9. POWER SPECTRAL DENSITY

9.1 LIMITS

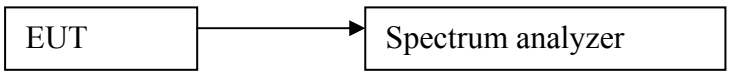
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. Because the EUT antenna gain is 11dBi, it is greater than 6dBi. Follow 15.247(i) "Systems operating in the 2400– 2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. So the power spectral density limit is 6.33dBm

9.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 DTS Measurement Guidance v03r01.

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set the analyzer span to 1.5 times the DTS bandwidth. Set the RBW = 3 kHz. Set the VBW ≥3 RBW. Detector = peak. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW (use of a greater number of measurement points than this minimum requirement is recommended).
4. Repeat above procedures until all frequencies measured were complete.

9.3 TEST SETUP



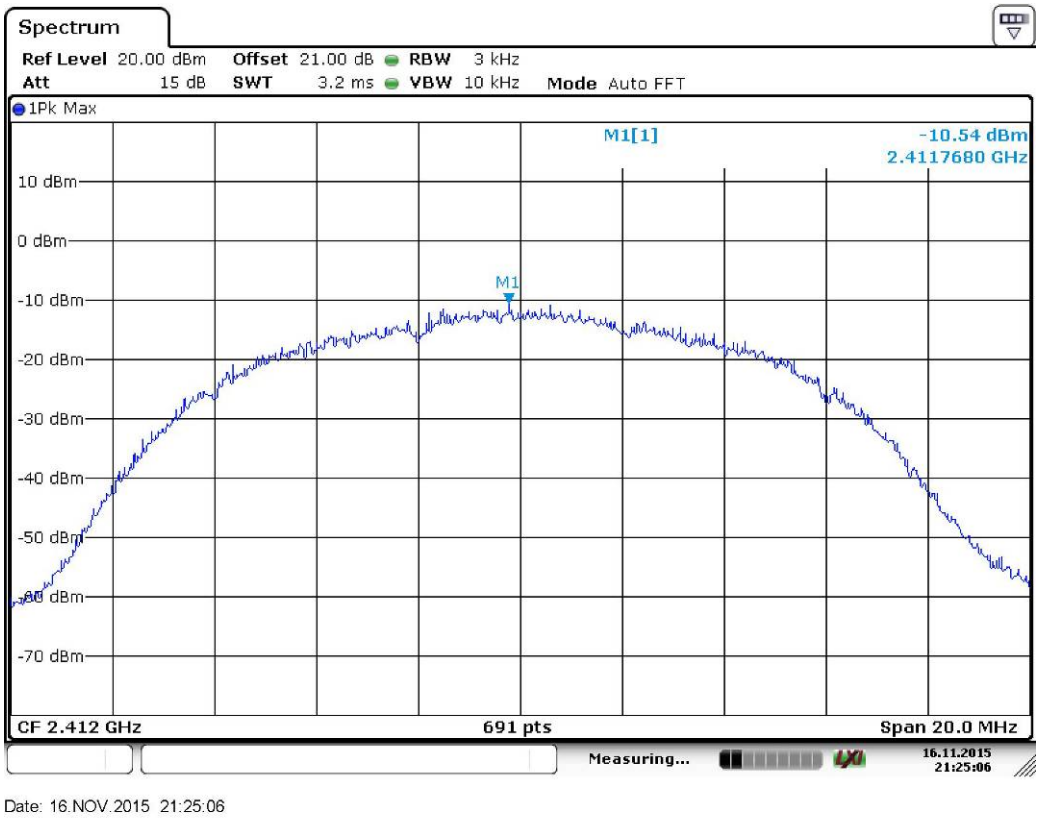
9.4 TEST RESULTS

802.11b mode:

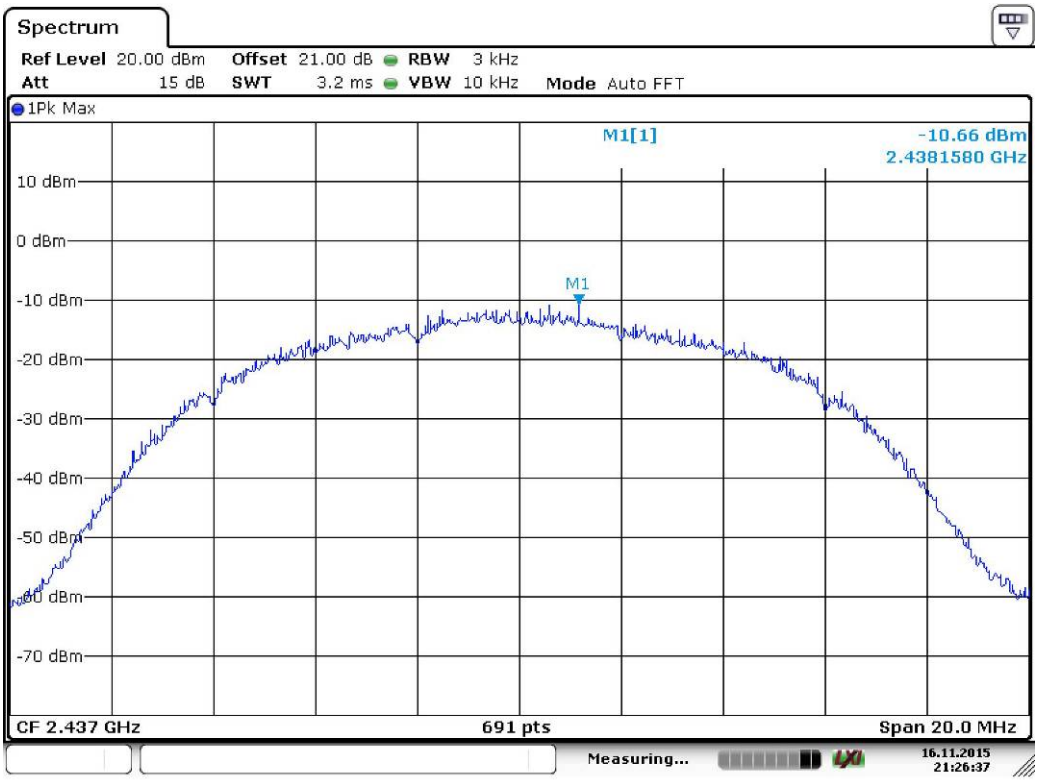
Channel No.	Frequency (MHz)	Mode	Data Rate	PSD (dBm/3KHz)	Limit	Result
1	2412	802.11b	11Mbps	-10.54	8dBm/3KHz	Pass
6	2437			-10.66		Pass
11	2462			-10.40		Pass

802.11b mode:

Channel 2412MHz

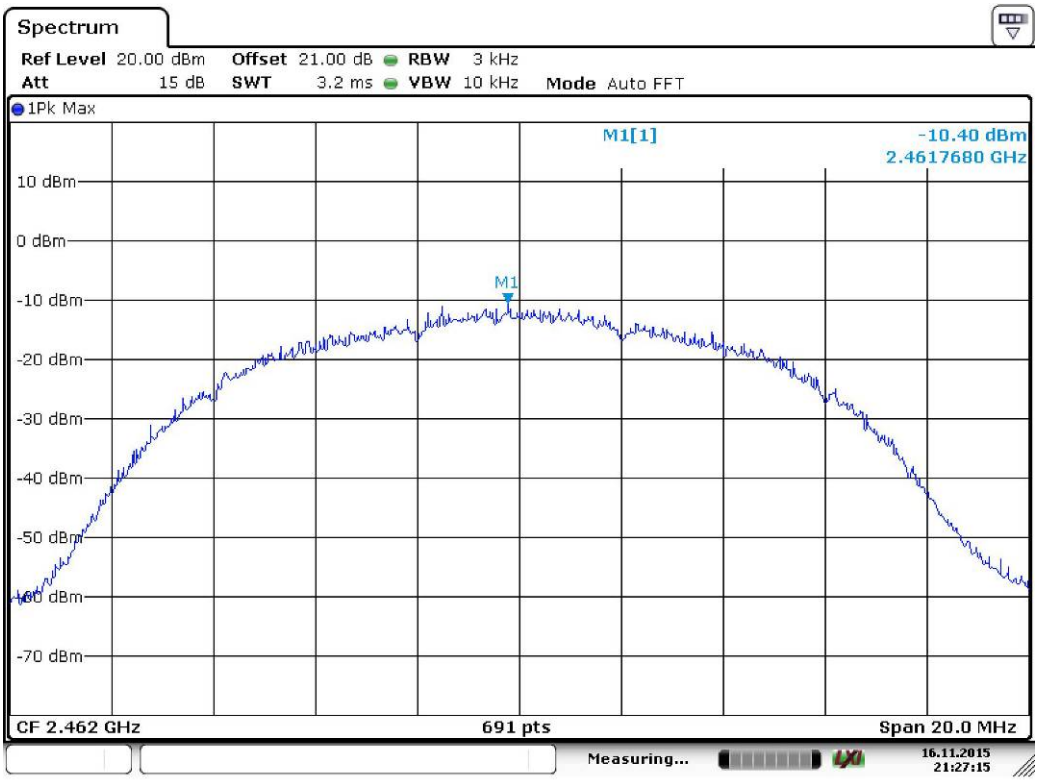


Channel 2437MHz



Date: 16.NOV.2015 21:26:38

Channel 2462MHz



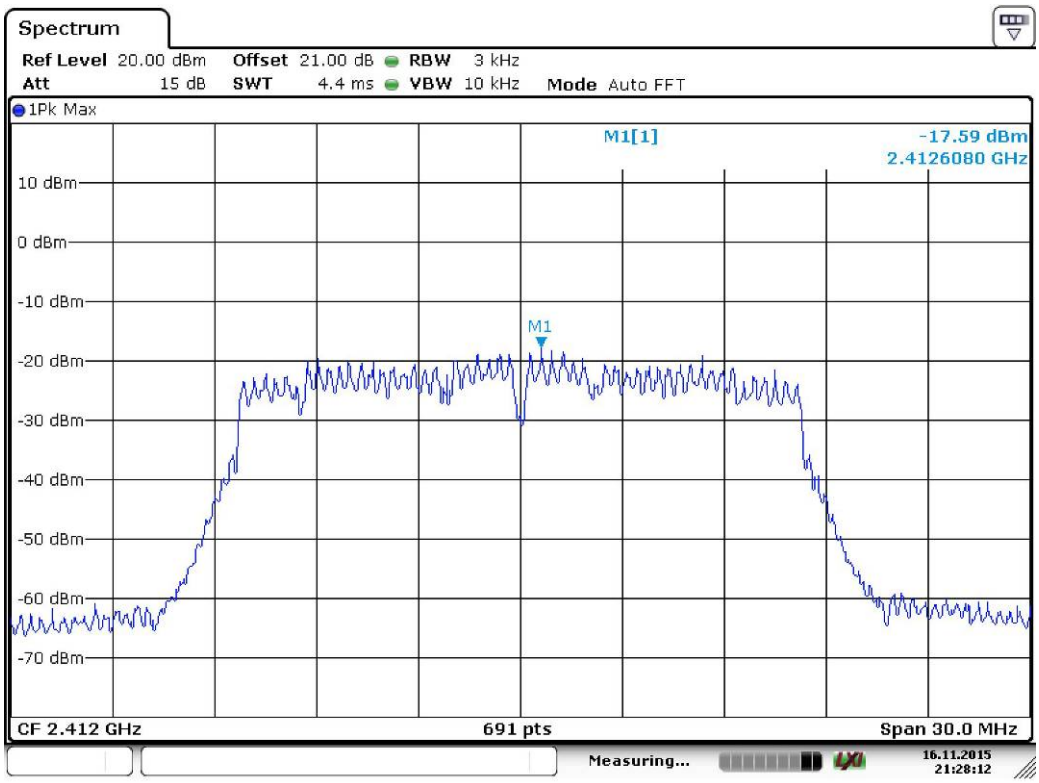
Date: 16.NOV.2015 21:27:15

802.11g mode:

Channel No.	Frequency (MHz)	Mode	Data Rate	PSD (dBm/3KHz)	Limit	Result
1	2412	802.11g	54Mbps	-17.59	8dBm/3KHz	Pass
6	2437			-17.57		Pass
11	2462			-17.51		Pass

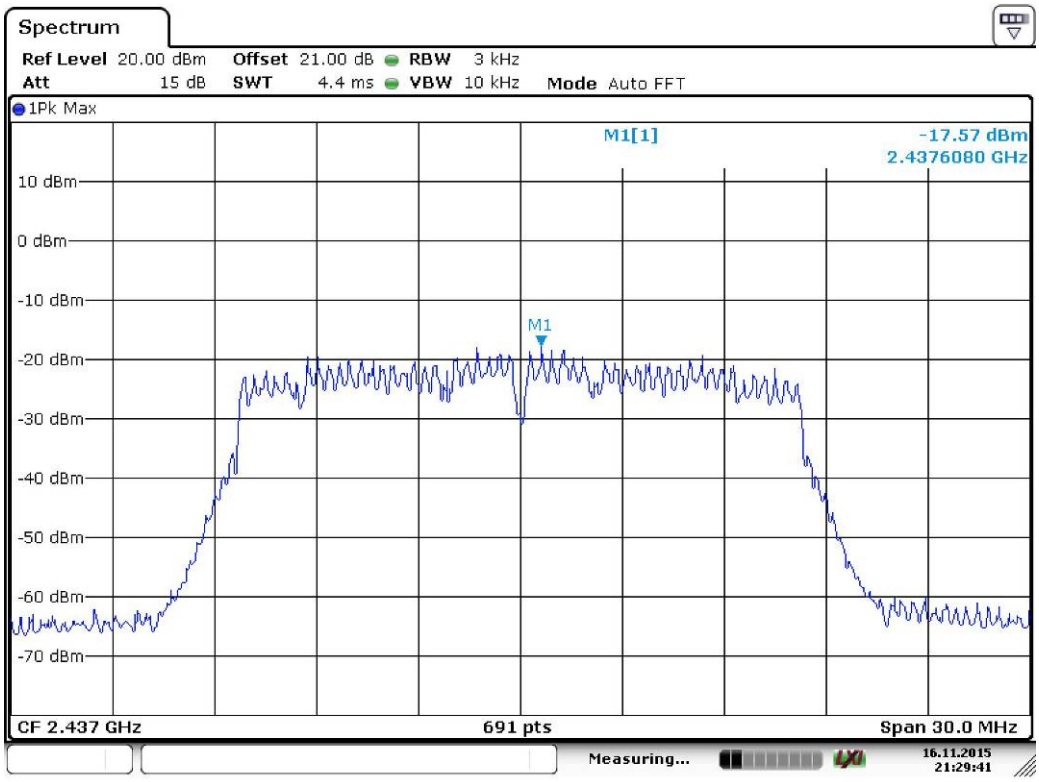
802.11g mode:

Channel 2412MHz



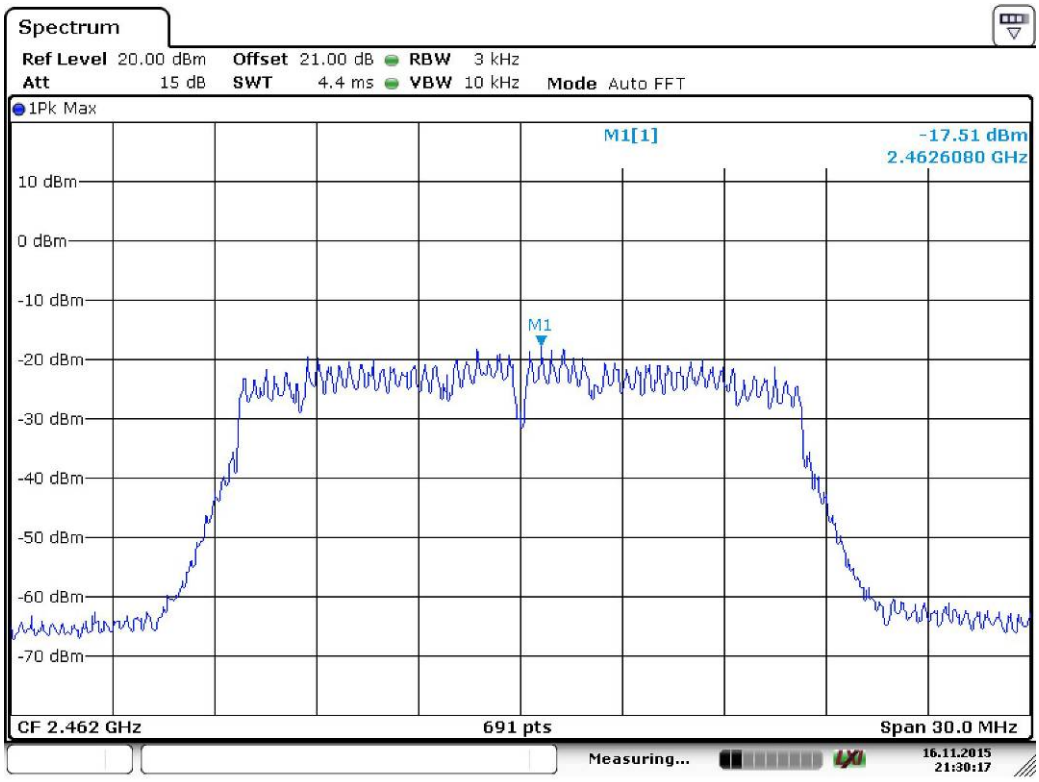
Date: 16.NOV.2015 21:28:12

Channel 2437MHz



Date: 16.NOV.2015 21:29:41

Channel 2462MHz



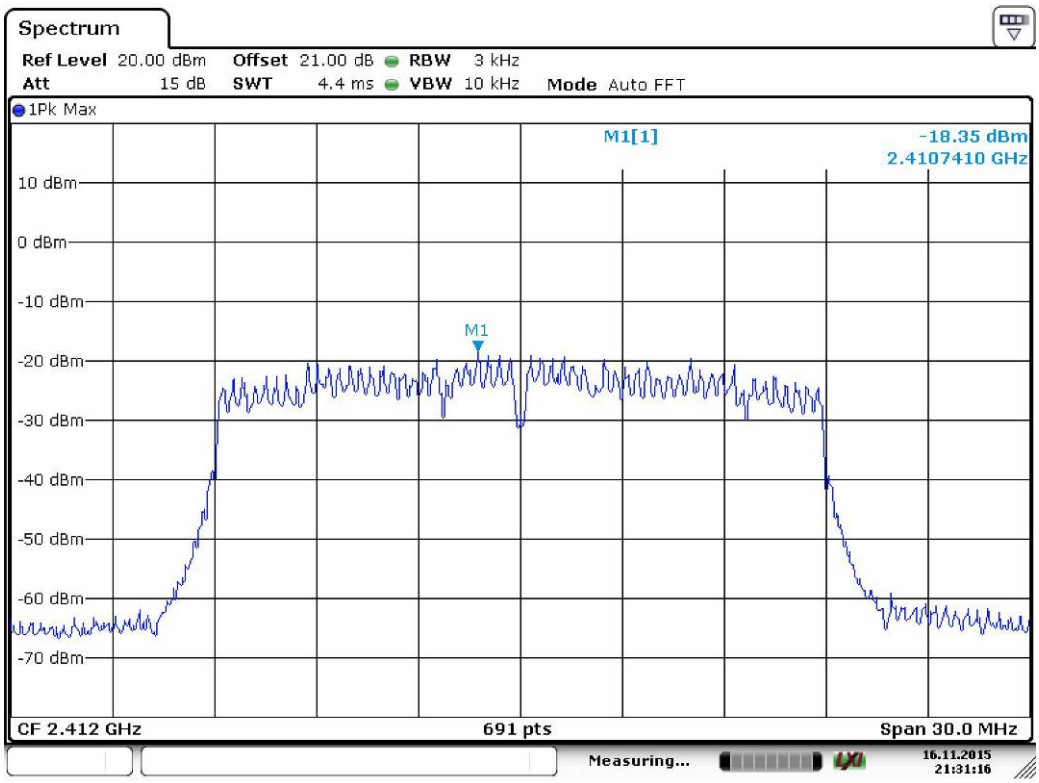
Date: 16.NOV.2015 21:30:18

802.11n20 mode:

Channel No.	Frequency (MHz)	Mode	Data Rate	PSD (dBm/3KHz)	Limit	Result
1	2412	802.11n20	MCS7	-18.35	8dBm/3KHz	Pass
6	2437			-18.98		Pass
11	2462			-18.26		Pass

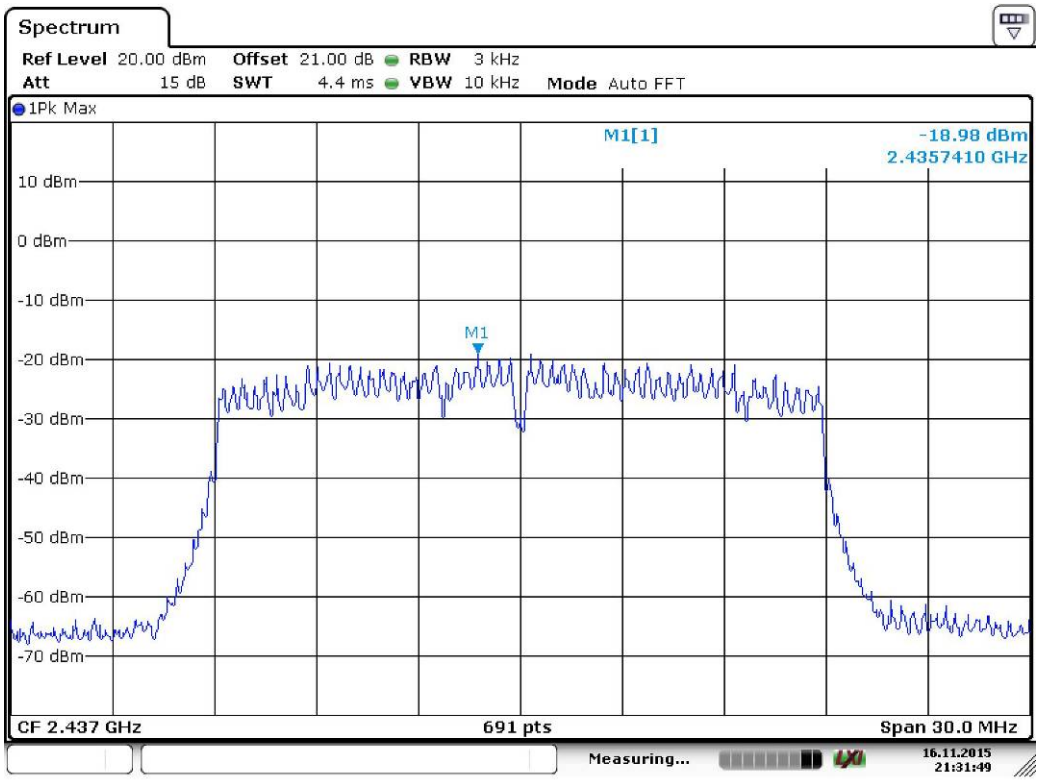
802.11n20 mode:

Channel 2412MHz



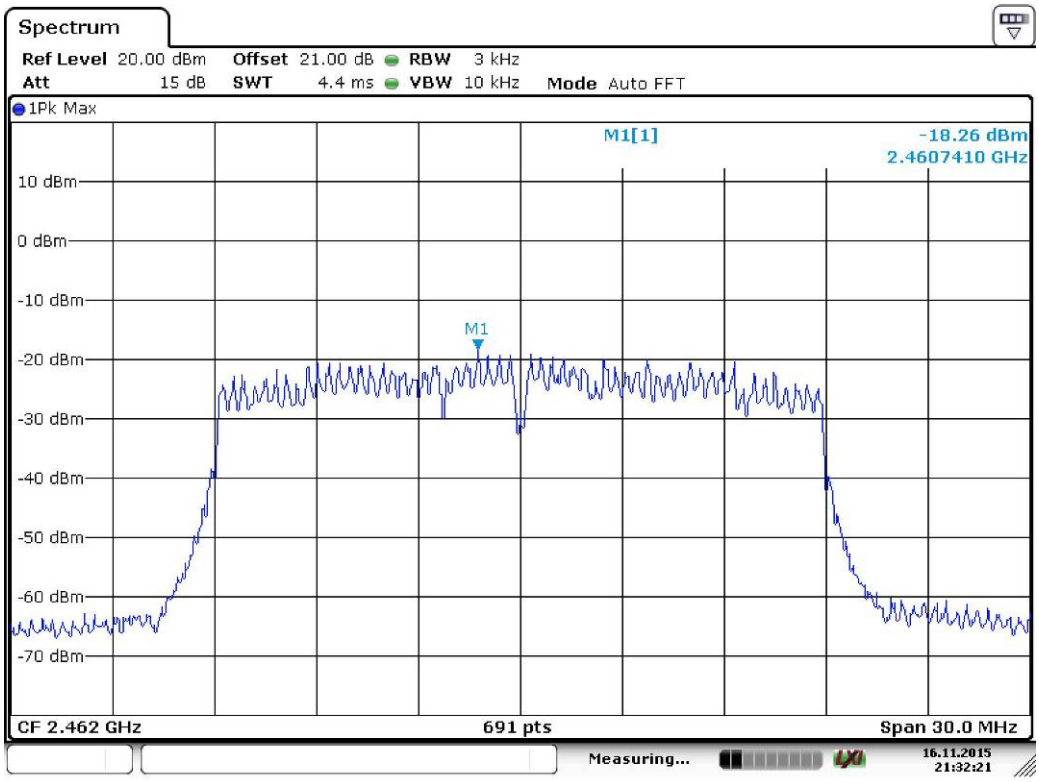
Date: 16.NOV.2015 21:31:17

Channel 2437MHz



Date: 16.NOV.2015 21:31:49

Channel 2462MHz

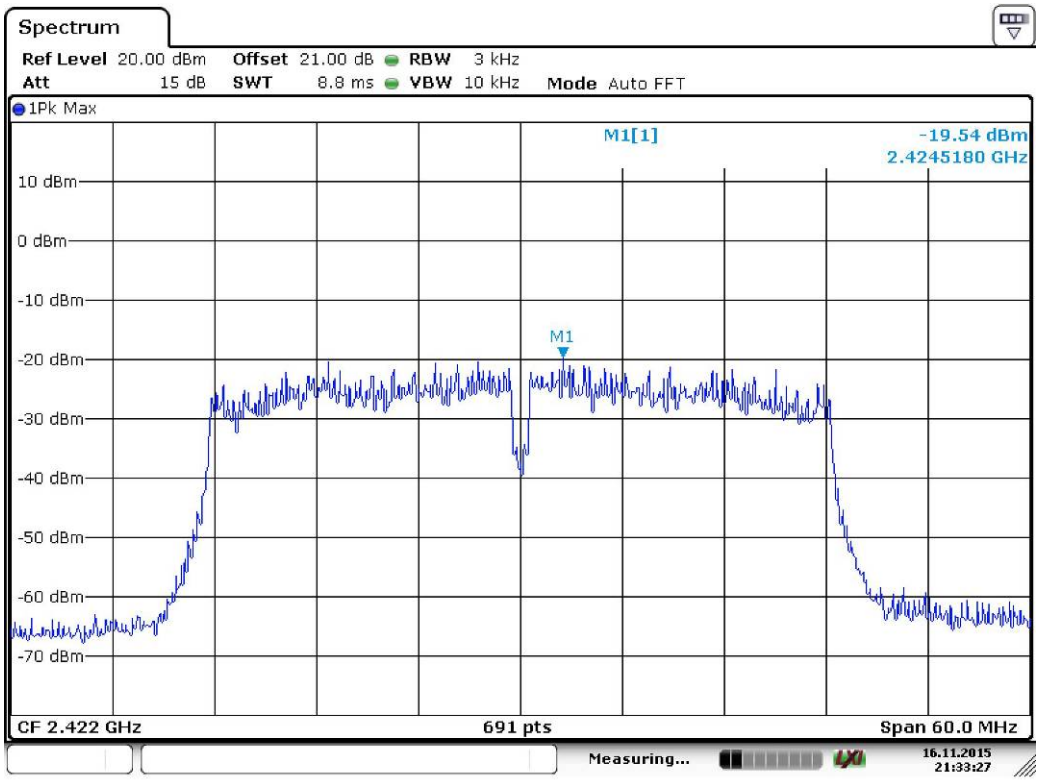


Date: 16.NOV.2015 21:32:21

802.11n40 mode:

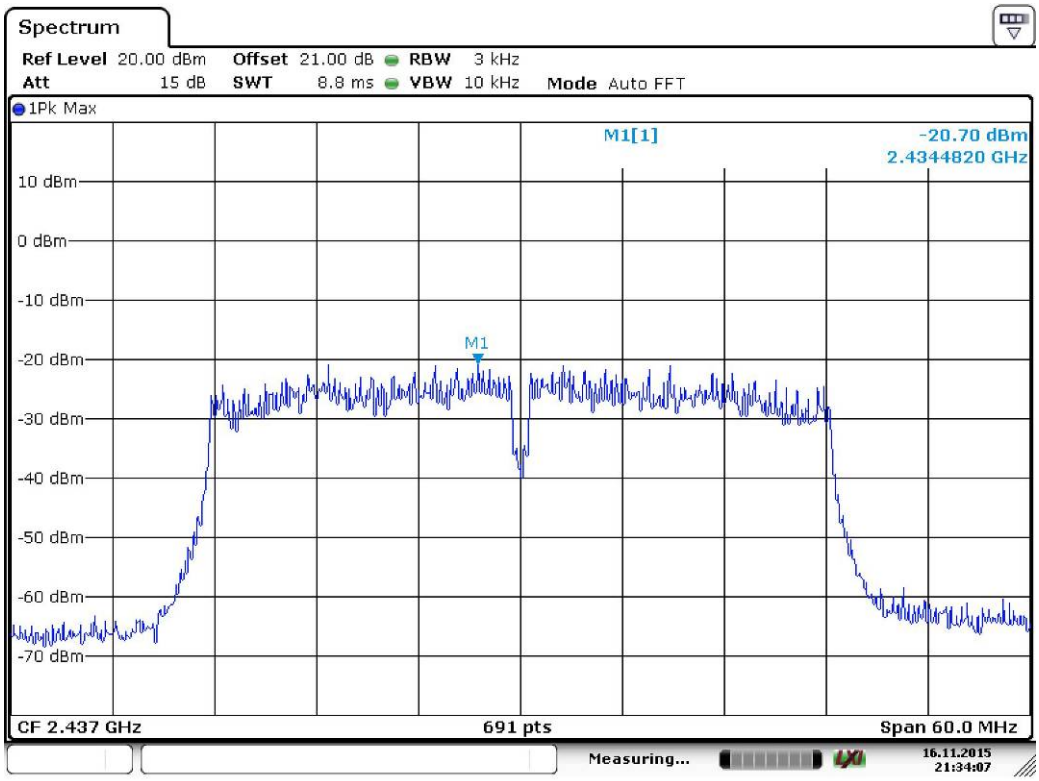
Channel No.	Frequency (MHz)	Mode	Data Rate	PSD (dBm/3KHz)	Limit	Result
3	2422	802.11n40	MCS15	-19.54	8dBm/3KHz	Pass
6	2437			-20.70		Pass
9	2452			-20.15		Pass

802.11n40 mode:
Channel 2422MHz



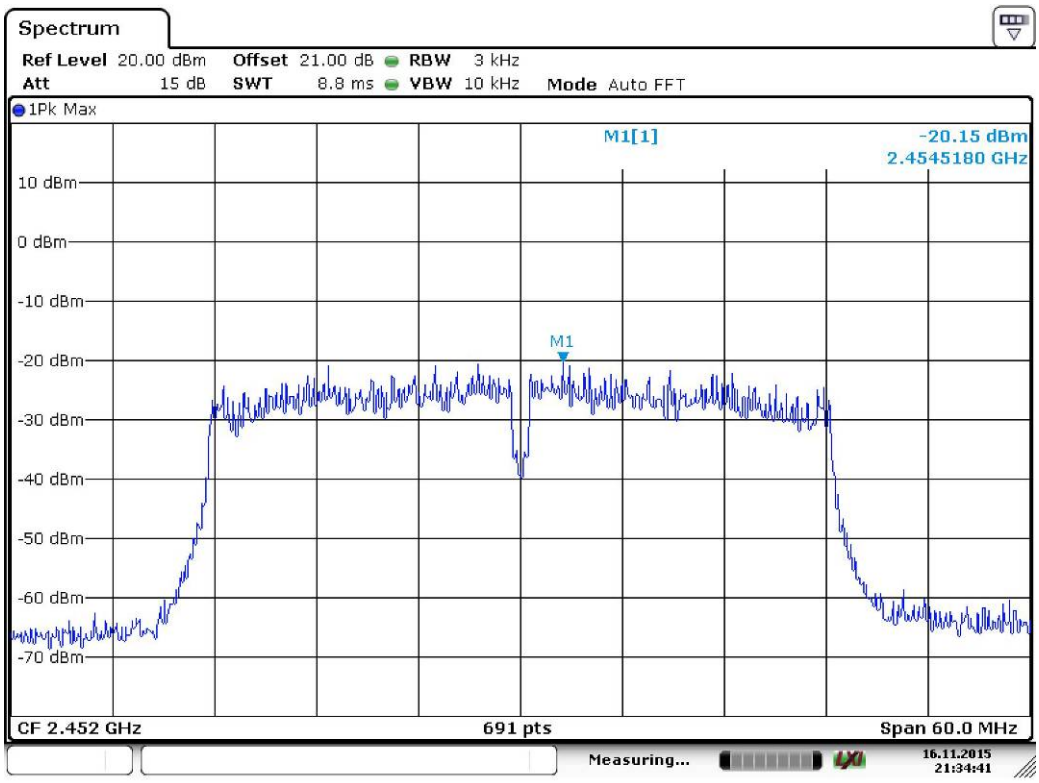
Date: 16.NOV.2015 21:33:27

Channel 2437MHz



Date: 16.NOV.2015 21:34:06

Channel 2452MHz



Date: 16.NOV.2015 21:34:42

10. EMISSIONS IN NON-REST RICTED FREQUENCY BANDS

10.1 LIMITS

FCC 15.247(d) & 15.209

10.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 DTS Measurement Guidance v03r01.

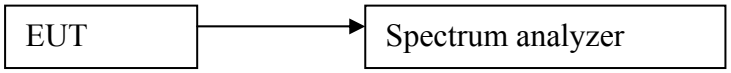
Remove the antenna from the EUT and then connect a low attenuation cable from the antenna port to the spectrum.

1. Reference level measurement

Below 1GHz Set the spectrum analyzer: RBW =100KHz VBW >= 3*RBW, Set the span to ≥ 1.5 times the DTS bandwidth. Sweep = auto; Detector Function = peak. Trace = Max-hold. Allow the trace to stabilize.

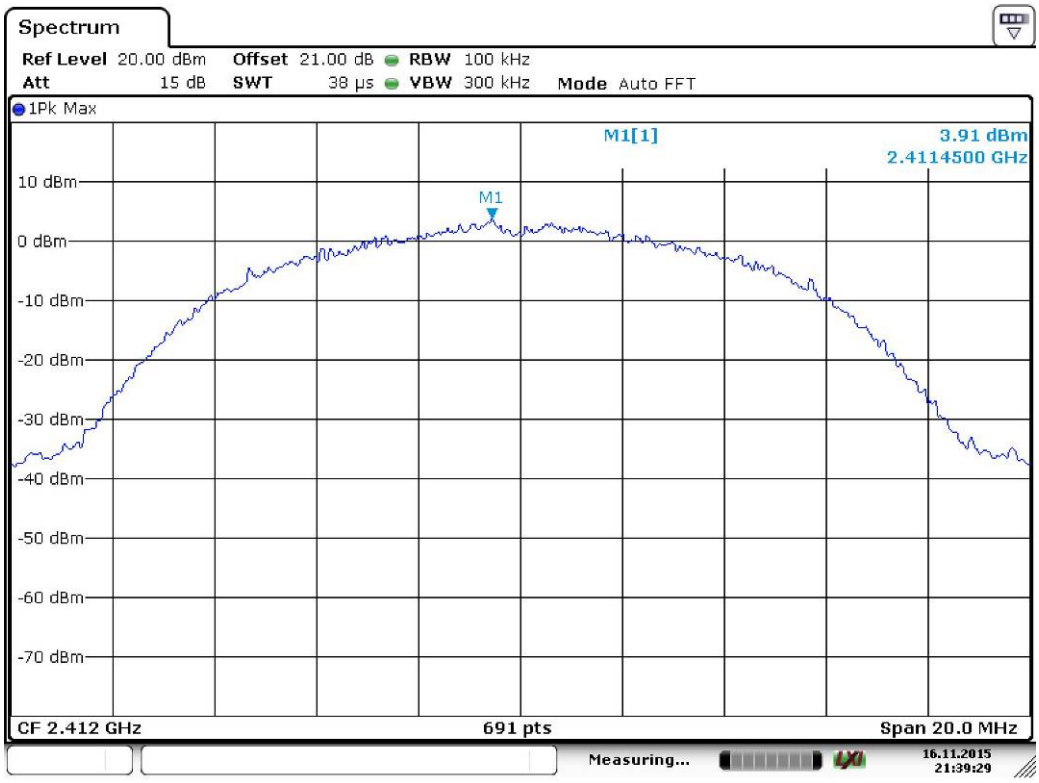
2. Set the spectrum analyzer: RBW =100KHz VBW >= 3*RBW, Set the span to ≥ 1.5 times the DTS bandwidth. Sweep = auto; Detector Function = peak. Trace = Max-hold. Allow the trace to stabilize.

10.3 TEST SETUP



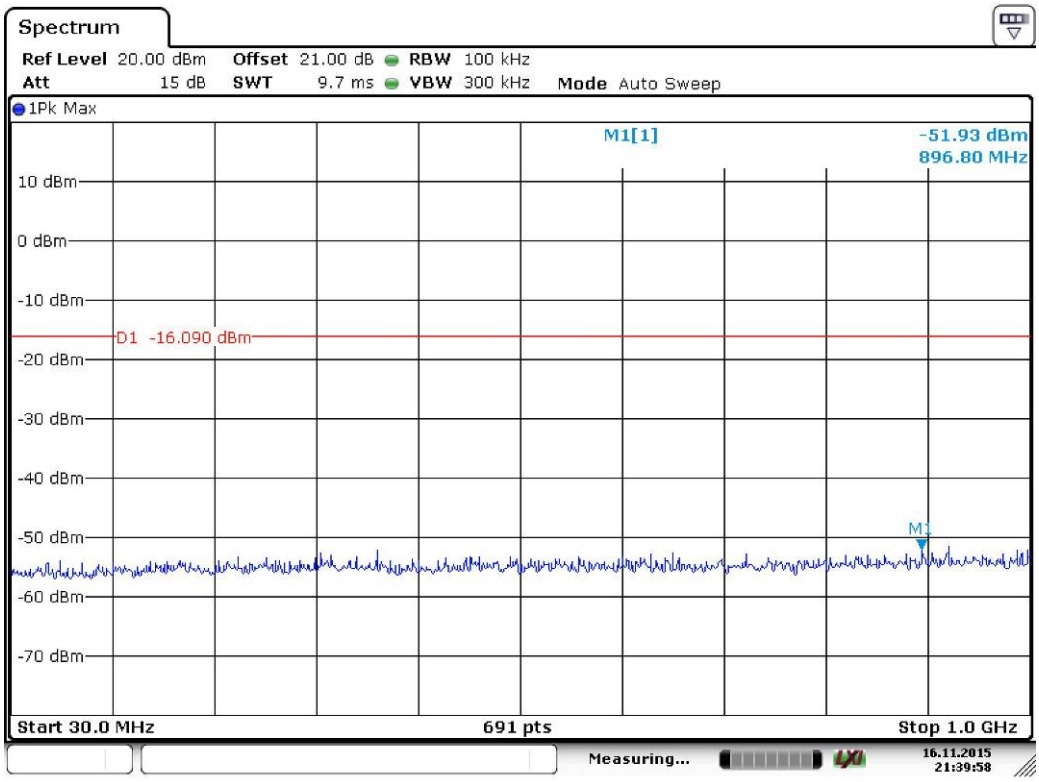
10.4 TEST RESULTS

802.11b mode:
Channel 2412MHz
reference level：



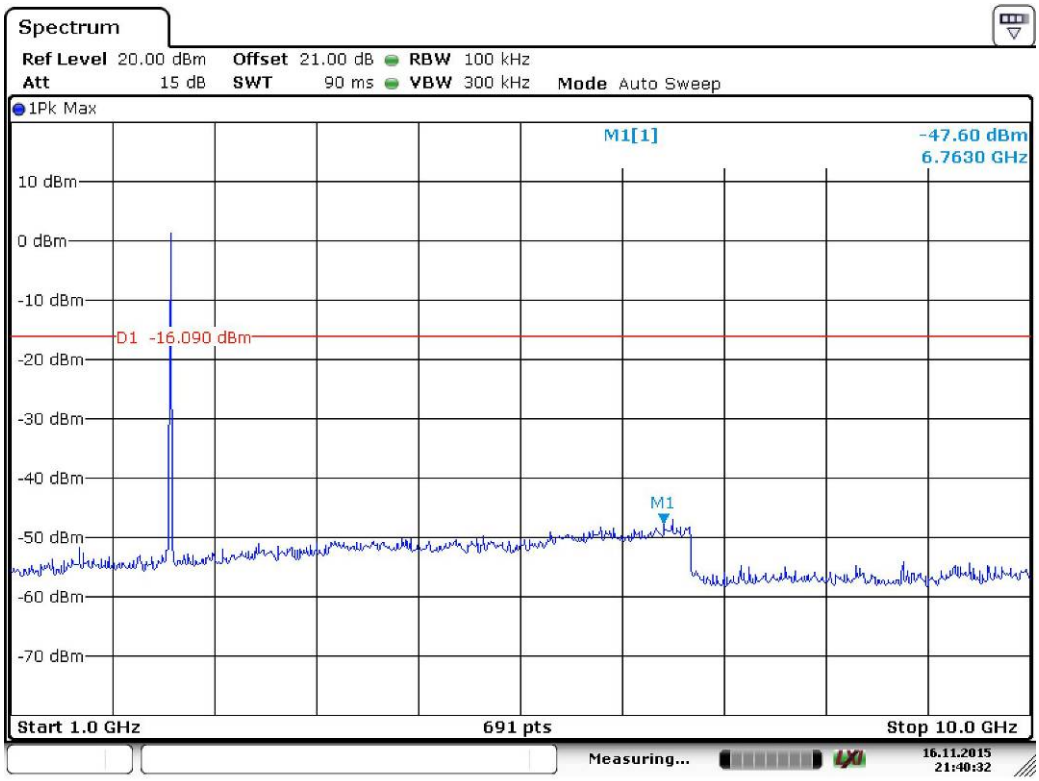
Date: 16.NOV.2015 21:39:29

30M-1G



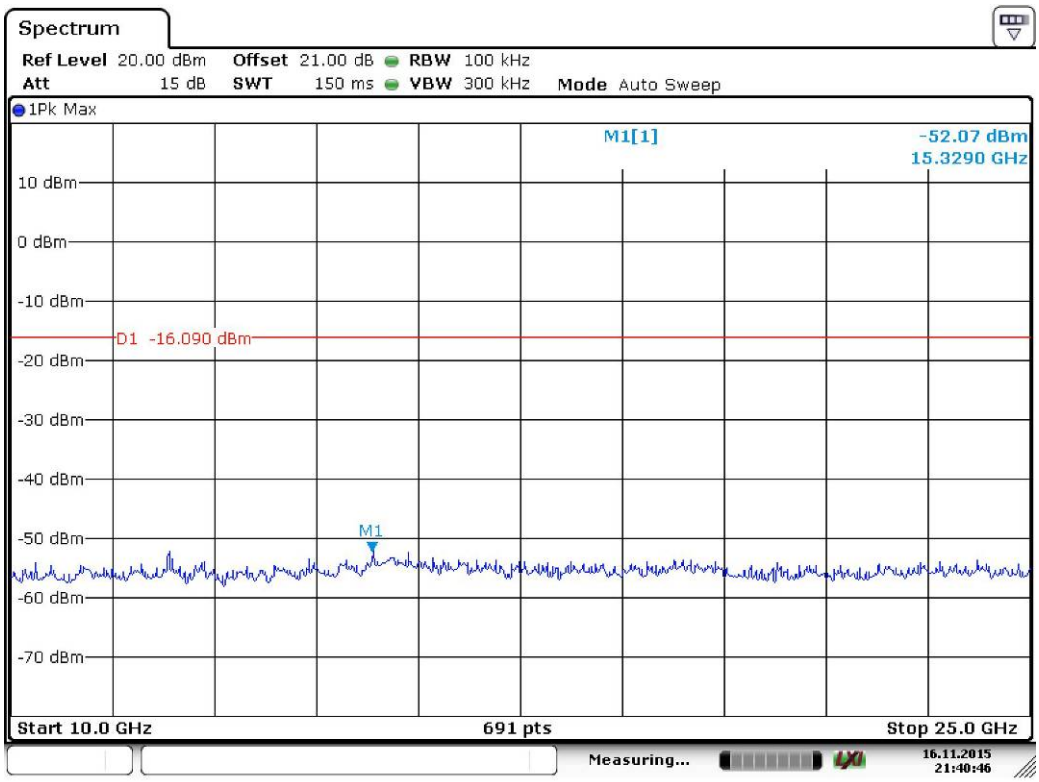
Date: 16.NOV.2015 21:39:58

1G-10G



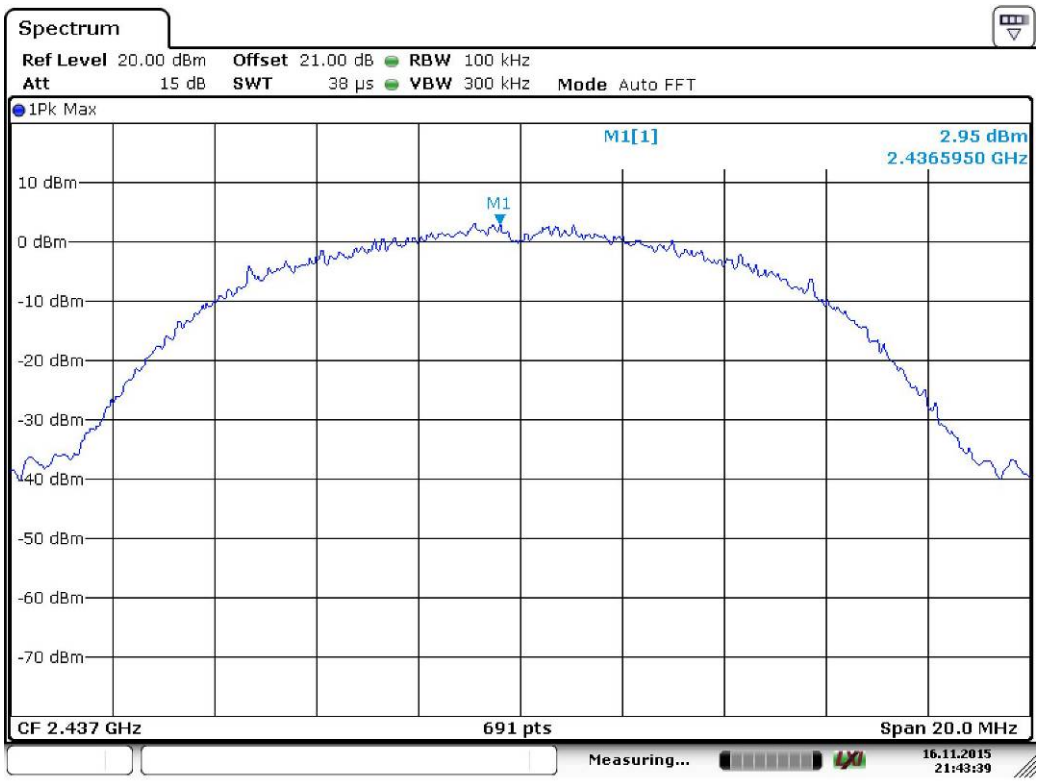
Date: 16.NOV.2015 21:40:32

10G-25G



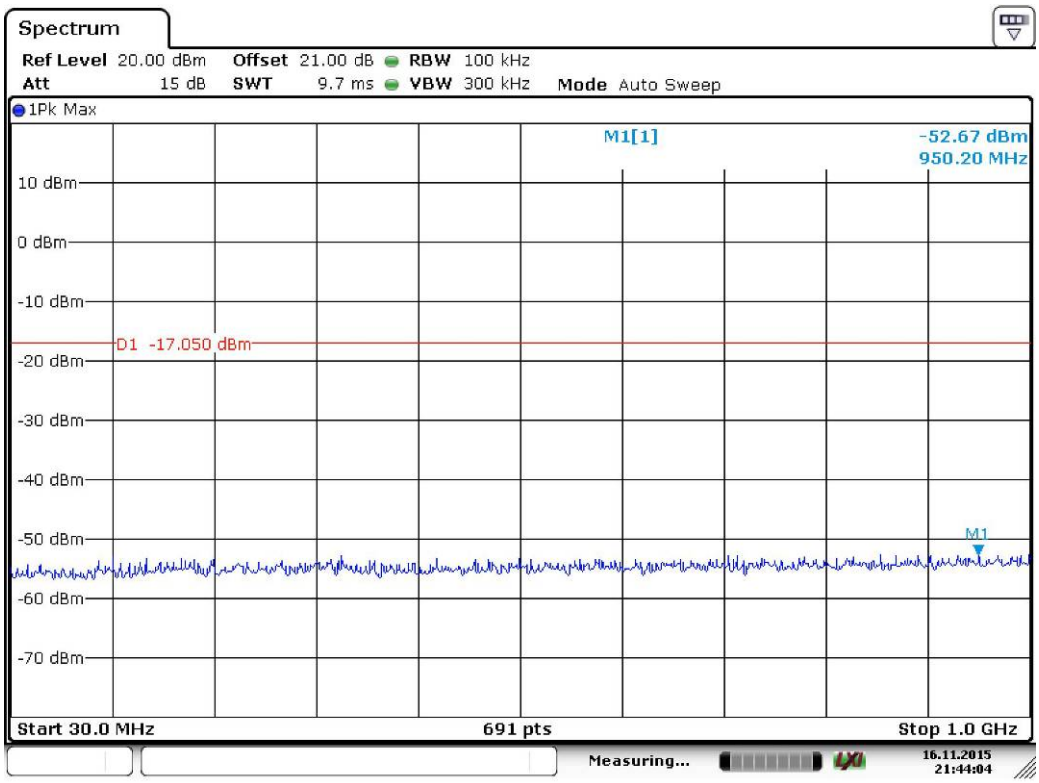
Date: 16.NOV.2015 21:40:46

802.11b mode:
Channel 2437MHz
Reference level



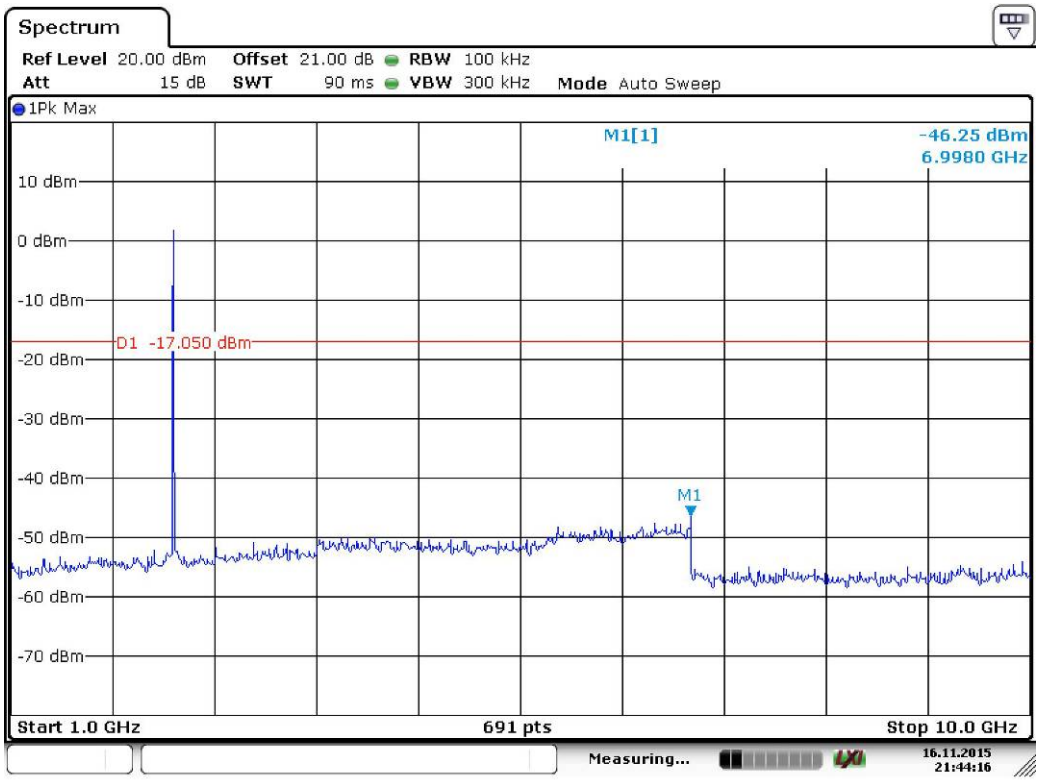
Date: 16.NOV.2015 21:43:38

30M-1G



Date: 16.NOV.2015 21:44:04

1G-10G



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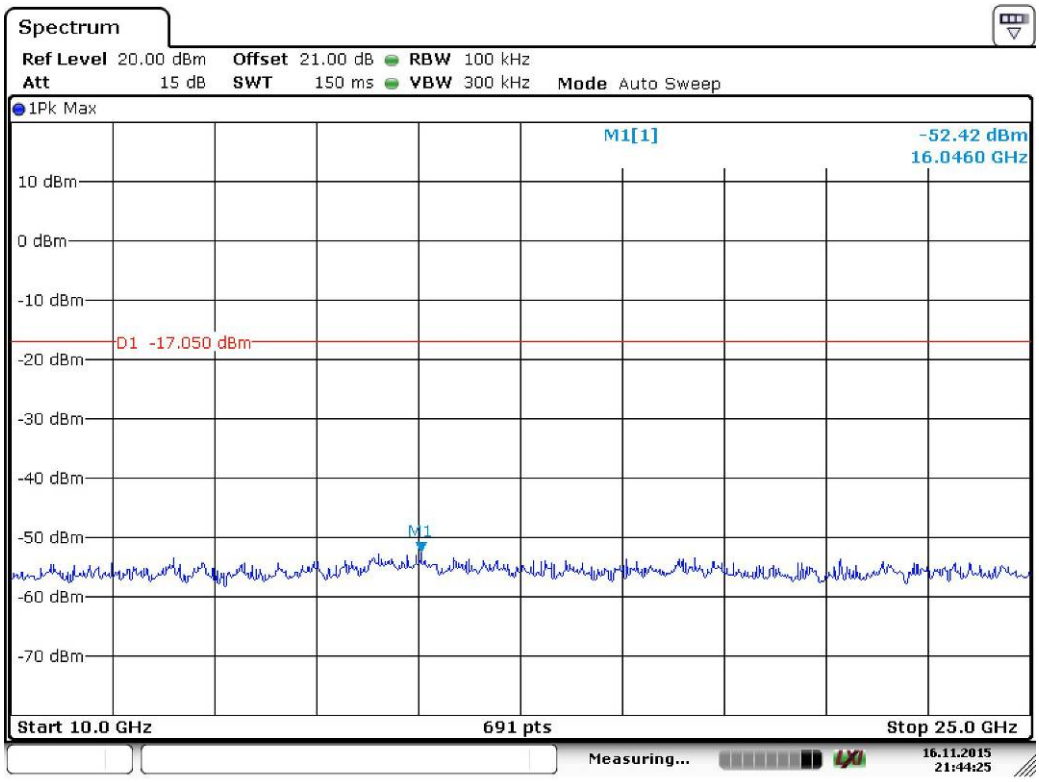
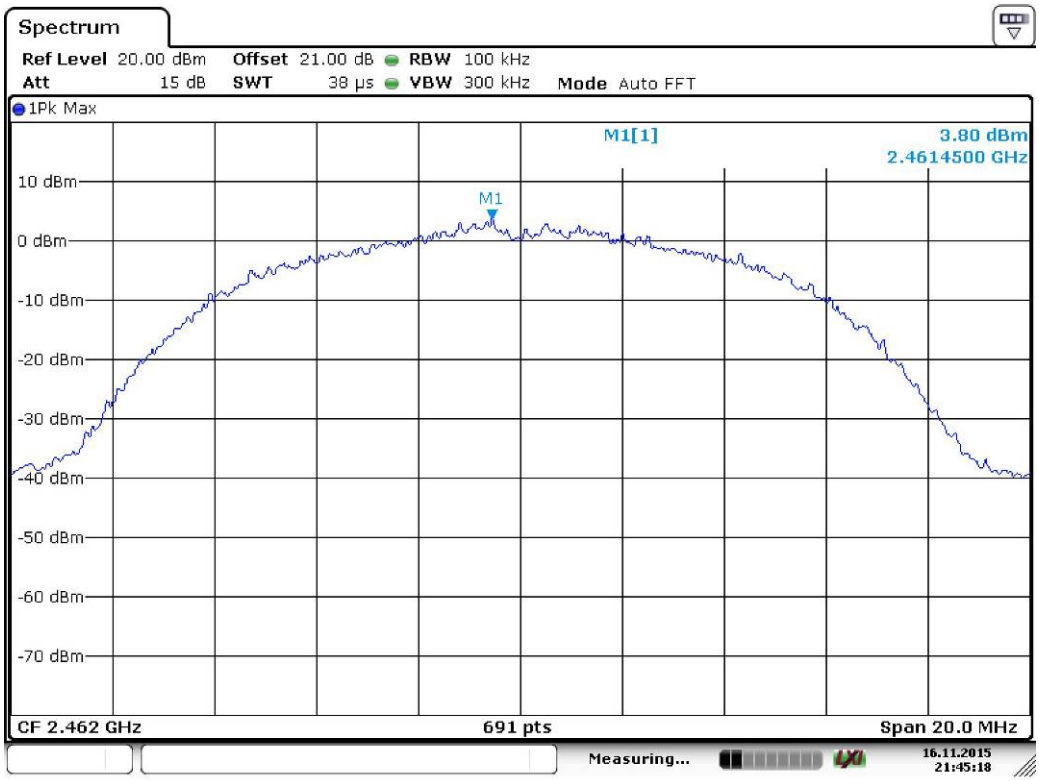
10G-25G



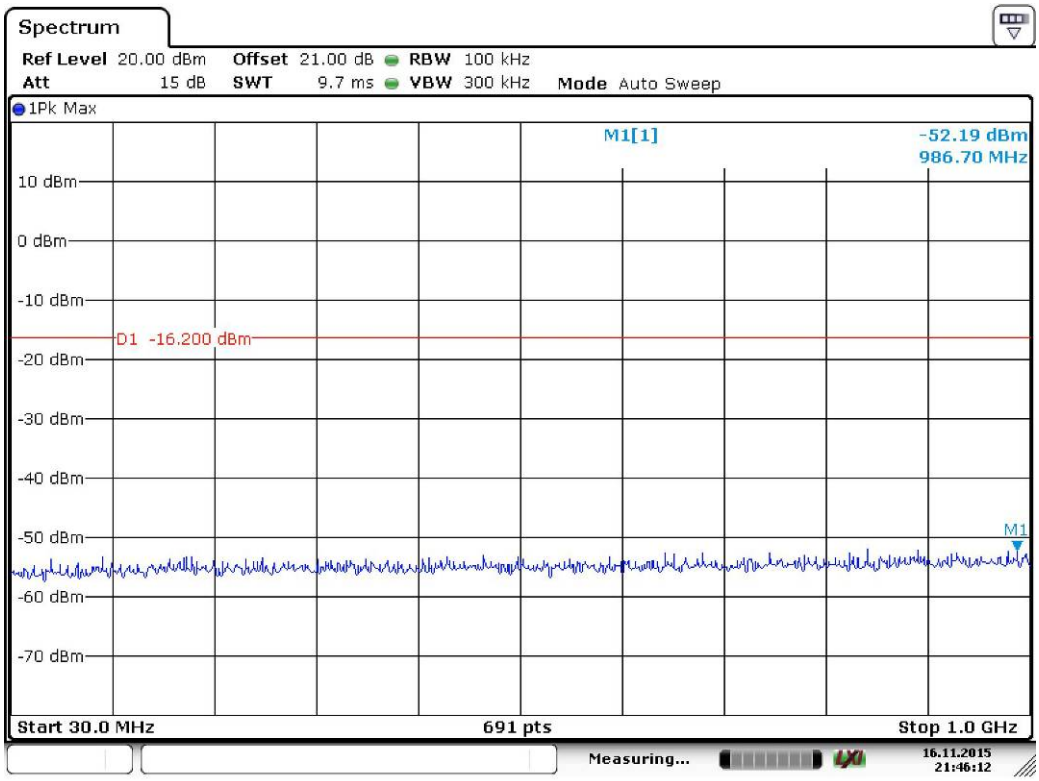
Date: 16.NOV.2015 21:44:26

802.11b mode:
Channel 2462MHz
Reference level



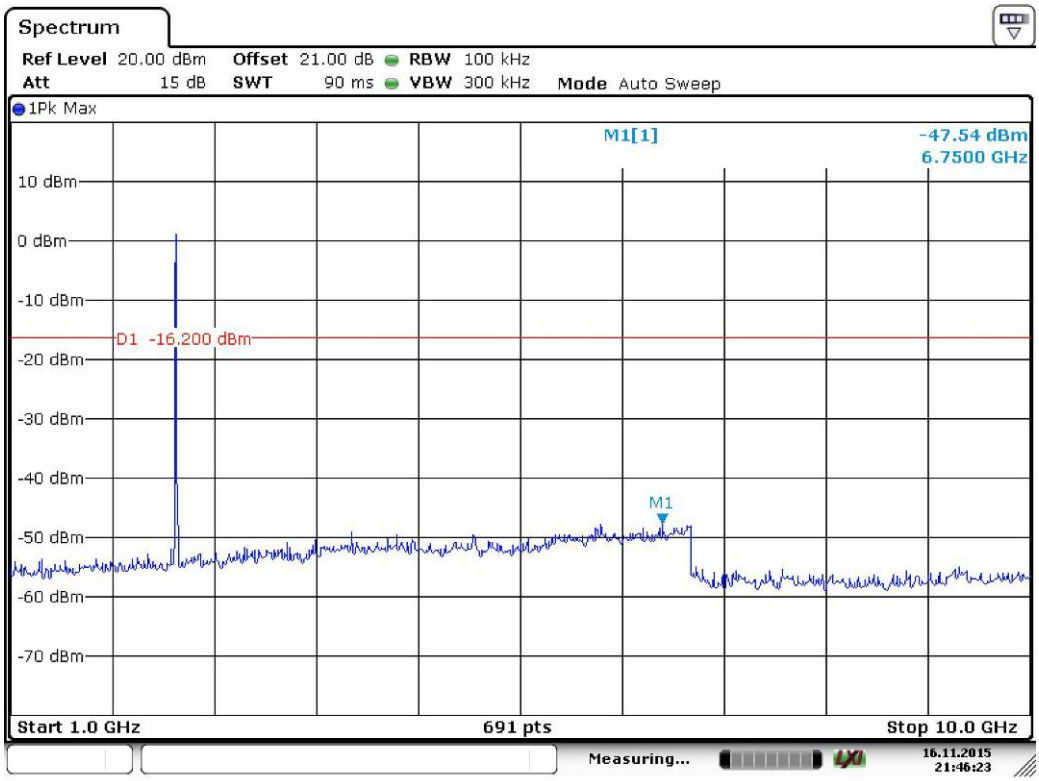
Date: 16.NOV.2015 21:45:19

30M-1G



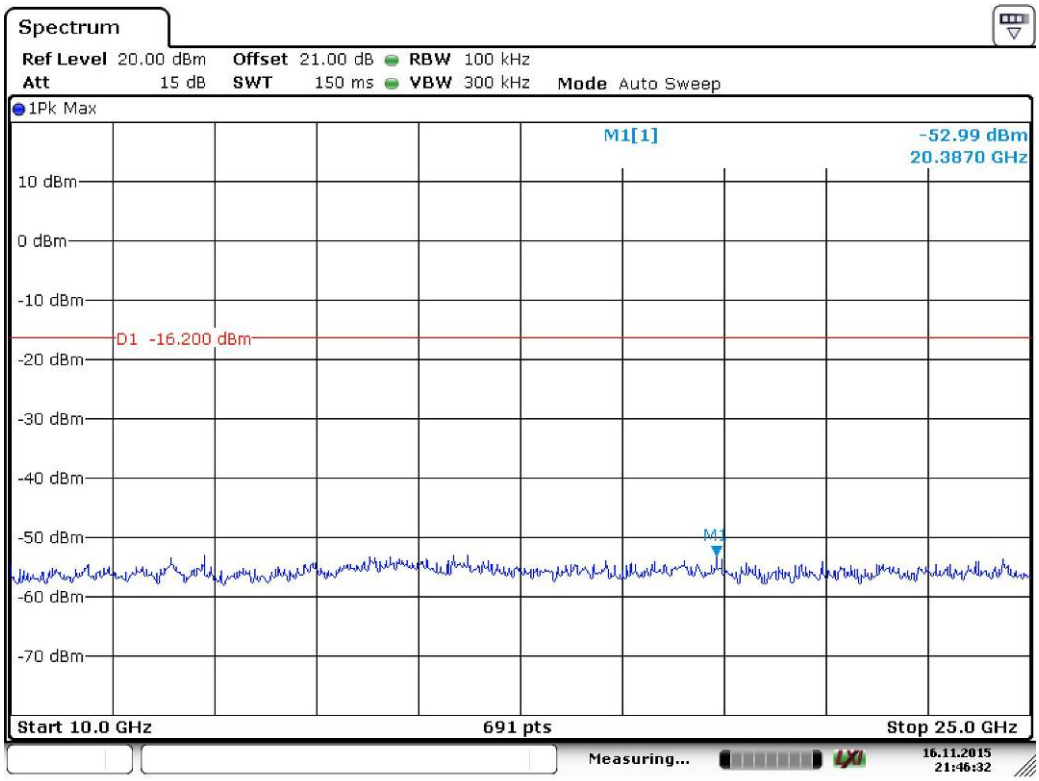
Date: 16.NOV.2015 21:46:12

1G-10G



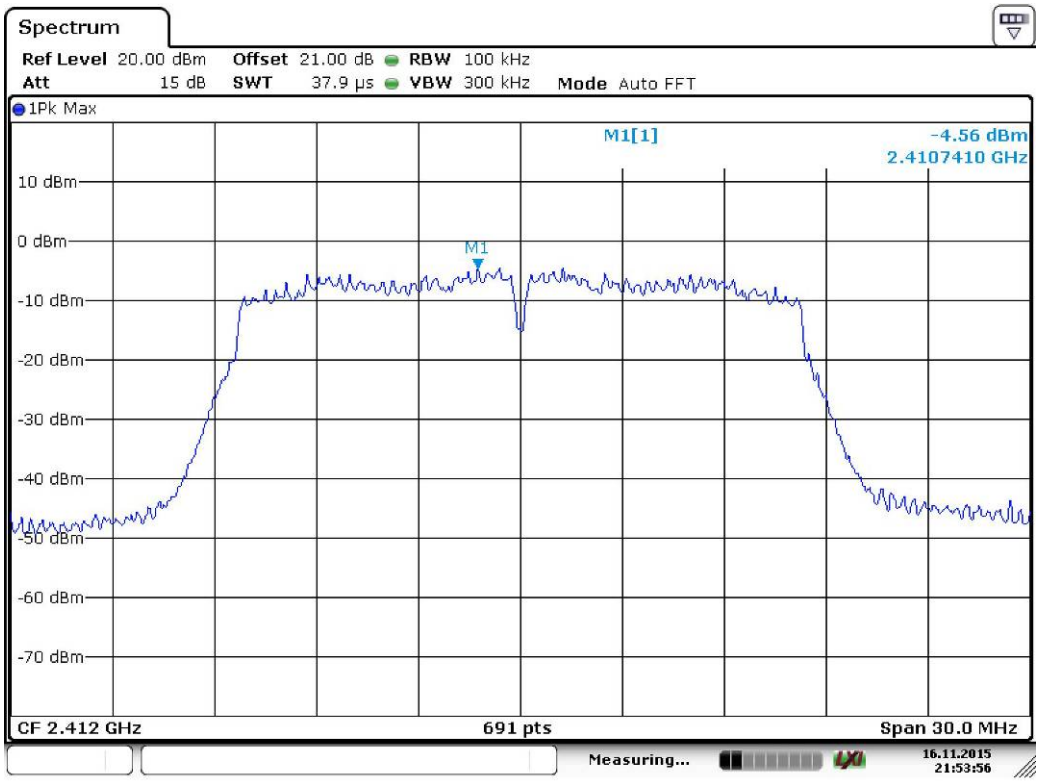
Date: 16.NOV.2015 21:46:23

10G-25G



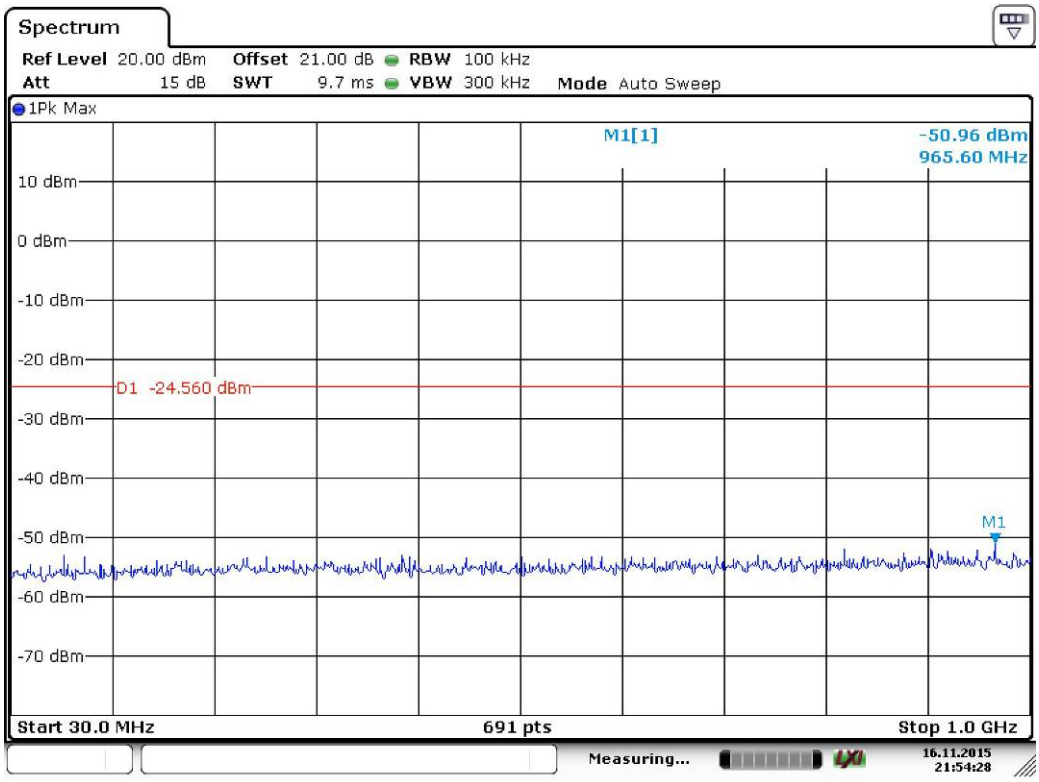
Date: 16.NOV.2015 21:46:32

802.11g mode:
Channel 2412MHz
reference level：



Date: 16.NOV.2015 21:53:56

30M-1G



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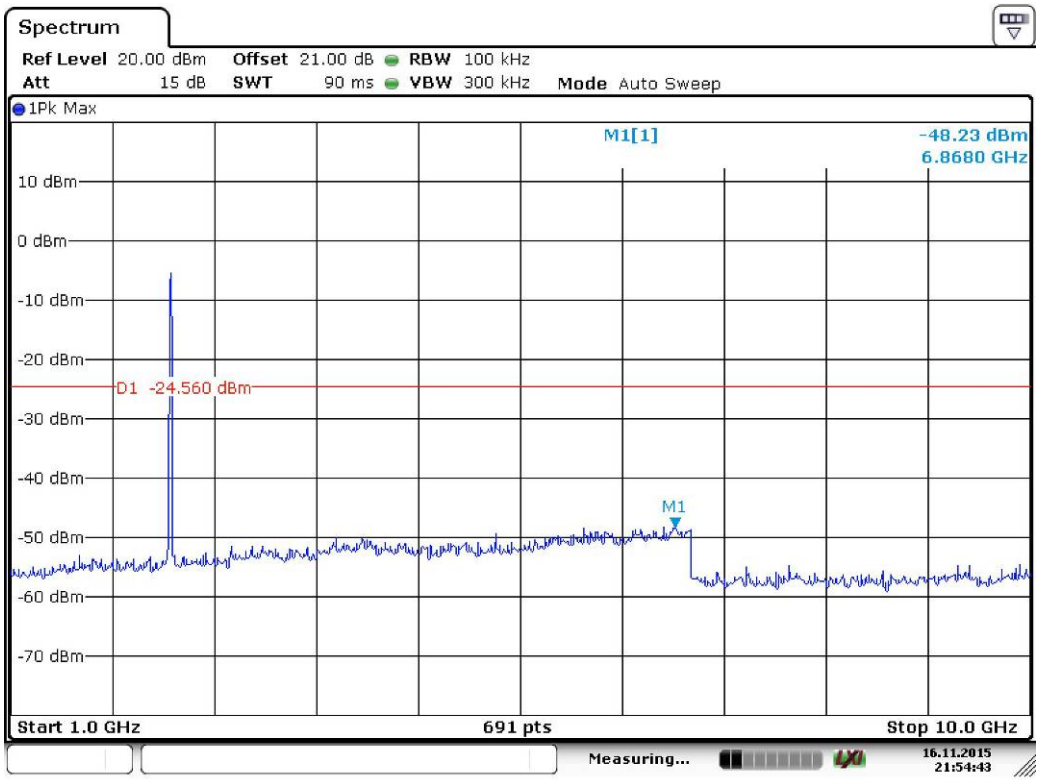
1G-10G



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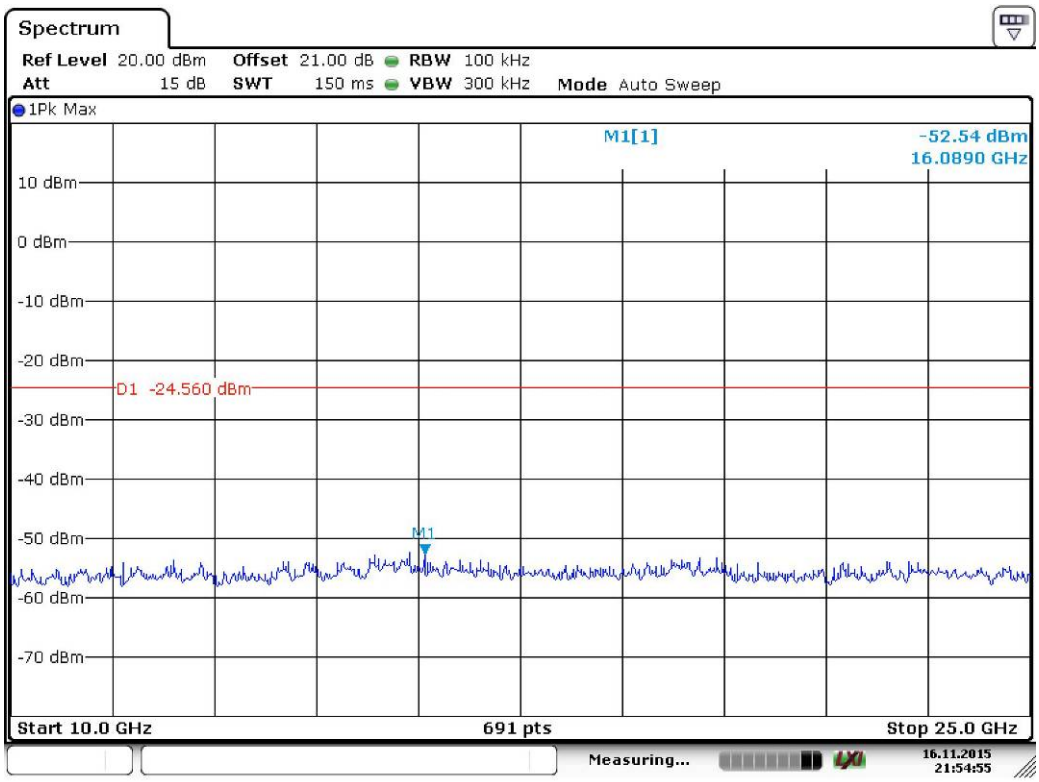
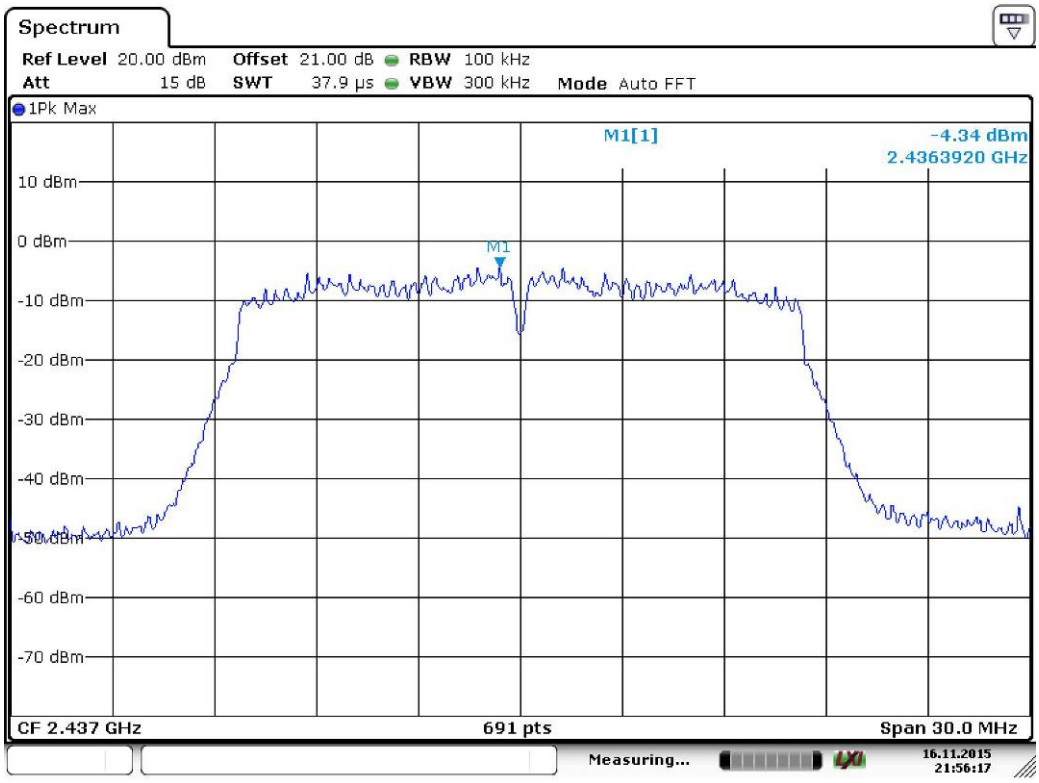
10G-25G



Date: 16.NOV.2015 21:54:55

802.11g mode:
Channel 2437MHz
reference level：



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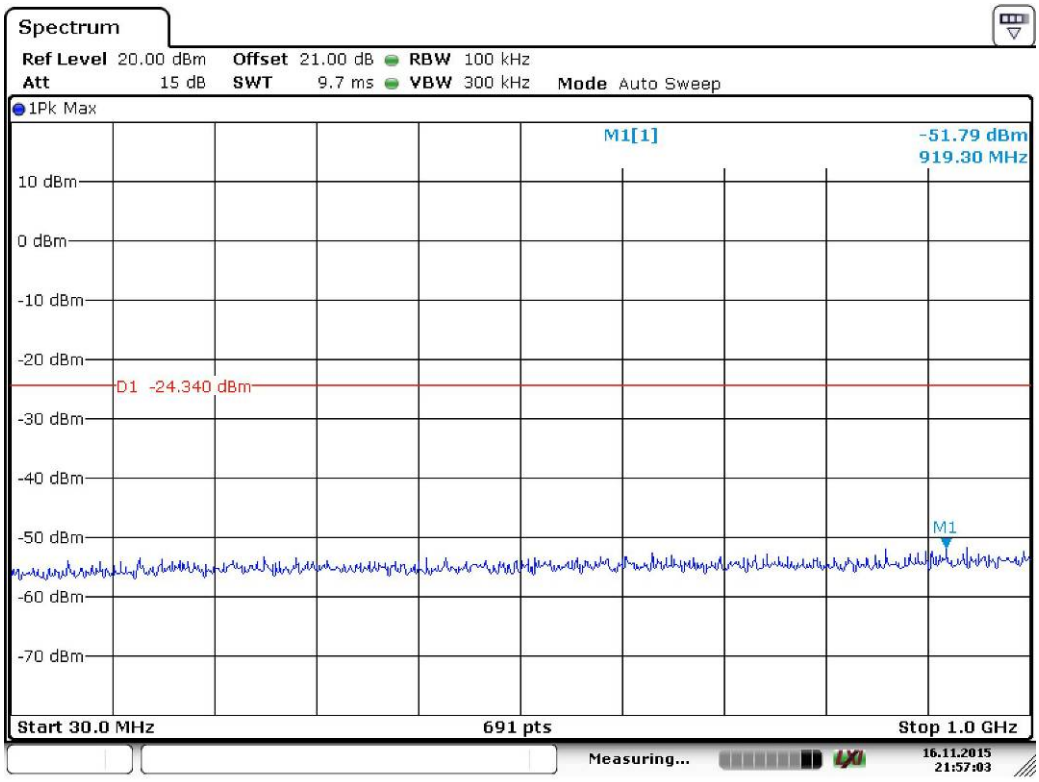
30M-1G



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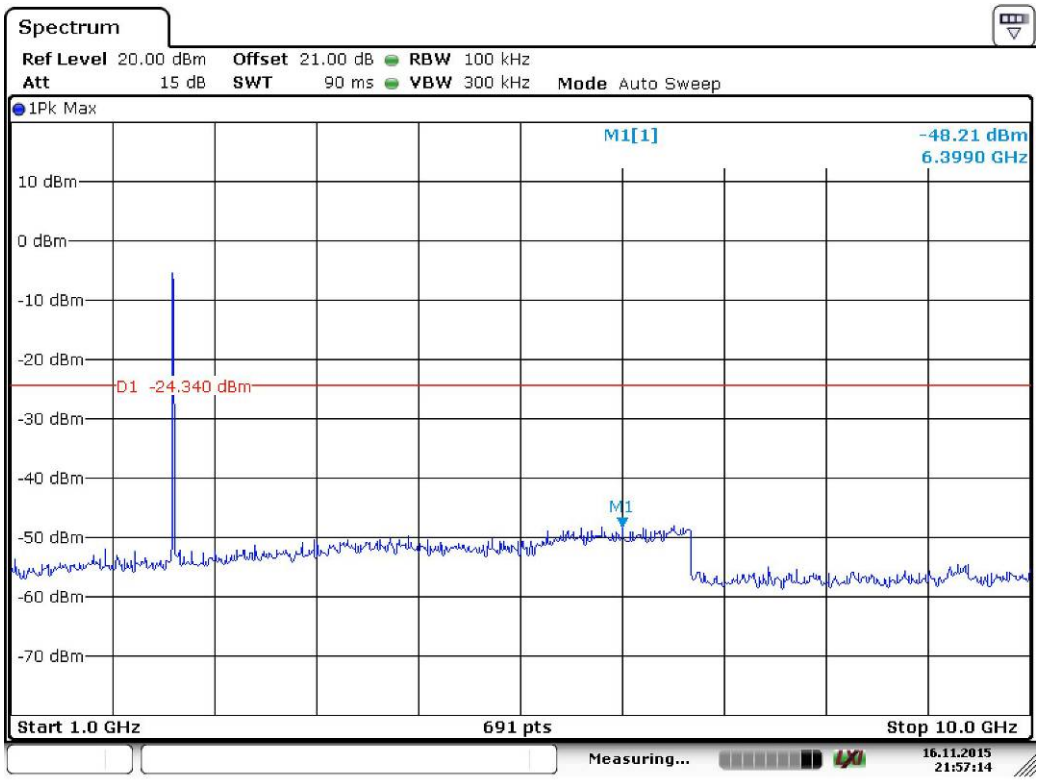
1G-10G



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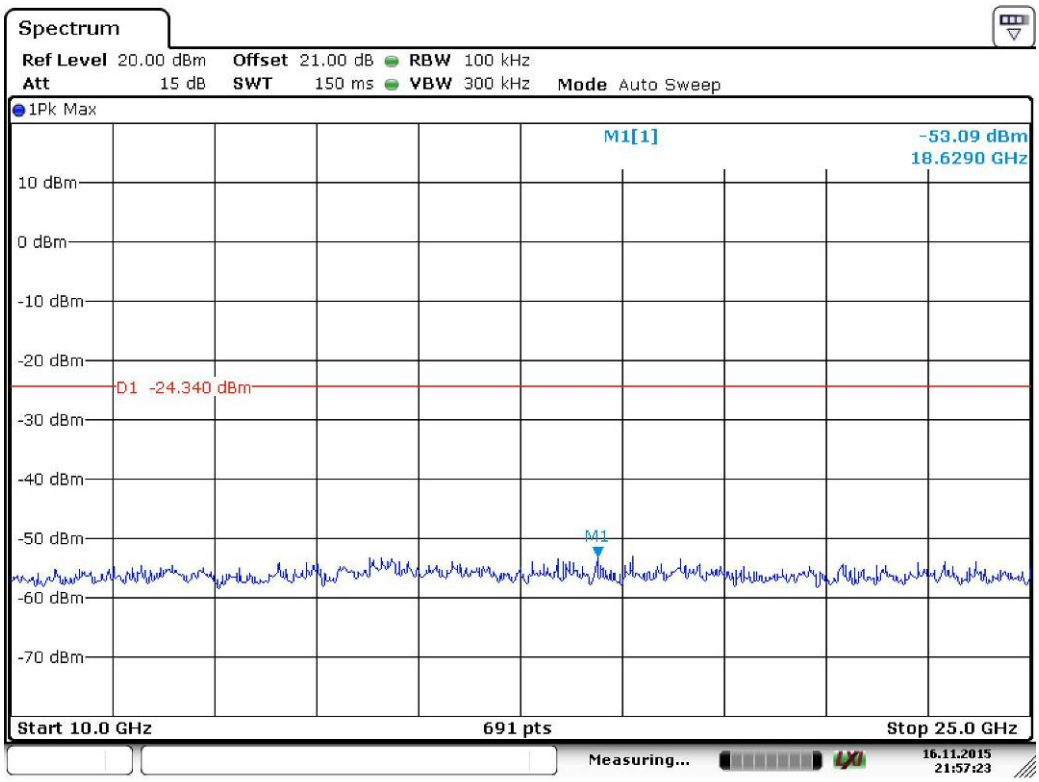
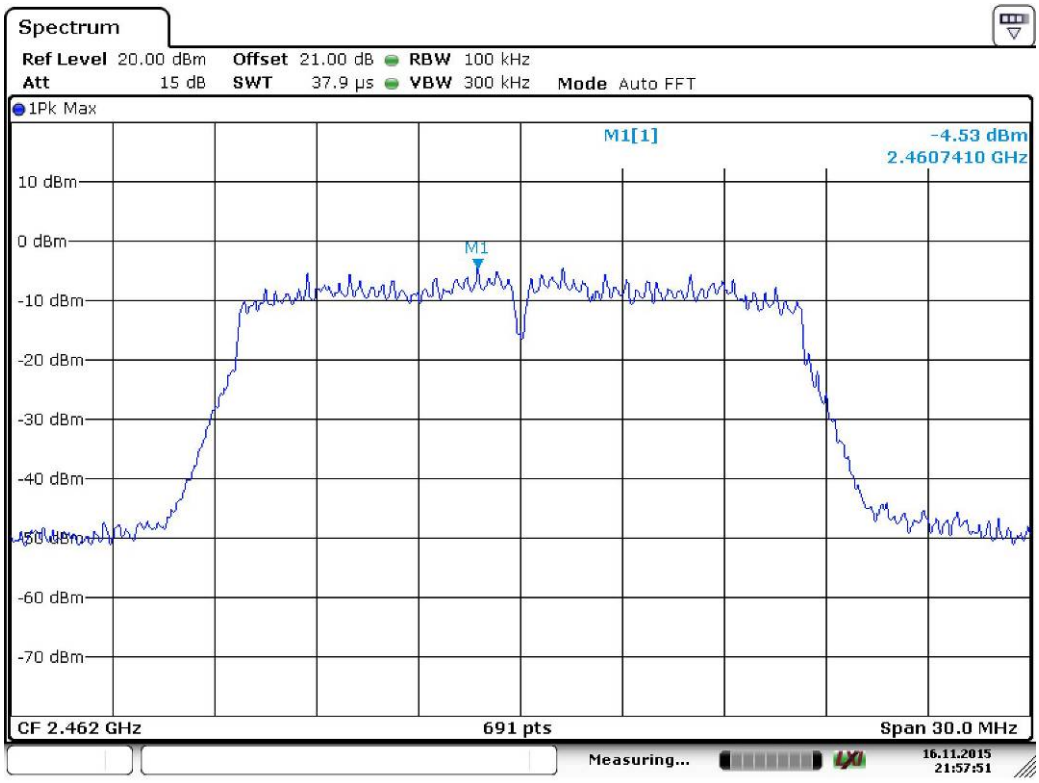
10G-25G



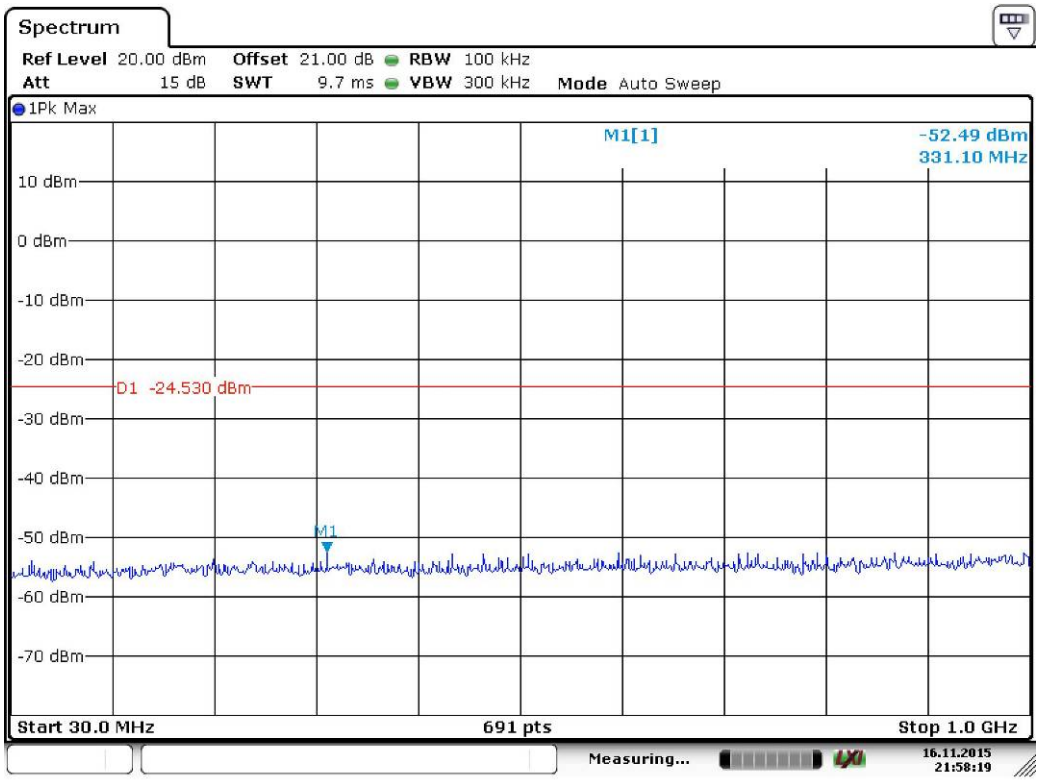
Date: 16.NOV.2015 21:57:23

802.11g mode:
Channel 2462MHz
reference level：



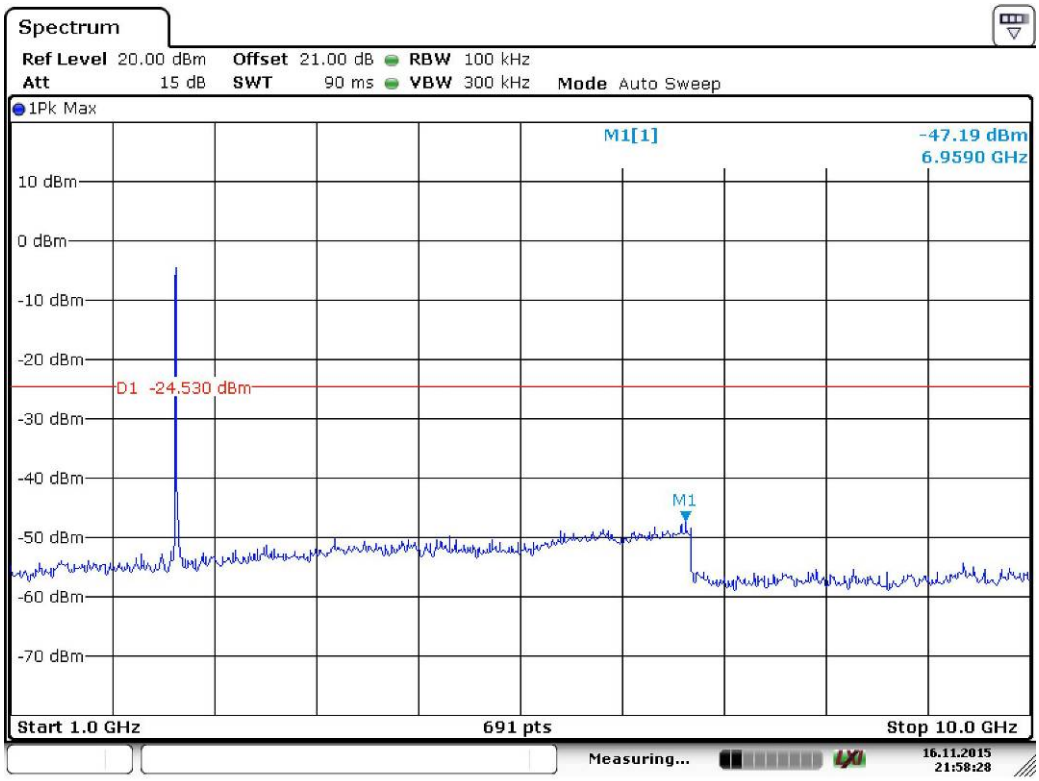
Date: 16.NOV.2015 21:57:52

30M-1G



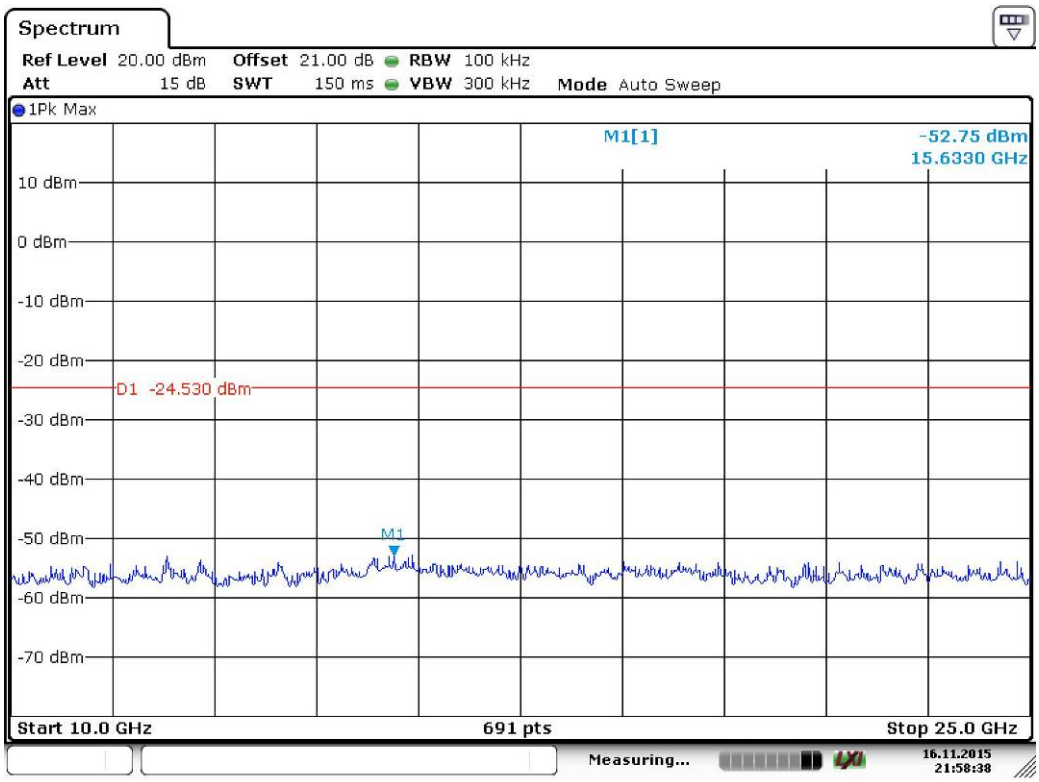
Date: 16.NOV.2015 21:58:19

1G-10G



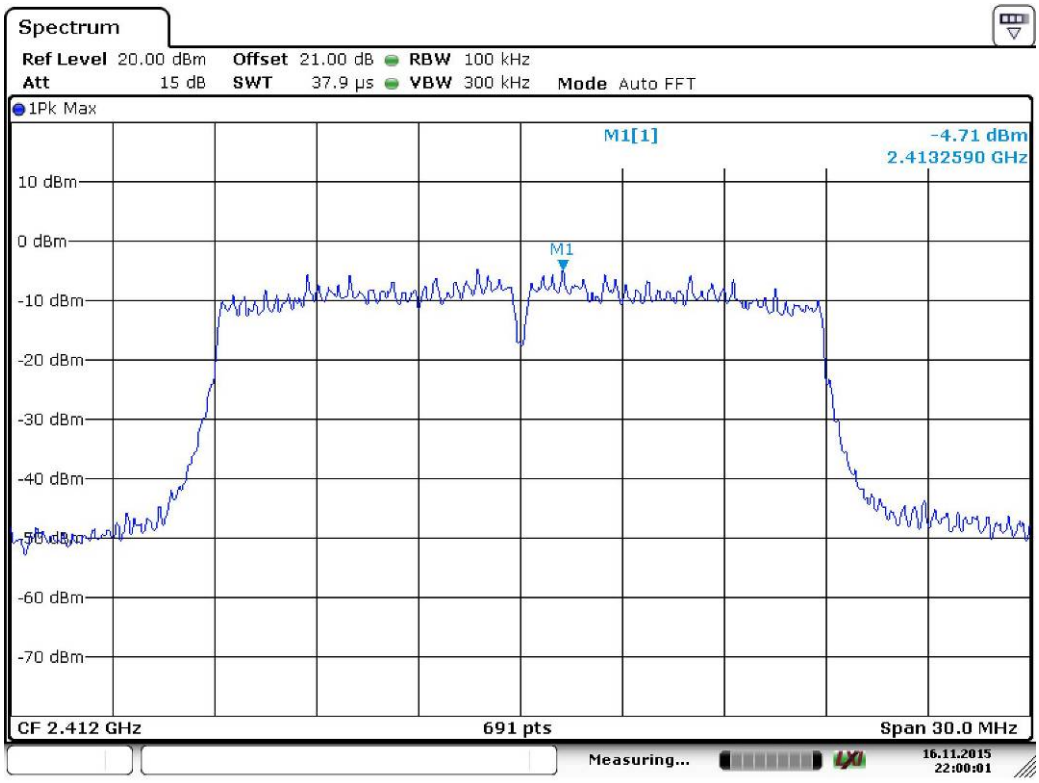
Date: 16.NOV.2015 21:58:28

10G-25G



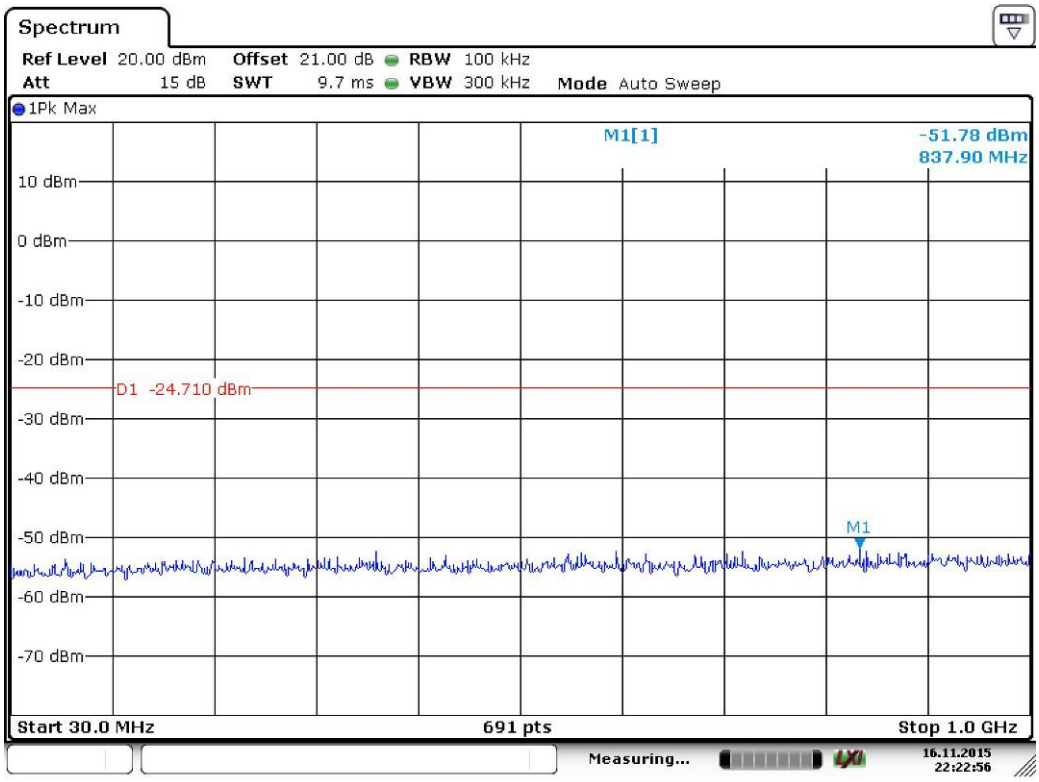
Date: 16.NOV.2015 21:58:38

802.11n20 mode:
Channel 2412MHz
reference level：



Date: 16.NOV.2015 22:00:01

30M-1G



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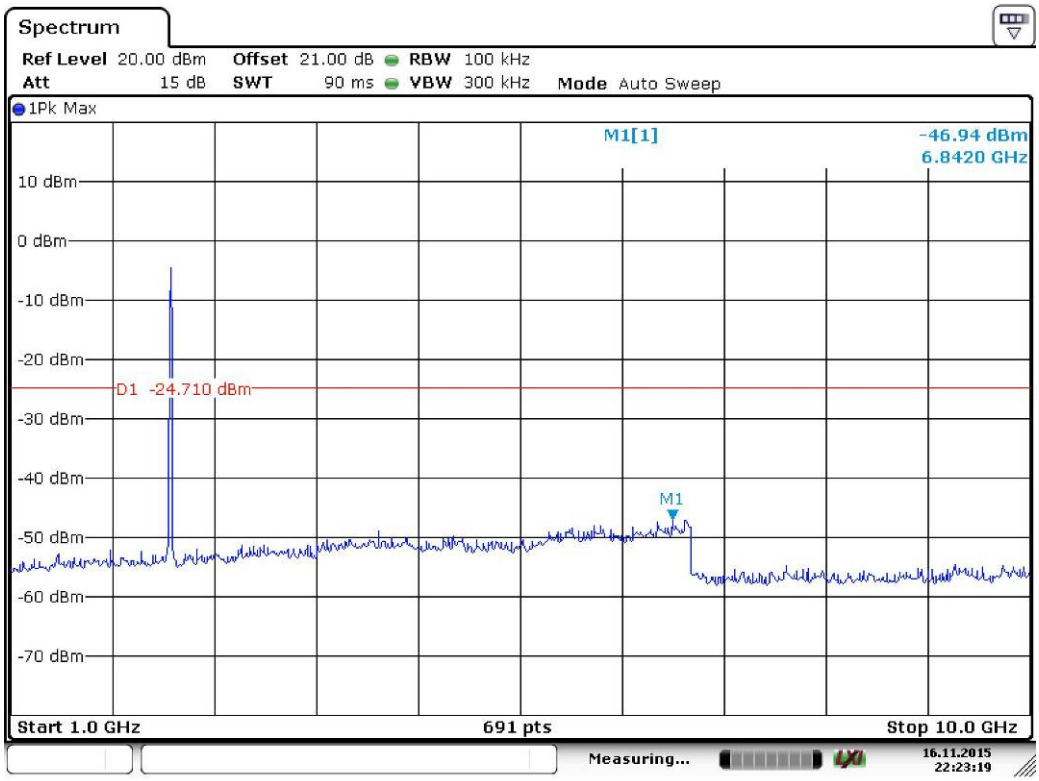
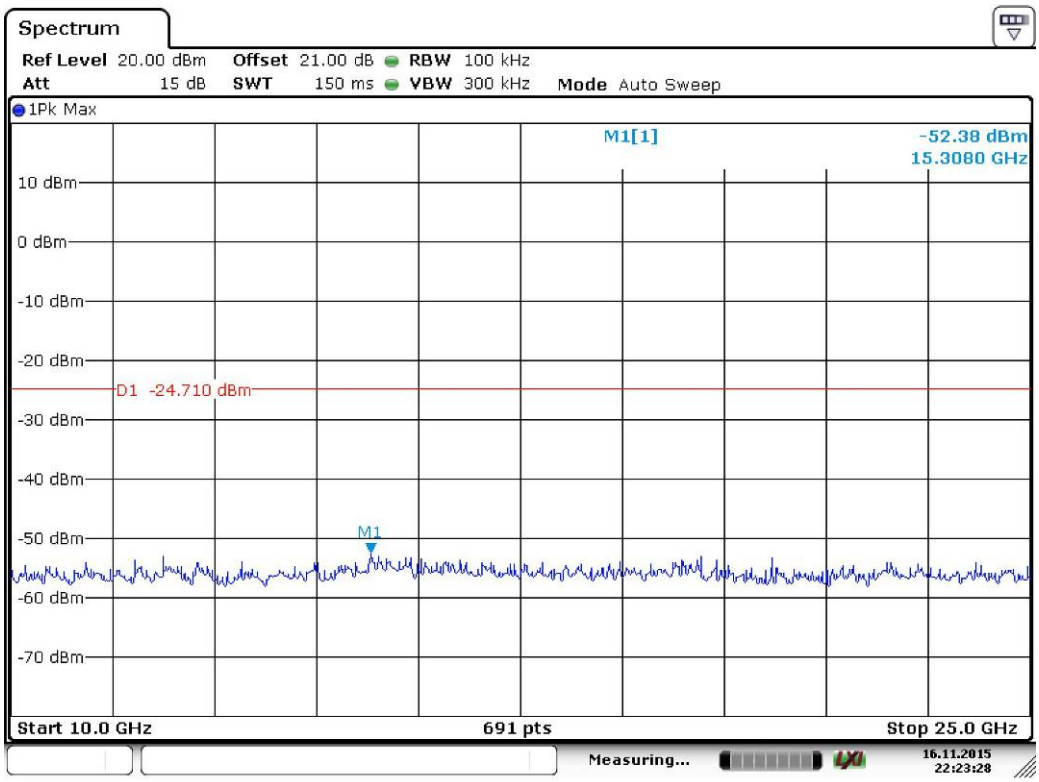
1G-10G



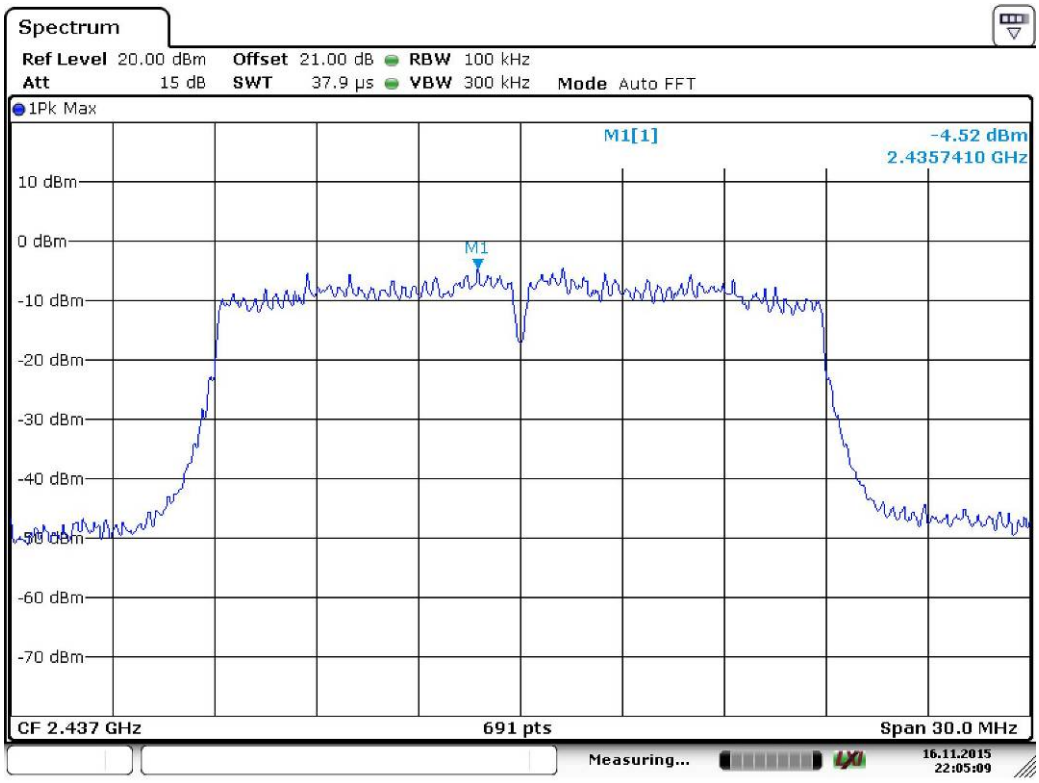
Date: 16.NOV.2015 22:23:18

10G-25G



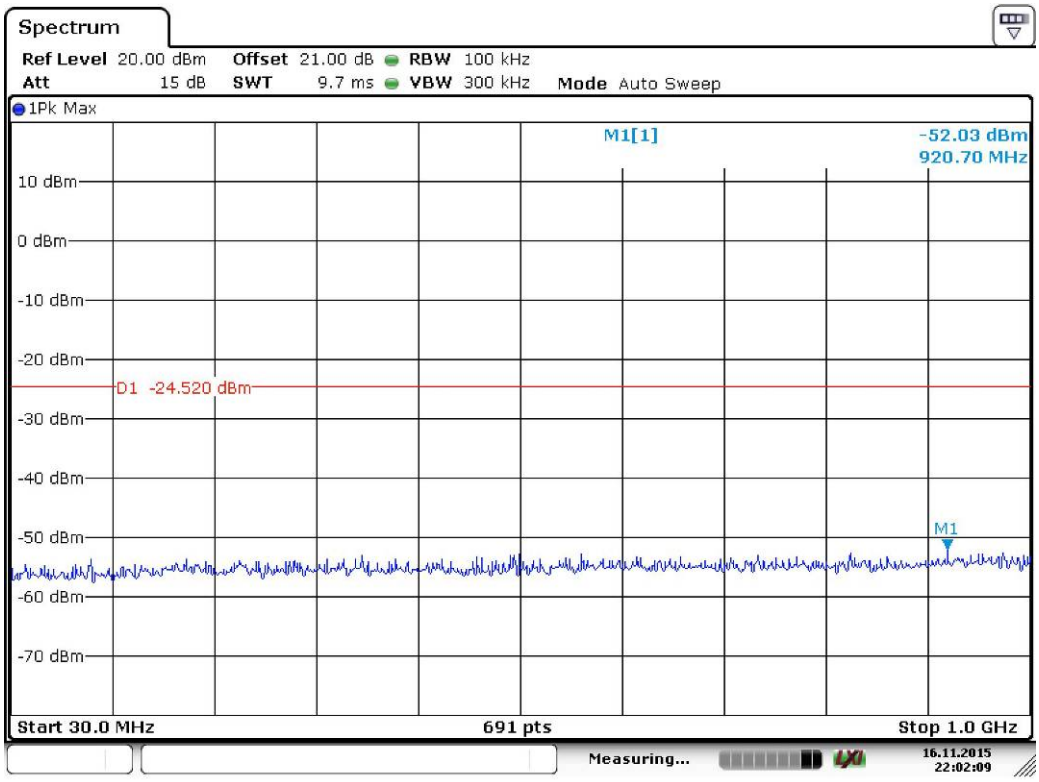
Date: 16.NOV.2015 22:23:27

802.11n20 mode:
Channel 2437MHz
reference level：



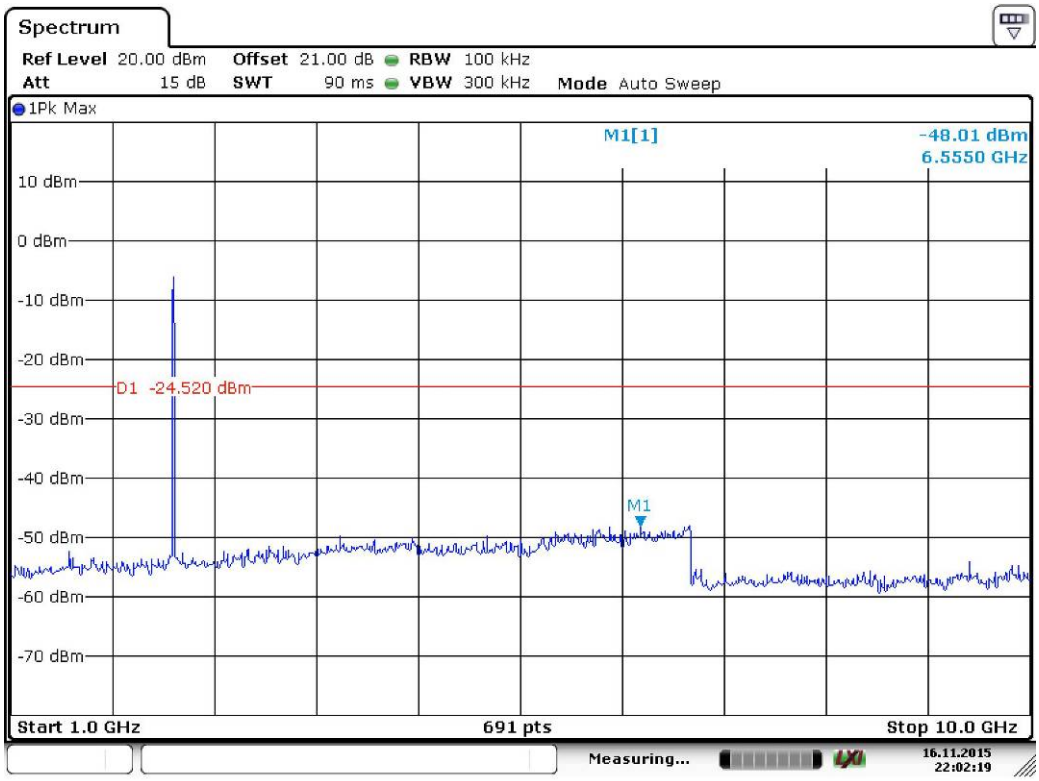
Date: 16.NOV.2015 22:05:10

30M-1G



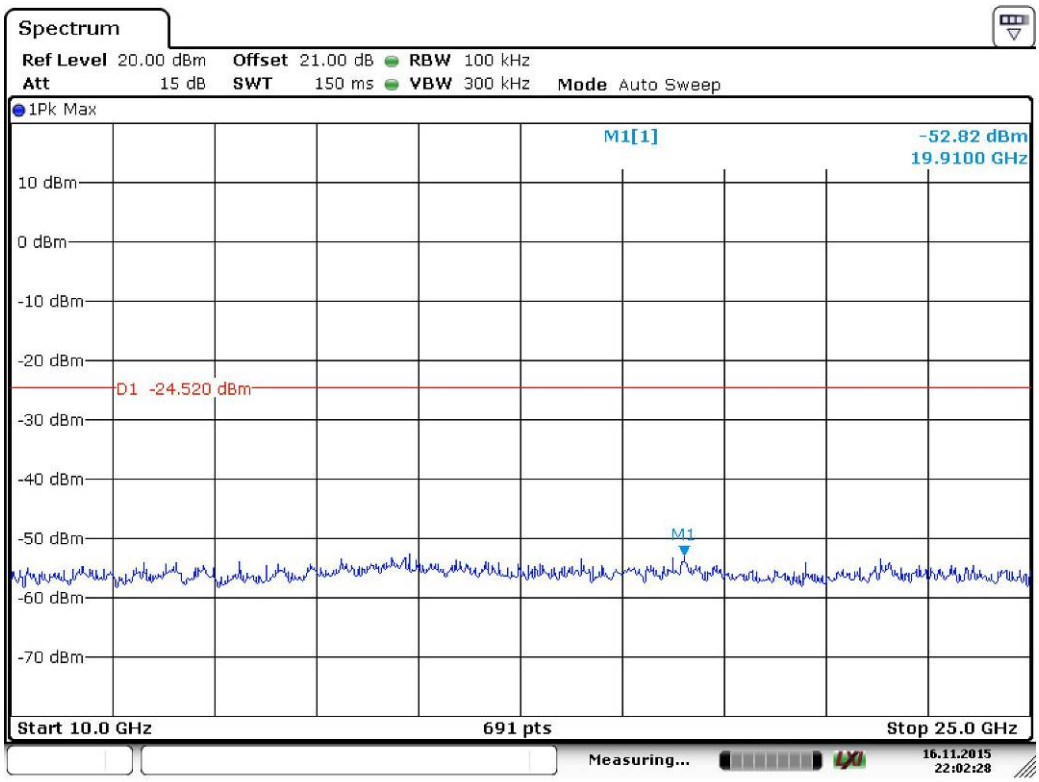
Date: 16.NOV.2015 22:02:09

1G-10G



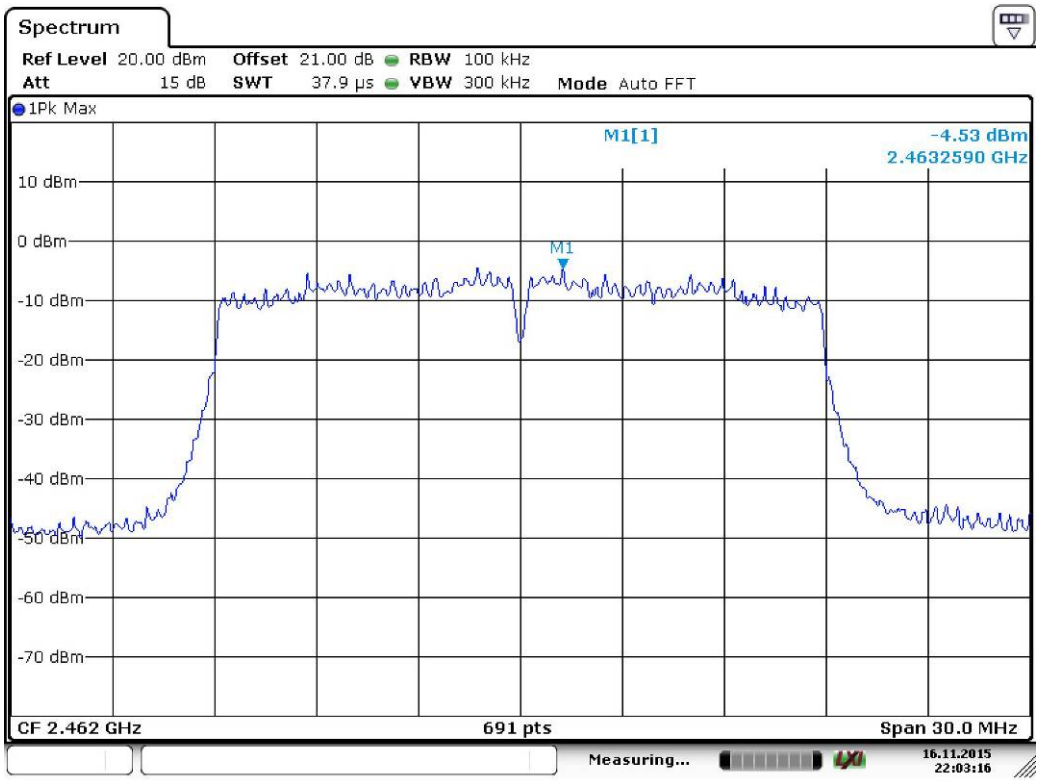
Date: 16.NOV.2015 22:02:19

10G-25G



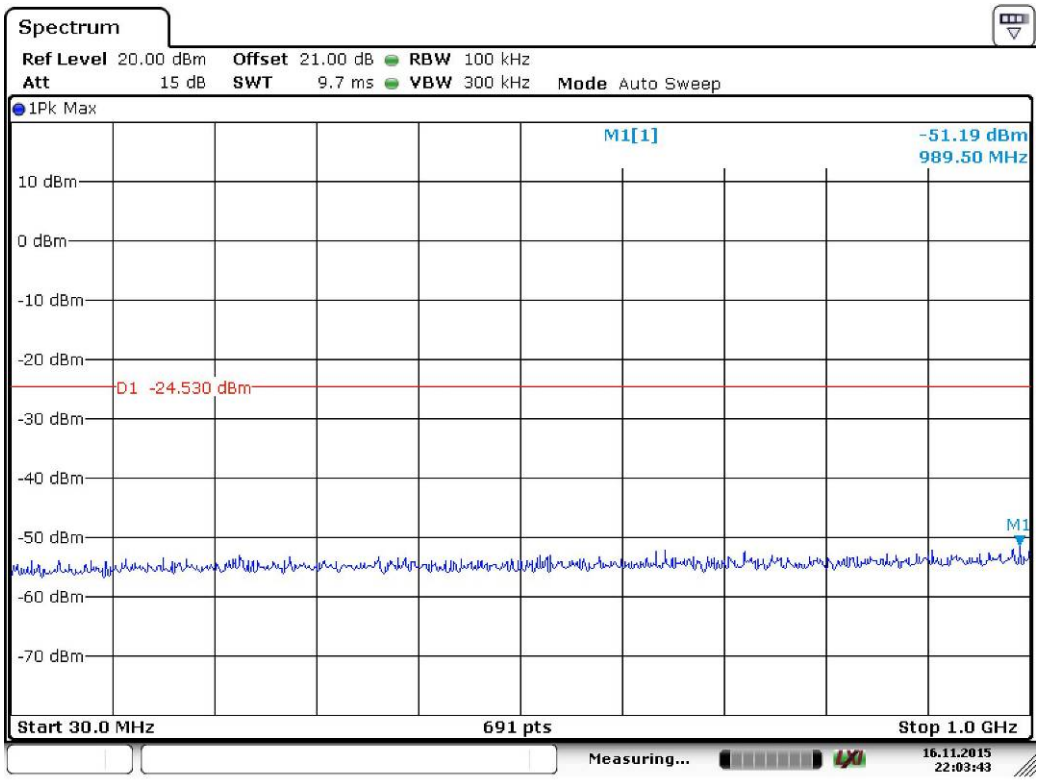
Date: 16.NOV.2015 22:02:28

802.11n20 mode:
Channel 2462MHz
reference level：



Date: 16.NOV.2015 22:03:16

30M-1G



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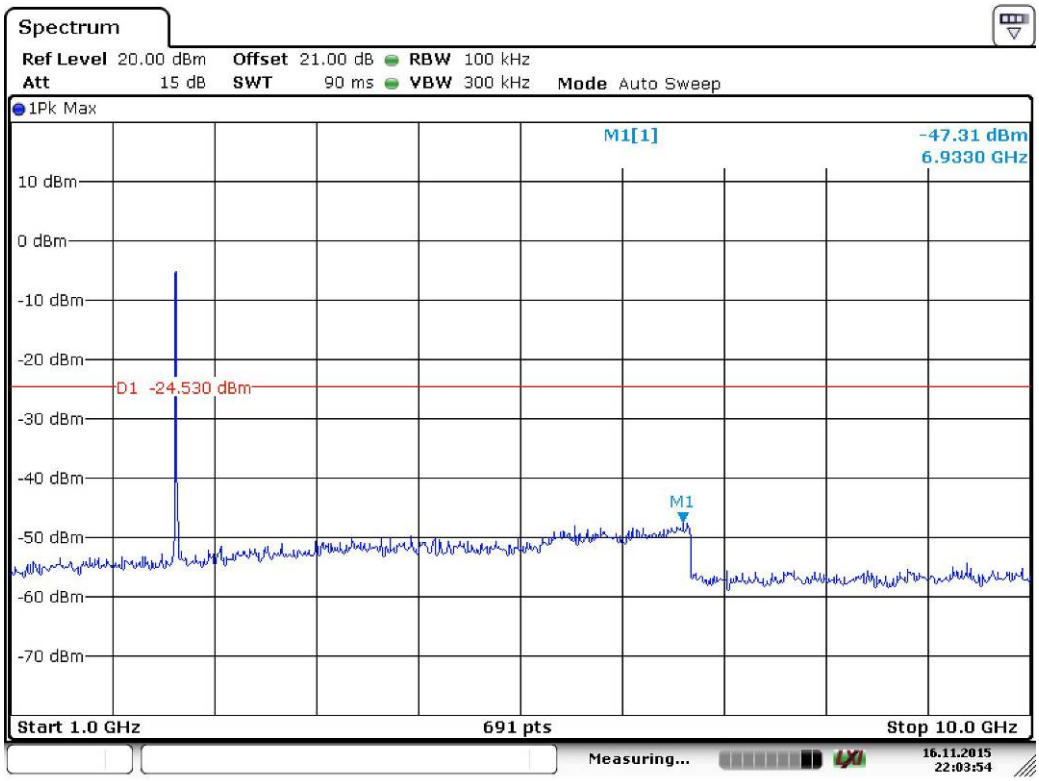
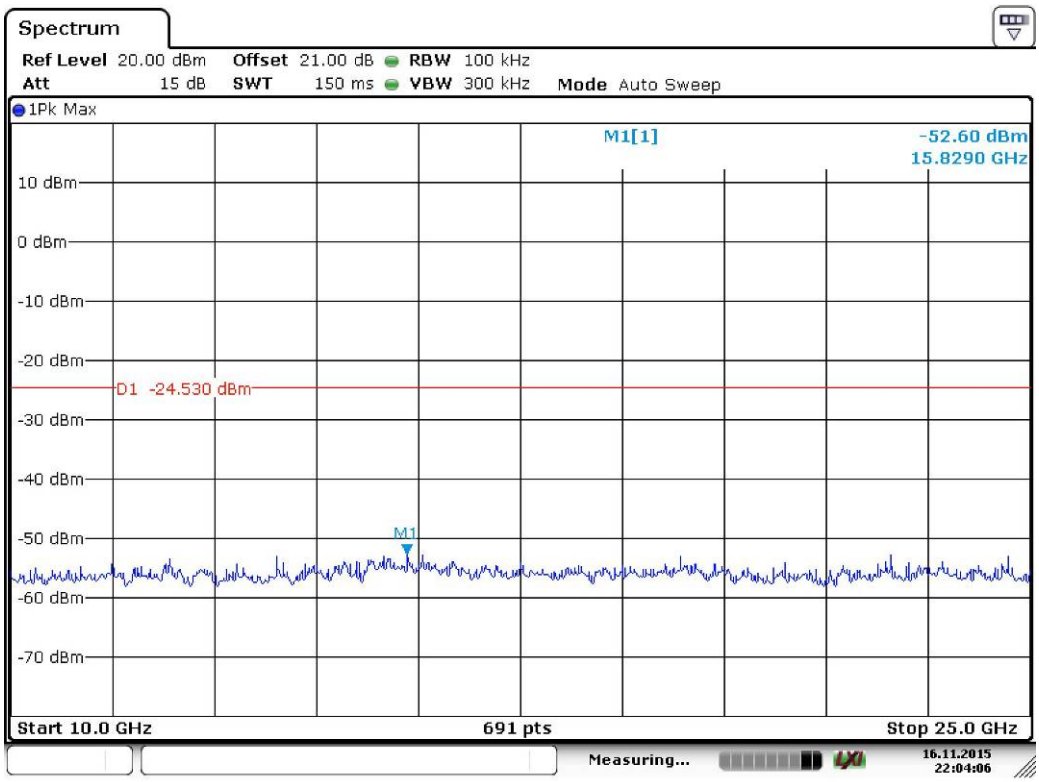
1G-10G



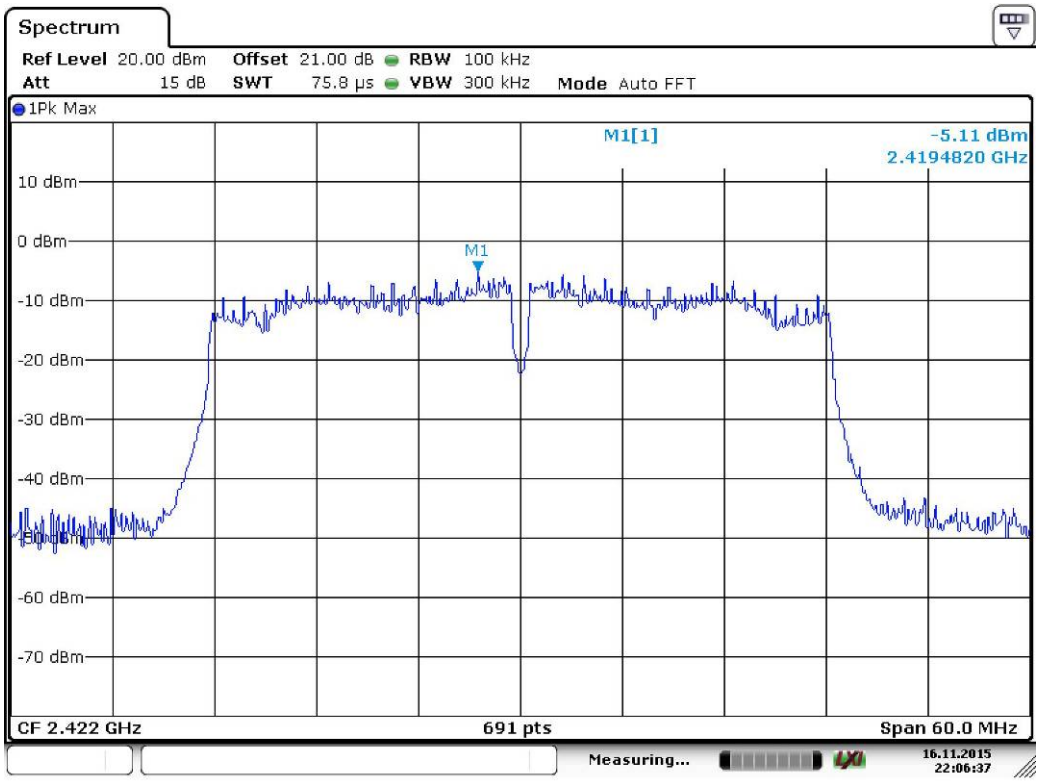
Date: 16.NOV.2015 22:03:55

10G-25G



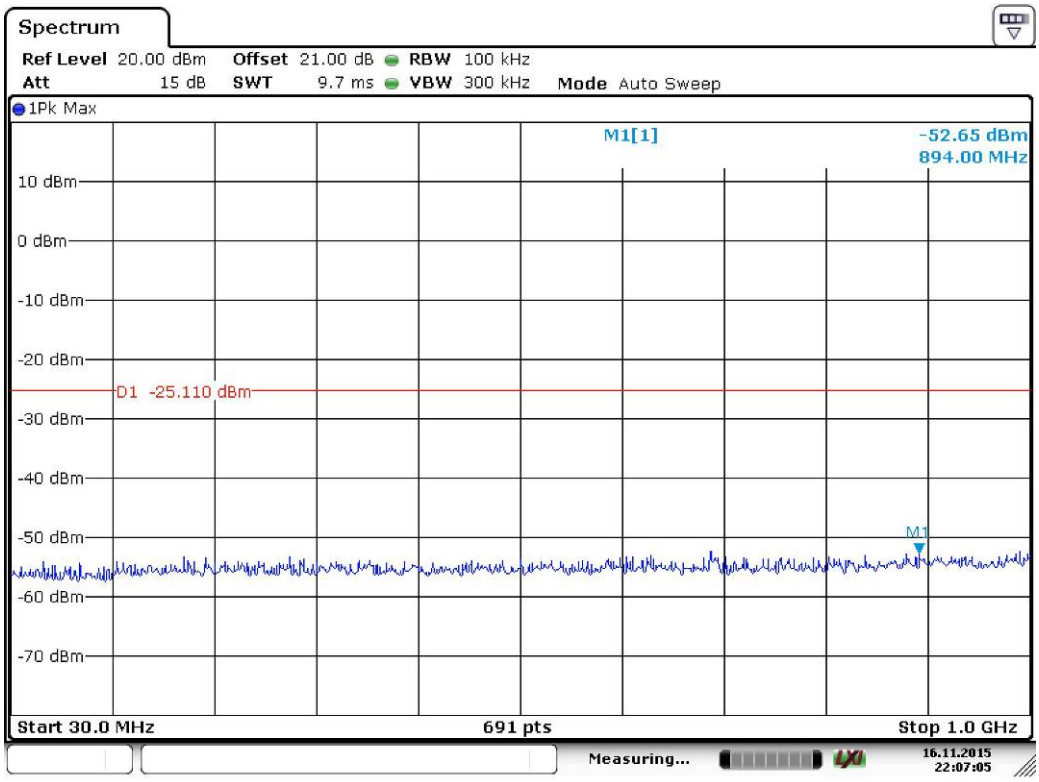
Date: 16.NOV.2015 22:04:05

802.11n40 mode:
Channel 2422MHz
reference level：



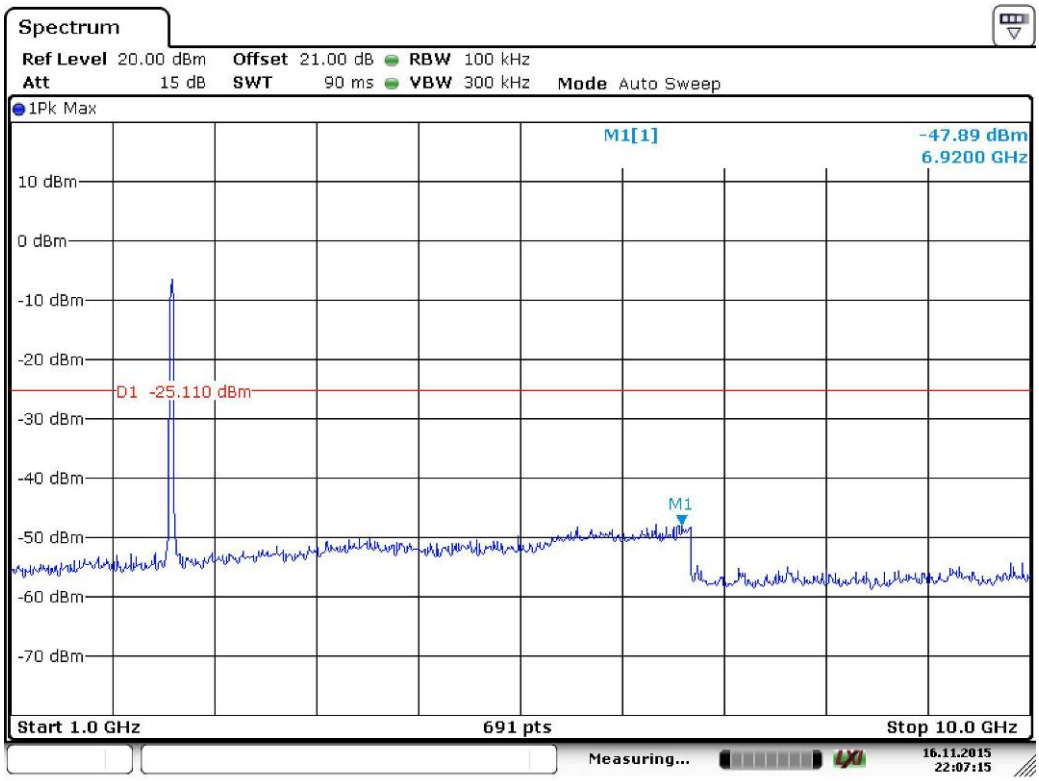
Date: 16.NOV.2015 22:06:36

30M-1G



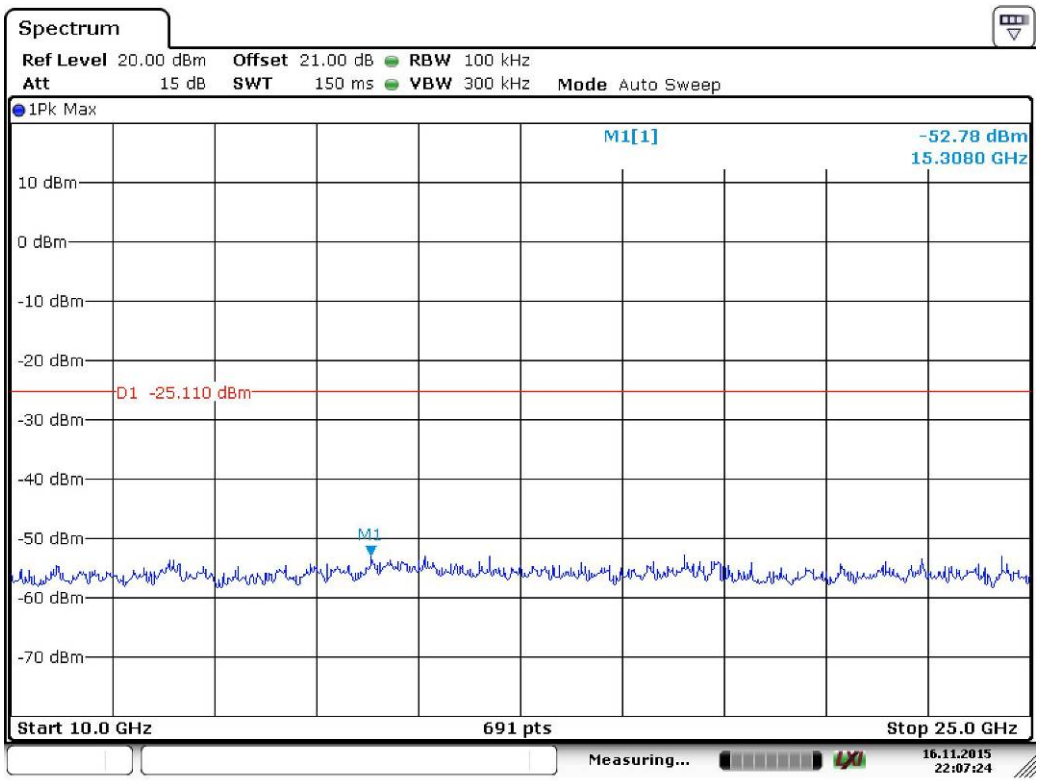
Date: 16.NOV.2015 22:07:05

1G-10G



Date: 16.NOV.2015 22:07:15

10G-25G



Date: 16.NOV.2015 22:07:24