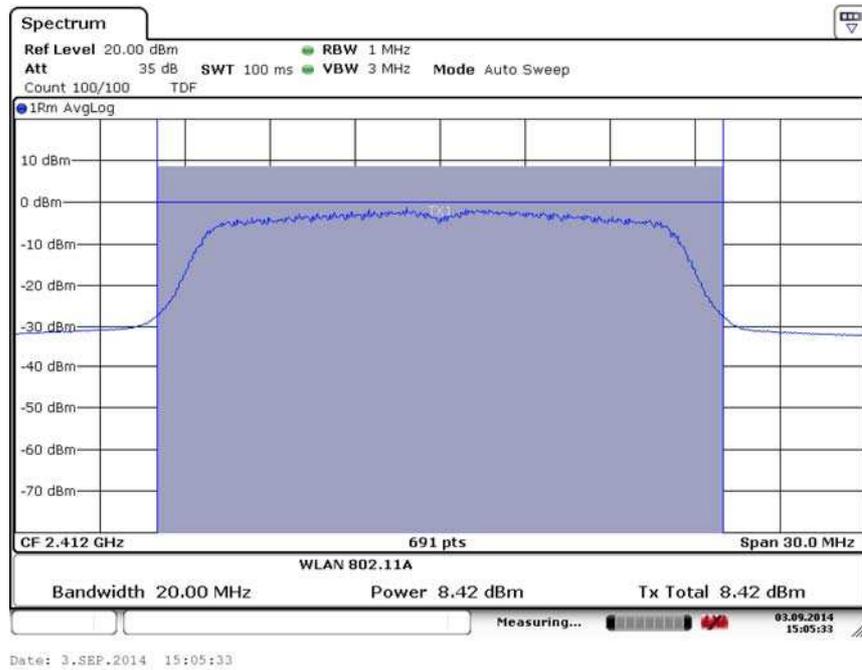
**Fig. 25 Maximum Average Output Power (802.11g, Ch 1,24Mbps)**



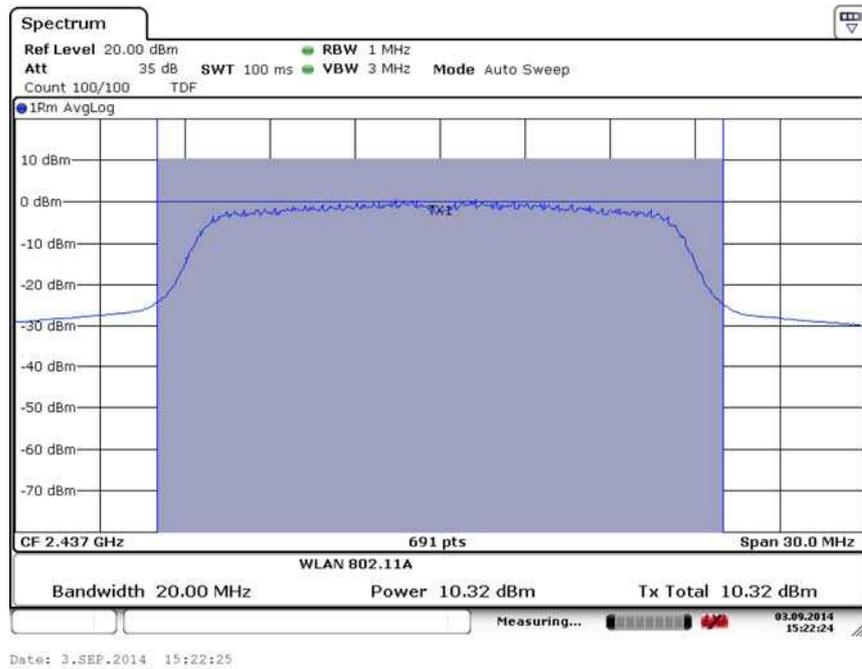
**Fig. 26 Maximum Average Output Power (802.11g, Ch 6,24Mbps)**



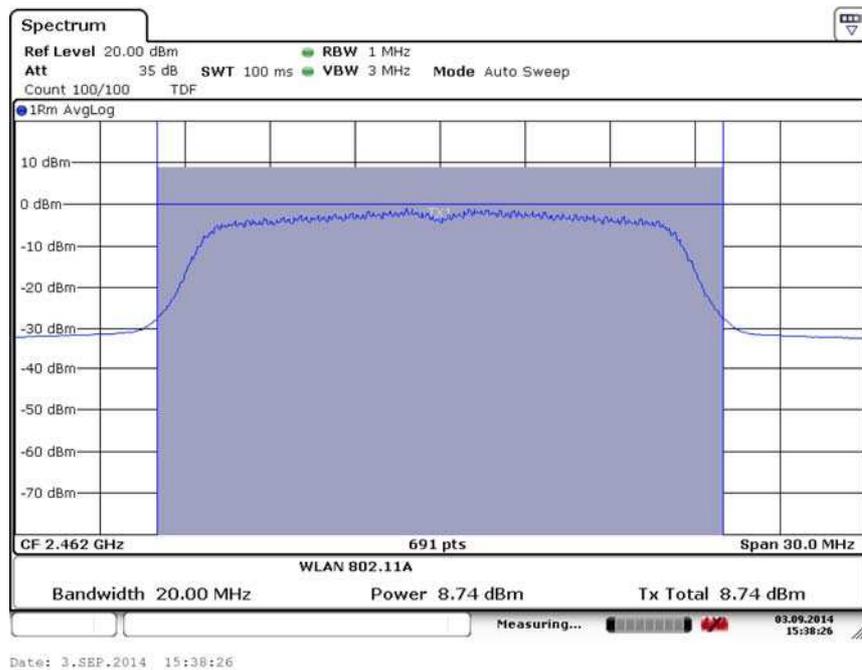
**Fig. 27 Maximum Average Output Power (802.11g, Ch 11,24Mbps)**



**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)**

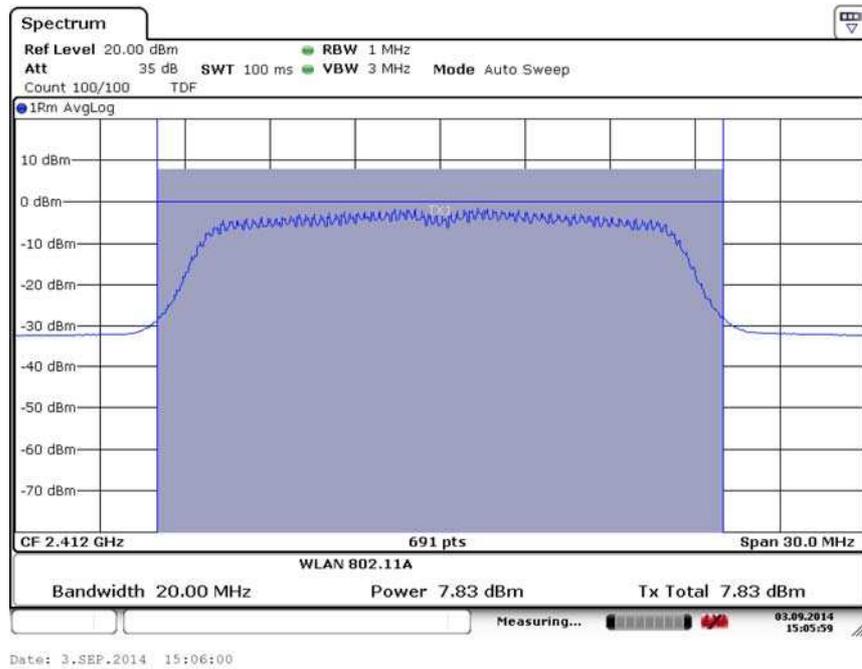


Fig. 31 Maximum Average Output Power (802.11g, Ch 1,48Mbps)

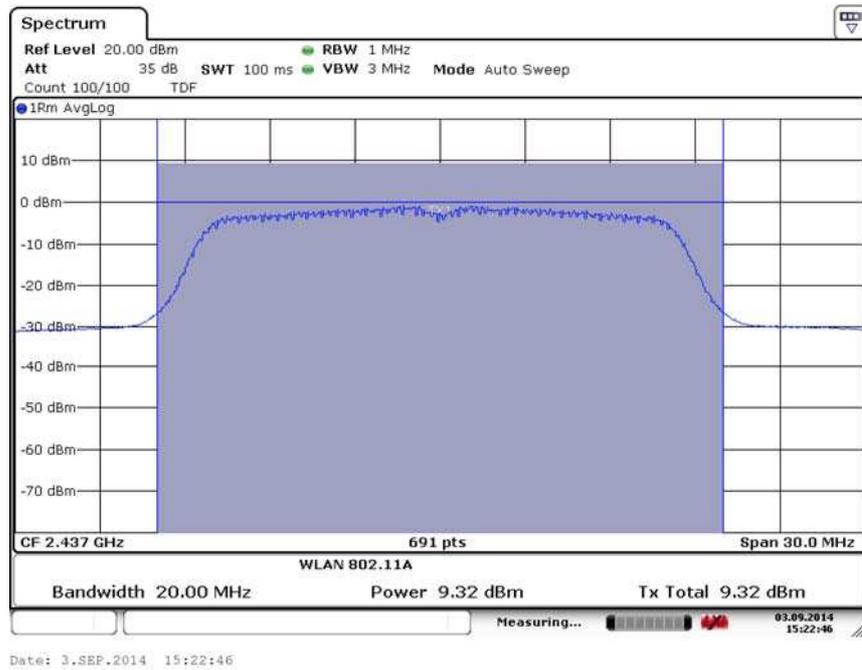
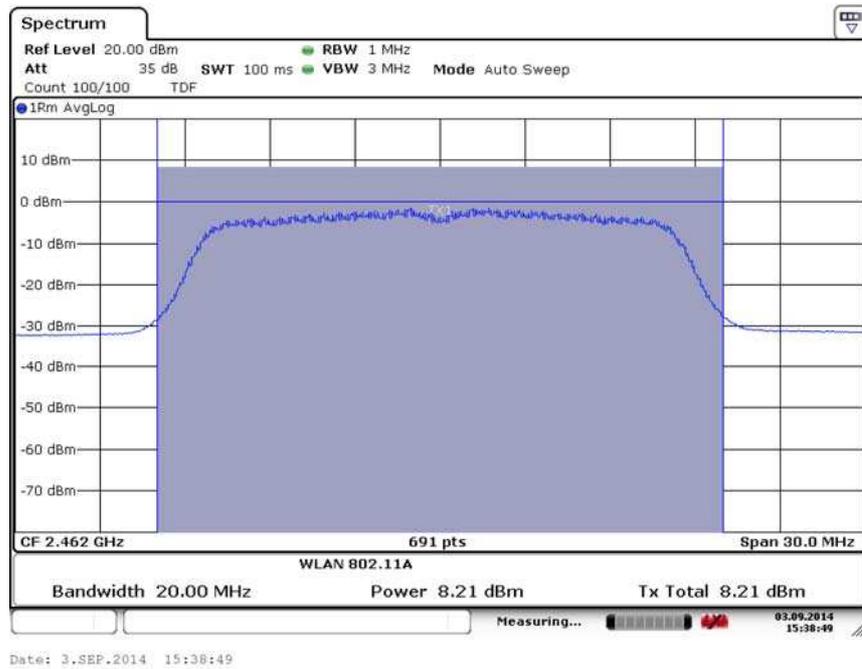
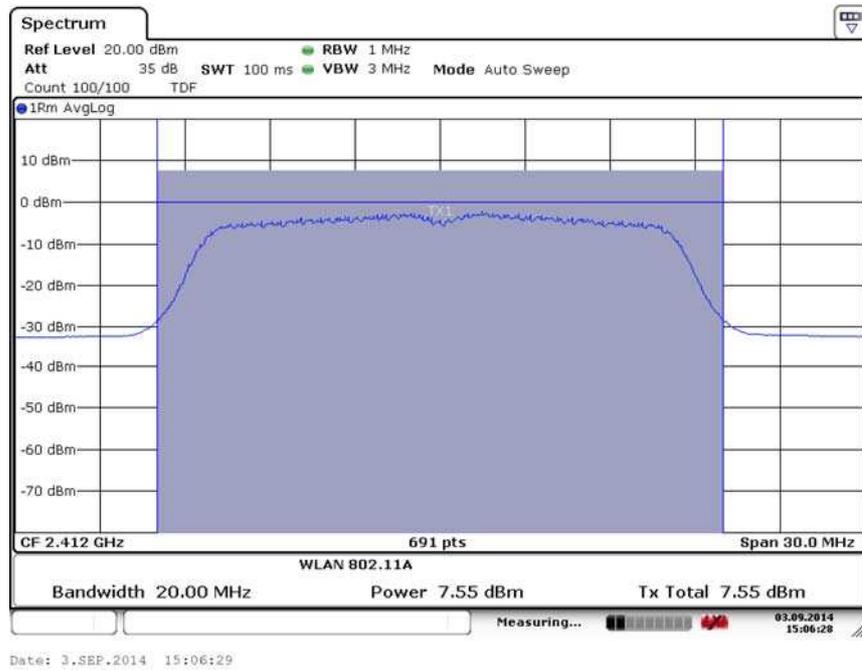


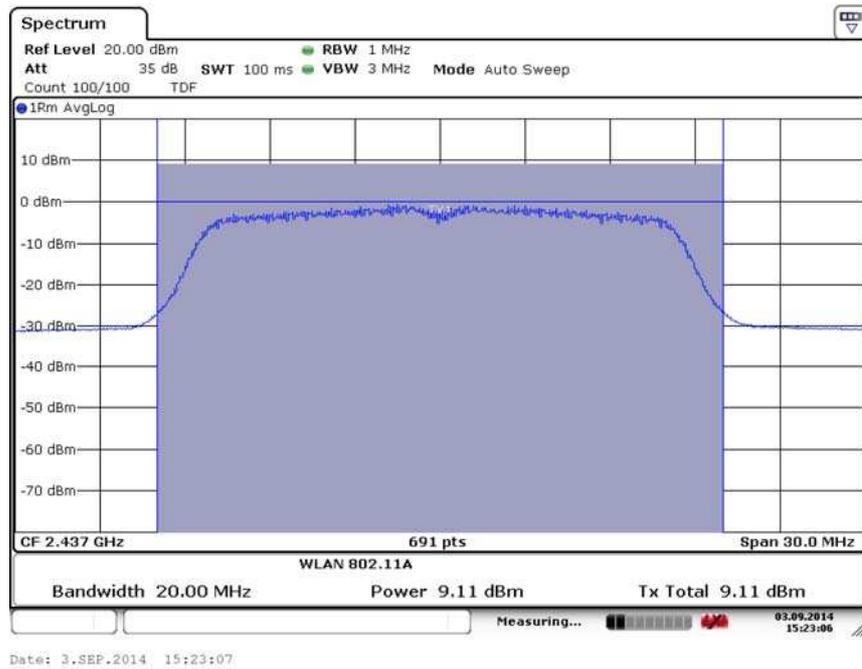
Fig. 32 Maximum Average Output Power (802.11g, Ch 6,48Mbps)



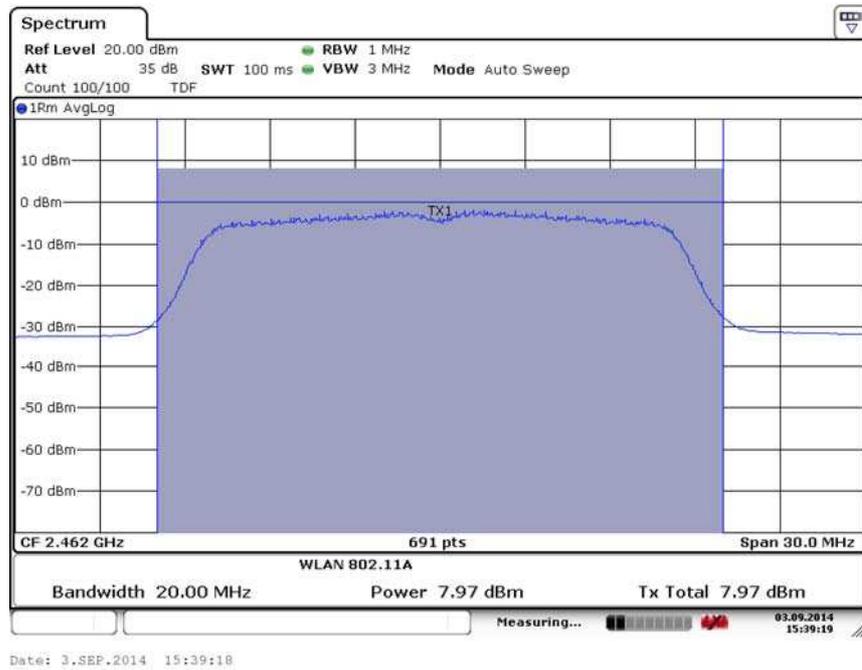
**Fig. 33 Maximum Average Output Power (802.11g, Ch 11,48Mbps)**



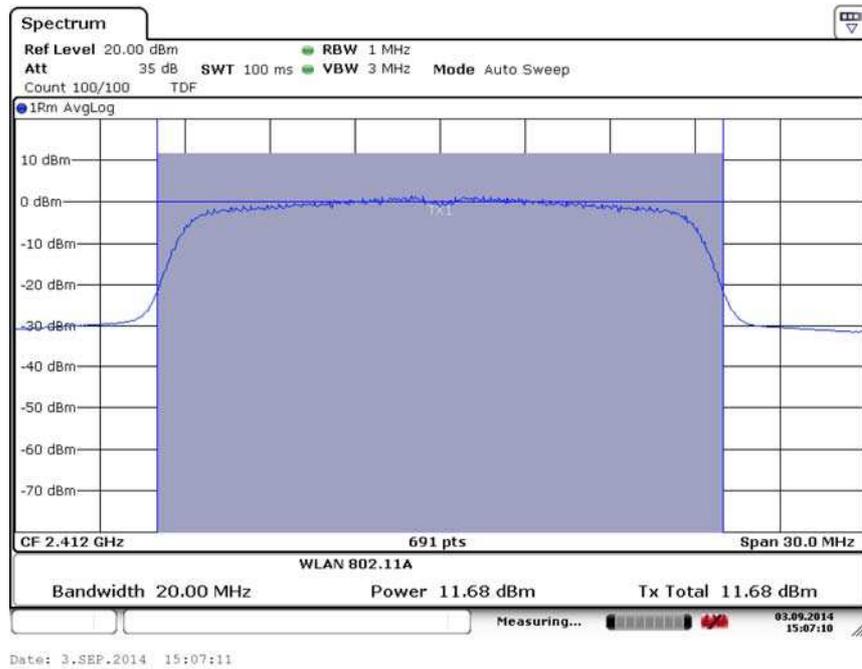
**Fig. 34 Maximum Average Output Power (802.11g, Ch 1,54Mbps)**



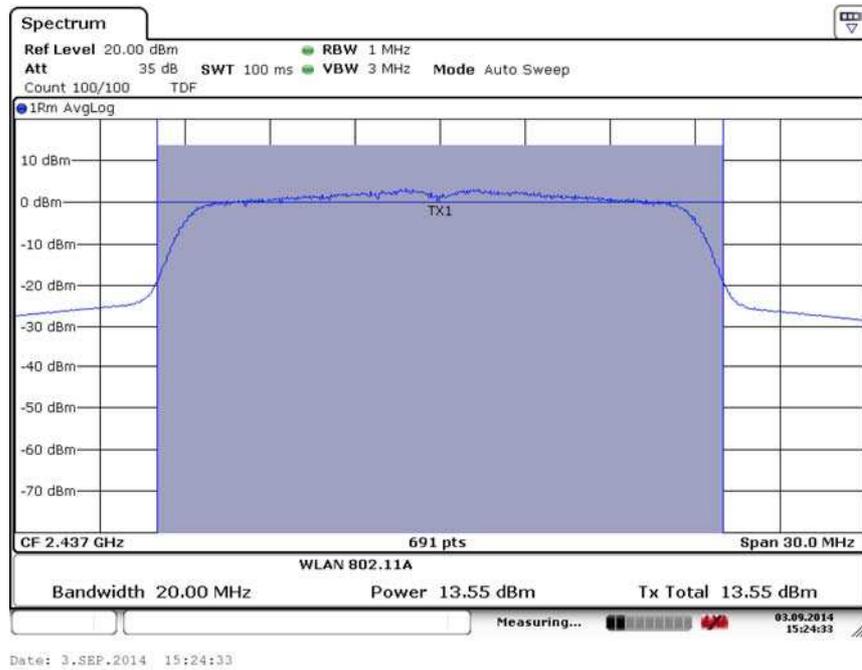
**Fig. 35 Maximum Average Output Power (802.11g, Ch 6,54Mbps)**



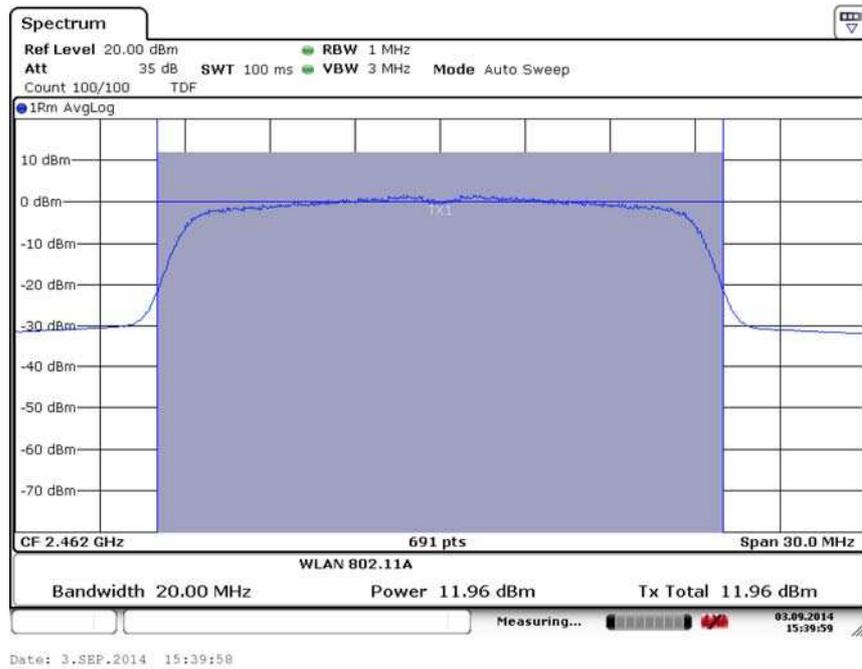
**Fig. 36 Maximum Average Output Power (802.11g, Ch 11,54Mbps)**



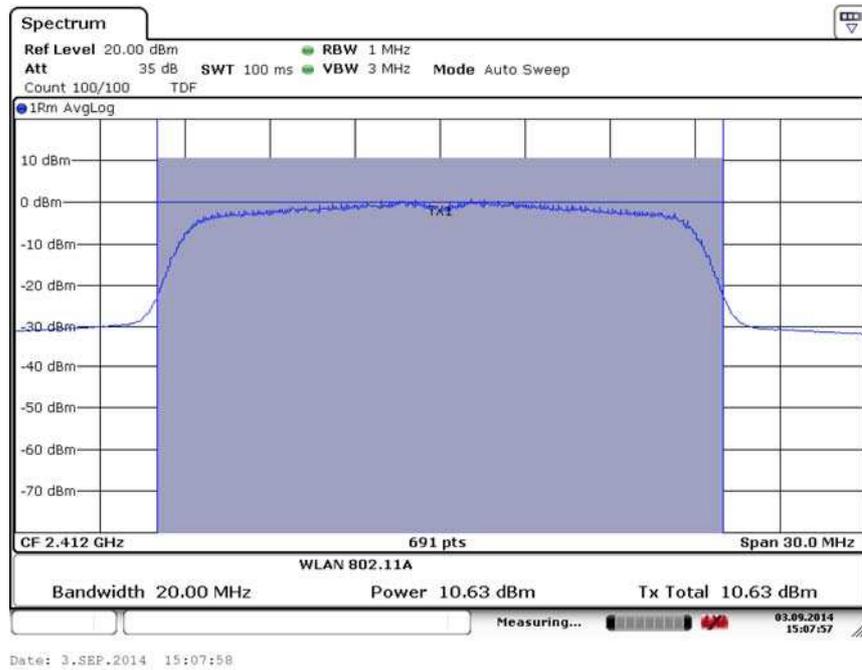
**Fig. 37 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS0)**



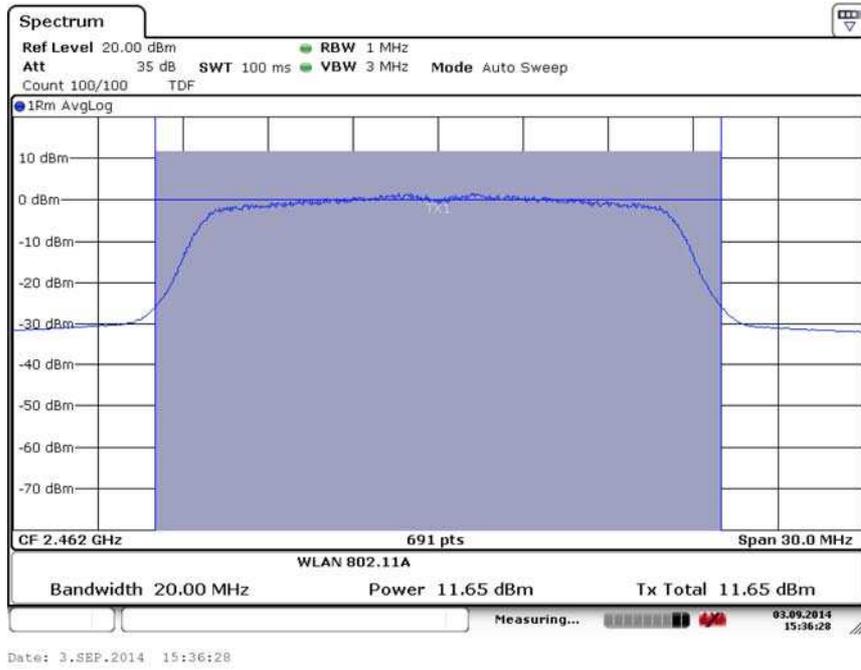
**Fig. 38 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS0)**



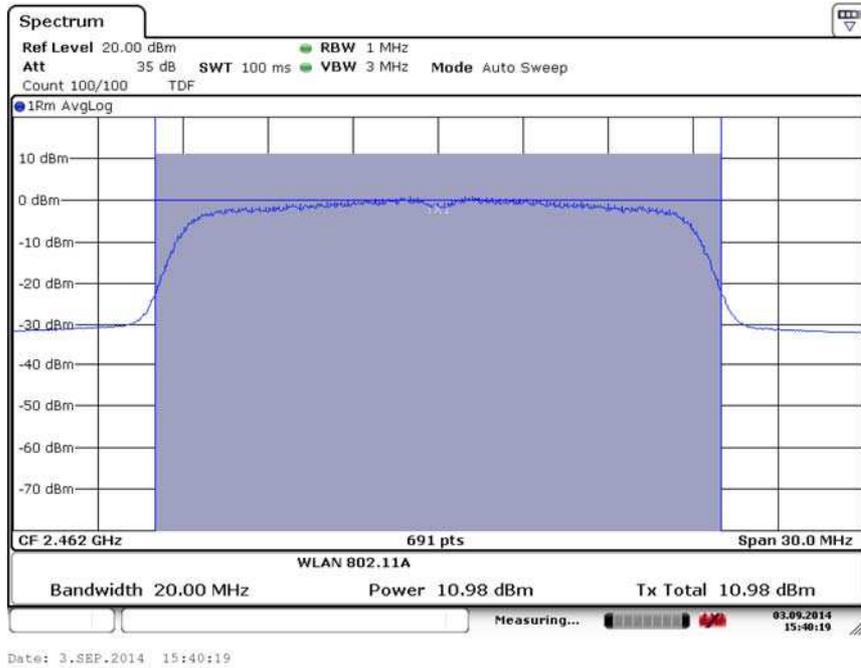
**Fig. 39 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS0)**



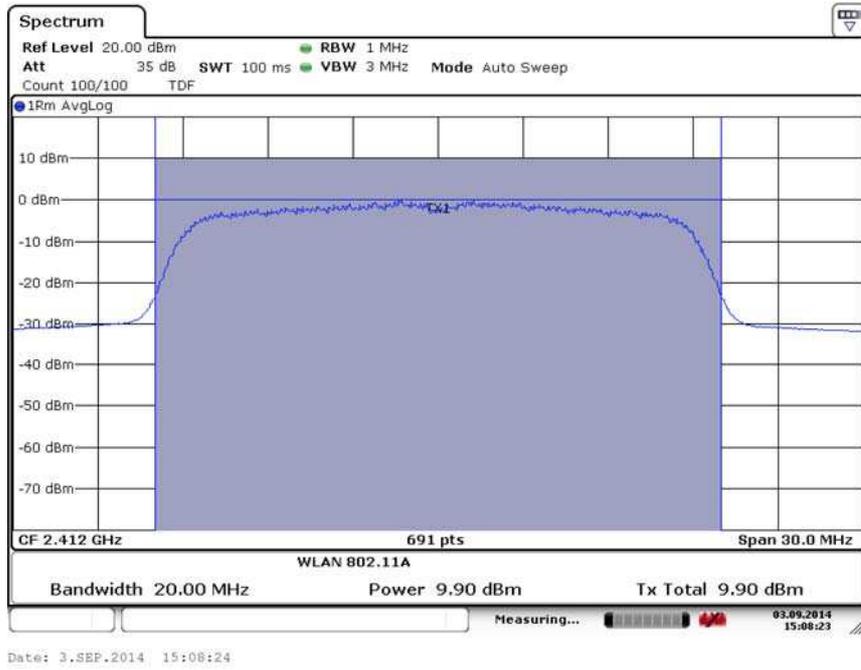
**Fig. 40 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS1)**



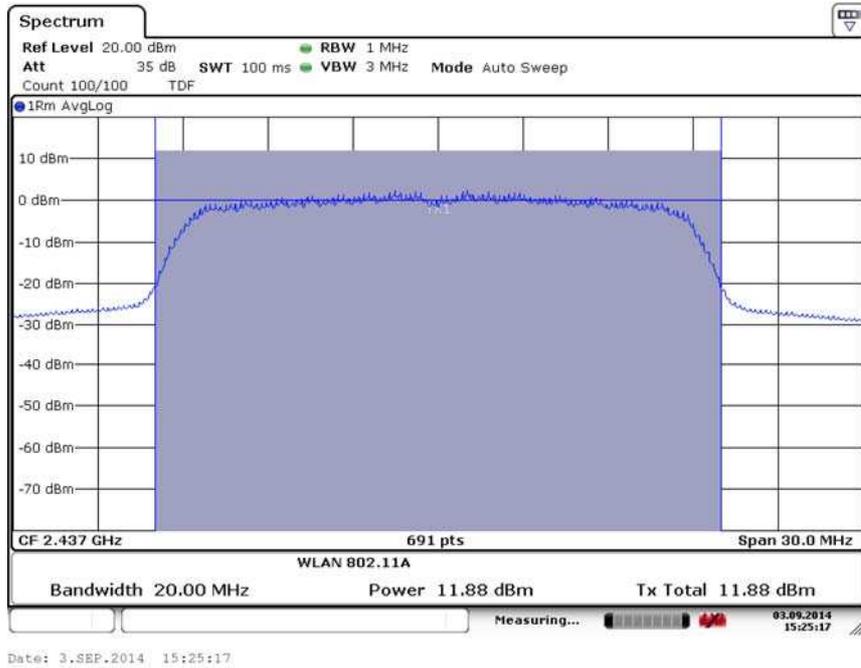
**Fig. 41 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS1)**



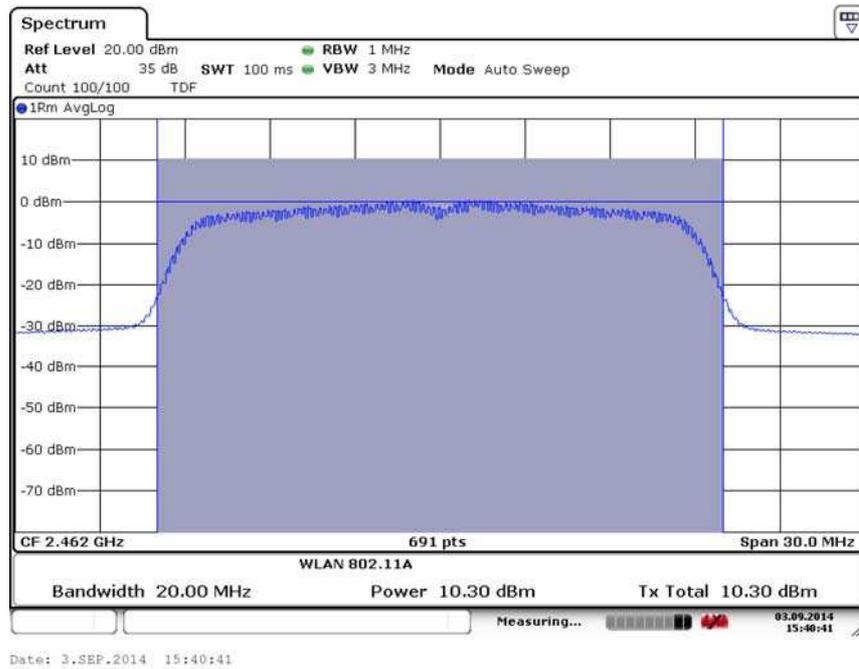
**Fig. 42 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS1)**



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



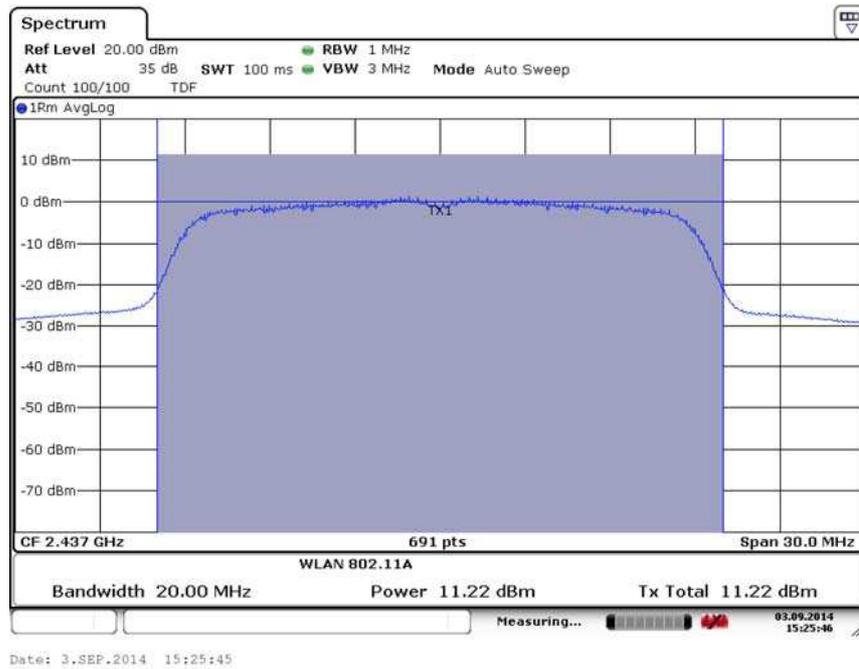
**Fig. 44 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS2))**



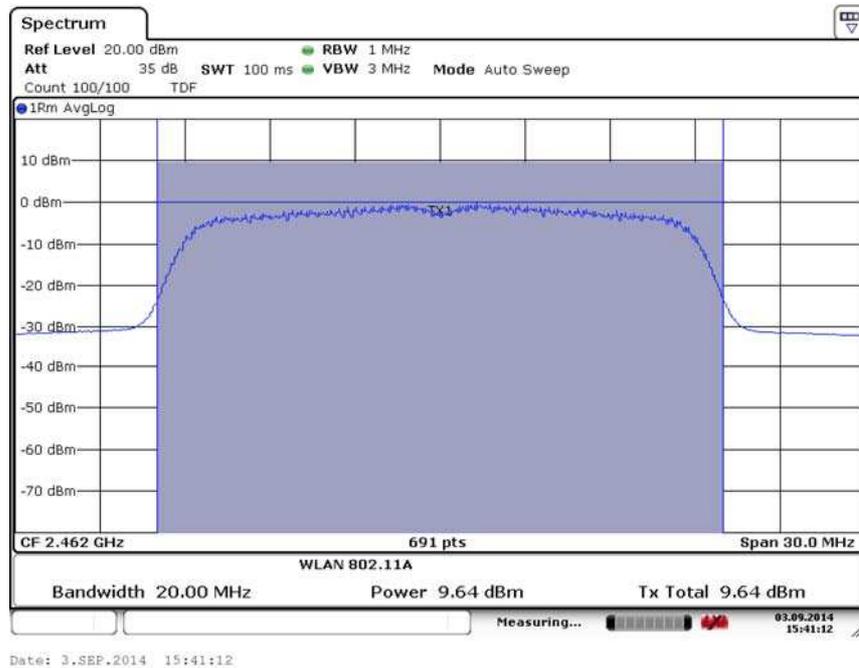
**Fig. 45 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS2)**



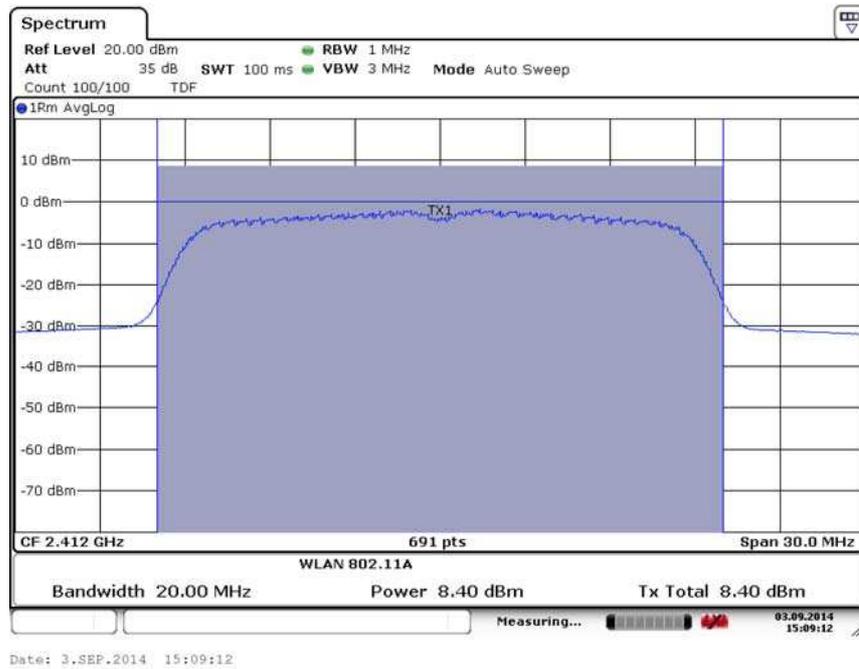
**Fig. 46 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS3)**



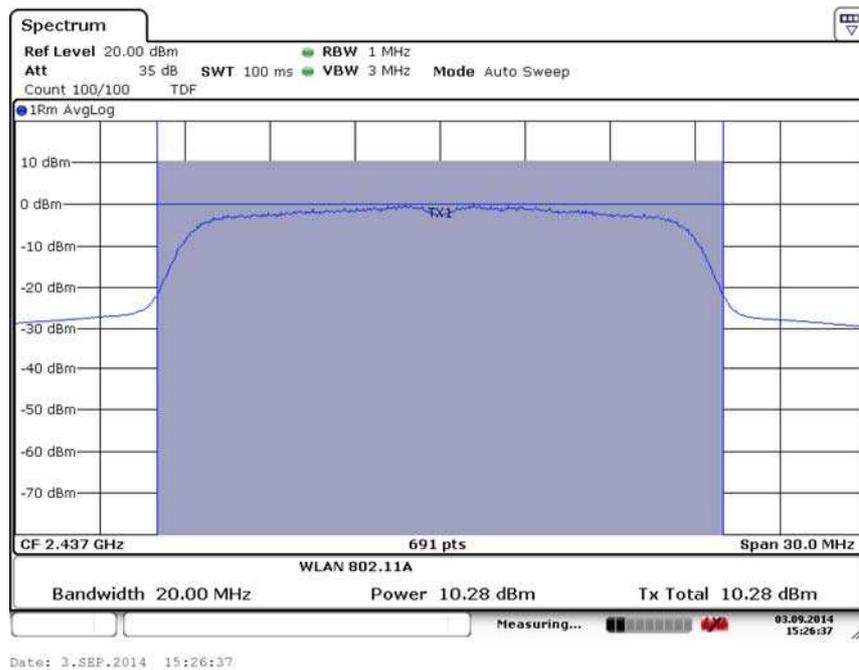
**Fig. 47 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS3)**



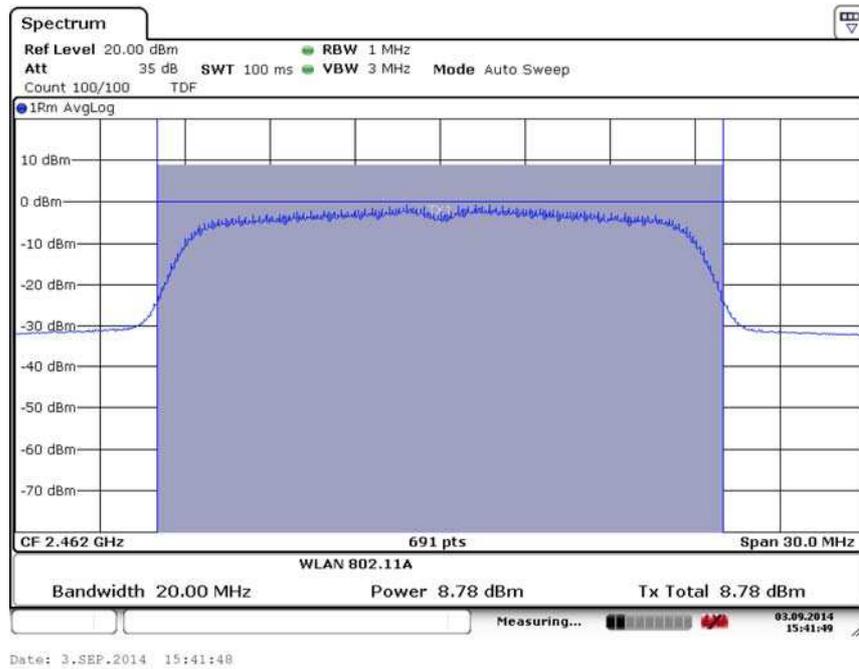
**Fig. 48 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS3)**



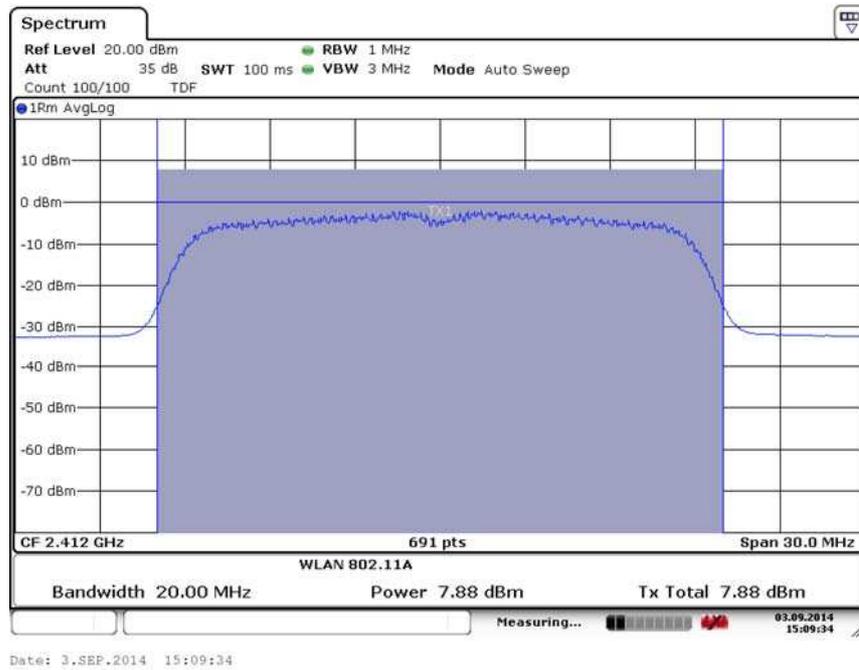
**Fig. 49 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS4)**



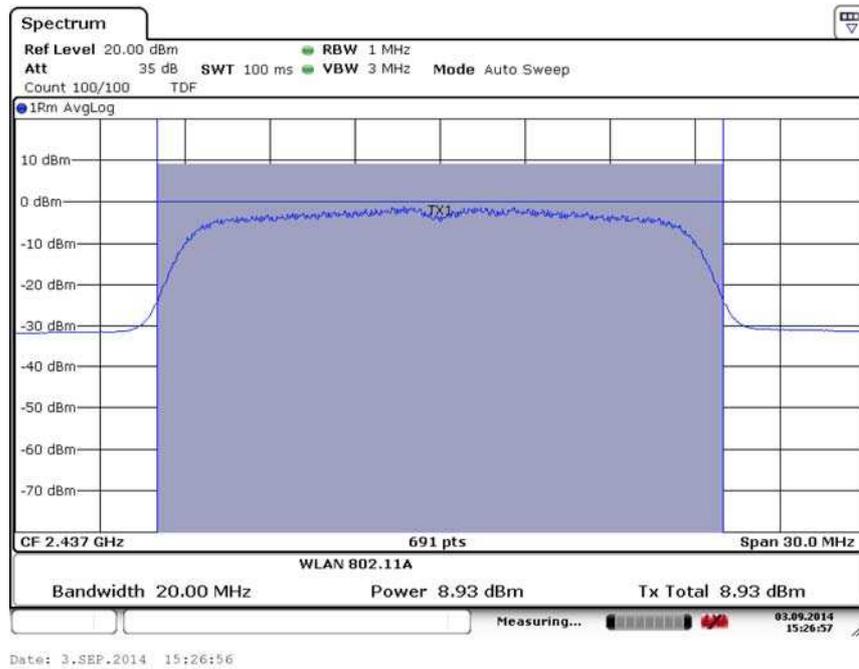
**Fig. 50 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS4)**



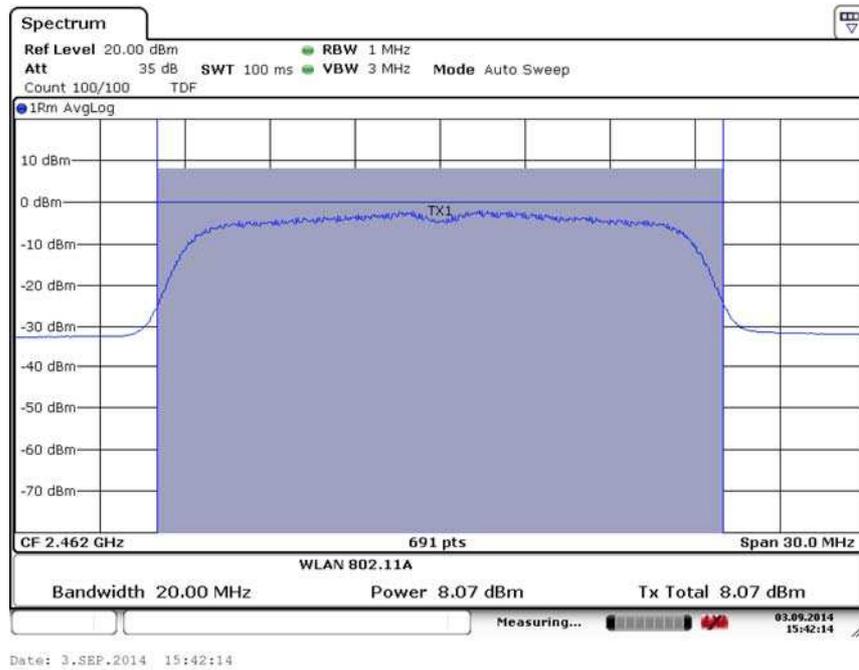
**Fig. 51 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS4)**



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



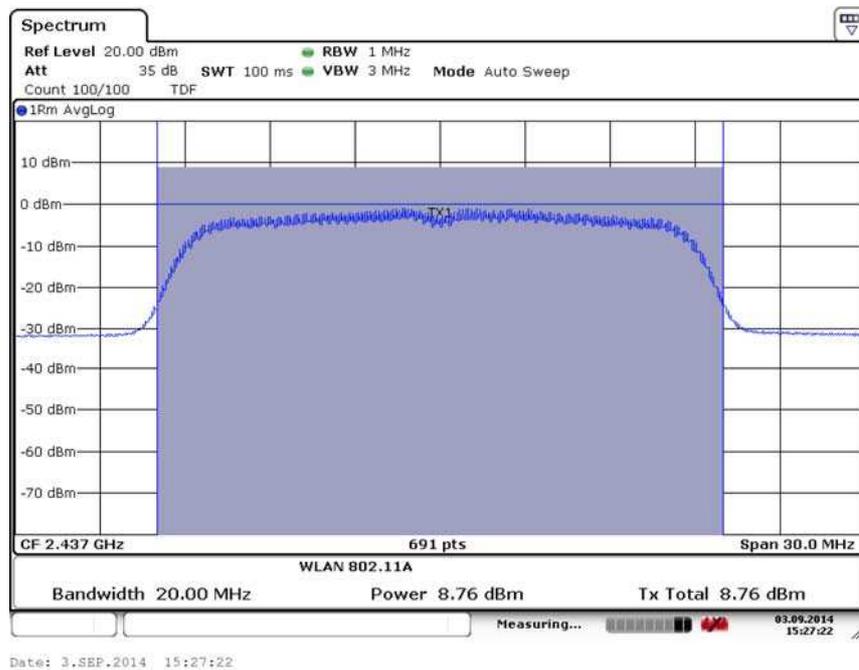
**Fig. 53 Maximum Average Output Power (802.11n-20MHz, Ch 6,MCS5)**



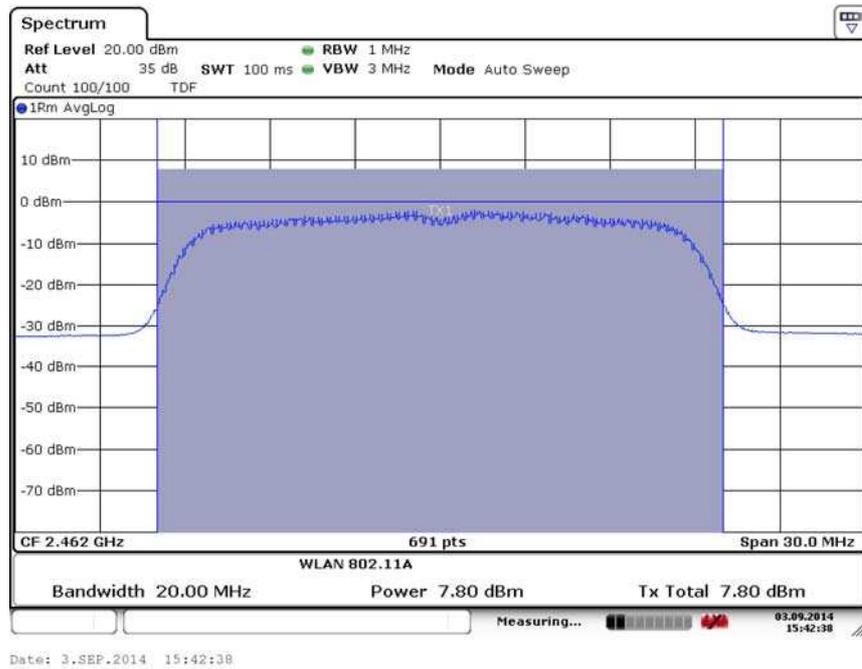
**Fig. 54 Maximum Average Output Power (802.11n-20MHz, Ch 11,MCS5)**



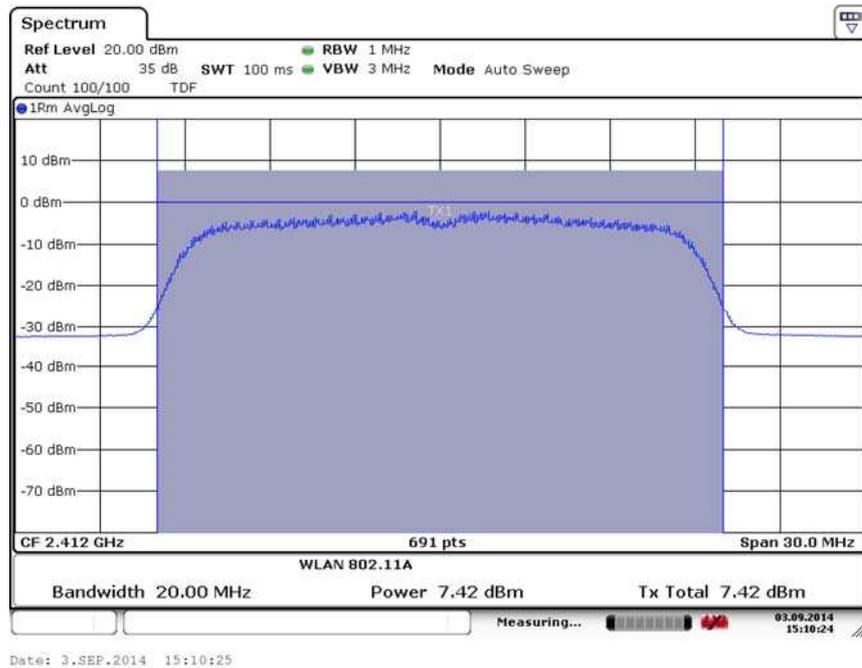
**Fig. 55 Maximum Average Output Power (802.11n-20MHz, Ch 1,MCS6)**



**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)**