

Test Report No.:

12121201.fcc03

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5.2.5 Radiated Spurious Emissions of Transmitter in restricted bands

RESULT: Pass

Date of testing: 2013-01-28 to 2013-03-22

Frequency range: 4.5-5.15 GHz and 5.35-5.46 GHz

Requirements:

FCC 15.205, FCC 15.209 and FCC 15.247(d) and RSS-Gen

Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a), must comply with the radiated emission limits specified in FCC 15.209(a).

Test procedure:

ANSI C63.10-2009

KDB Publication No.789033 D01 v01r02 9/26/2012 .

KDB Publication No. 644545 D01 and D02.

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Before final measurements of radiated emissions were performed, the EUT was scanned to determine its emission spectrum profile. The physical arrangement of the test system, the associated cabling and the EUT orientation (X, Y, Z) were varied in order to ensure that maximum emission amplitudes were attained.

The spectrum was examined from 4.5-5.15 GHz and 5.35-5.46 GHz. Final radiated emission measurements were made at 3m distance.

At each frequency where a spurious emission was found, the EUT was rotated 360° and the antenna was raised and lowered from 1 to 4m in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations.

The highest emission amplitudes relative to the appropriate limit were recorded in this report. Field strength values of radiated emissions at frequencies not listed in the tables are more than 20 dB below the applicable limit.

Correction factors are incorporated in the spectrum analyzers as an automated function. Refer to section 4.2 for the power settings and modes.

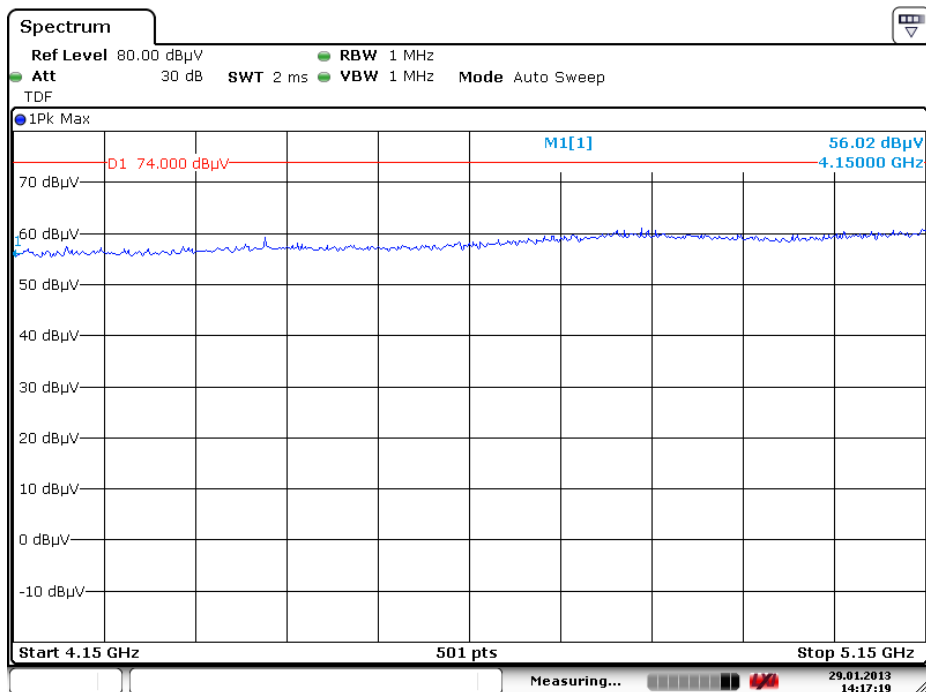
Correction factors includes: antenna factor, cable loss and pre-amplifier gain.

The plots on the following pages show the limit line D1 (74 dBμV/m for Peak and 54 dBμV/m for Average values). Plots provided are of the highest value measured on either Antenna 1, Antenna 2 and Antenna 1+2.

Test Report No.:

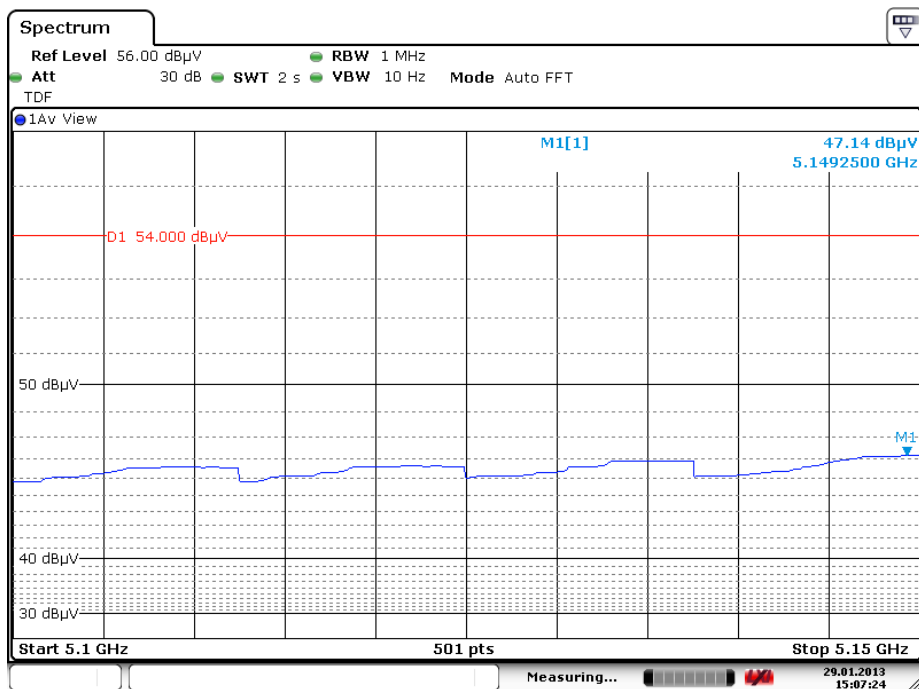
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Date: 29.JAN.2013 14:17:19

Emissions in restricted band 4.5-5.15 GHz, Peak value, 6Mb OFDM, 5180 MHz
valid for Antenna 1, Antenna 2



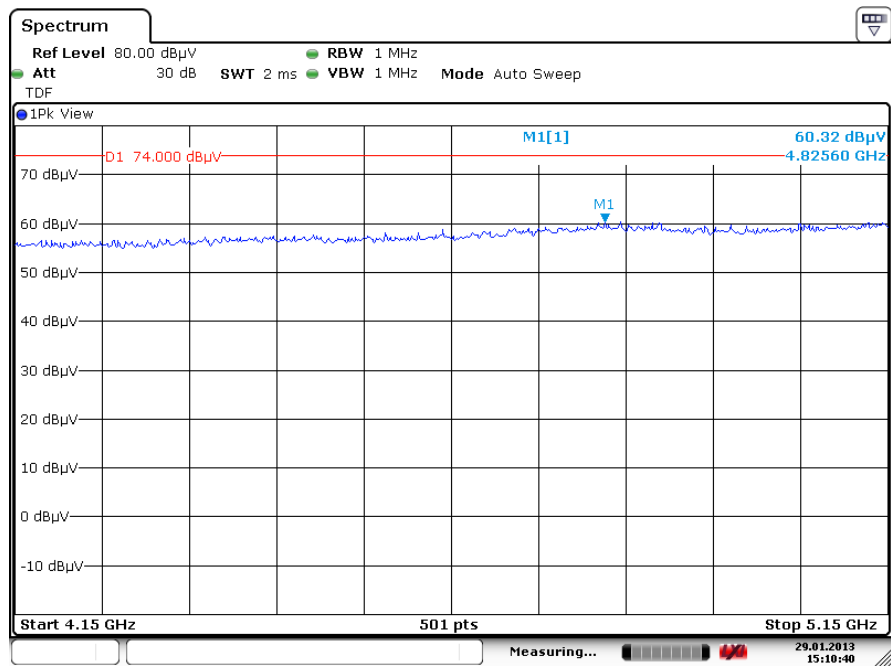
Date: 29.JAN.2013 15:07:24

Emissions in restricted band 4.5-5.15 GHz, Average value, 6Mb OFDM, 5180 MHz
valid for Antenna 1, Antenna 2

Test Report No.:

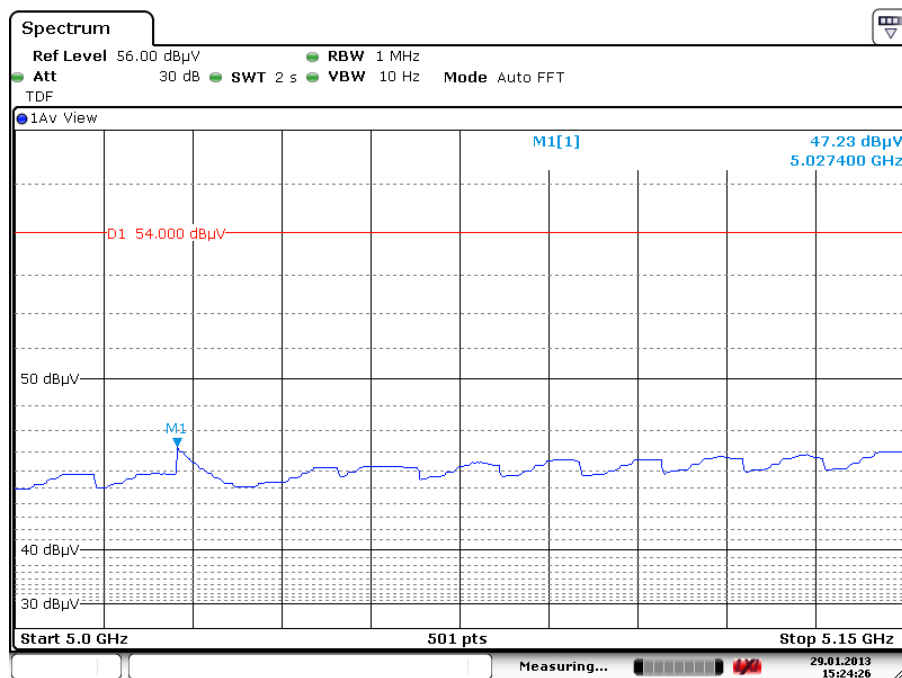
12121201.fcc03

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Date: 29.JAN.2013 15:10:40

Emissions in restricted band 4.5-5.15 GHz, Peak Value, 6Mb OFDM, 5180 MHz
valid for Antenna 2



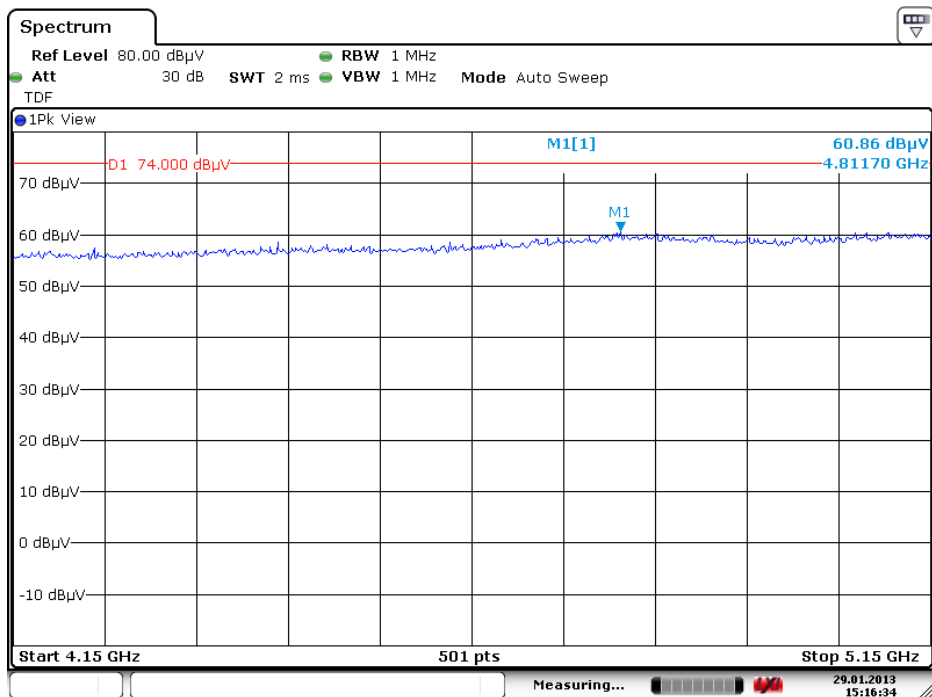
Date: 29.JAN.2013 15:24:26

Emissions in restricted band 4.5-5.15 GHz, Average value, 6Mb OFDM, 5180 MHz
valid for Antenna 2

Test Report No.:

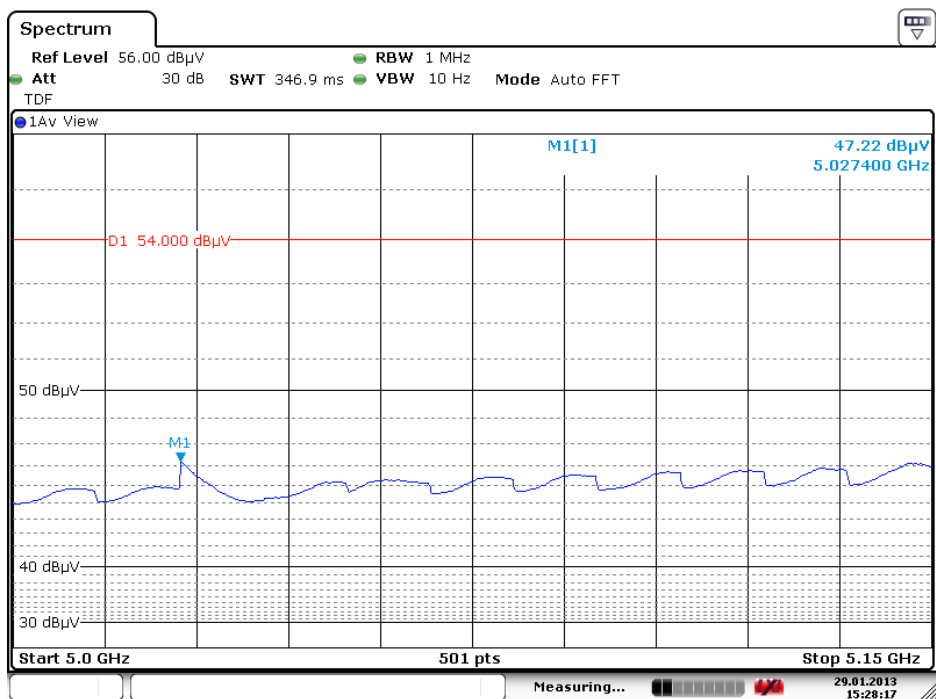
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Date: 29.JAN.2013 15:16:35

Emissions in restricted band 4.5-5.15 GHz, Peak value HT4 20 MHz, 5180 MHz
valid for Antenna 1, Antenna 2



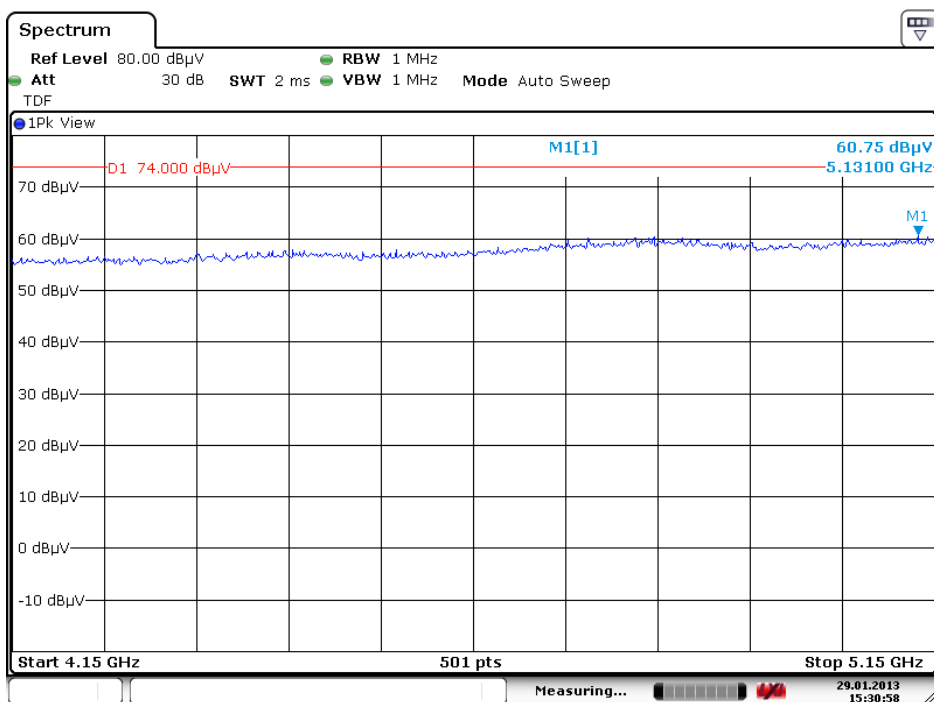
Date: 29.JAN.2013 15:28:17

Emissions in restricted band 4.5-5.15 GHz, Average value HT4 20 MHz, 5180 MHz
valid for Antenna 1, Antenna 2

Test Report No.:

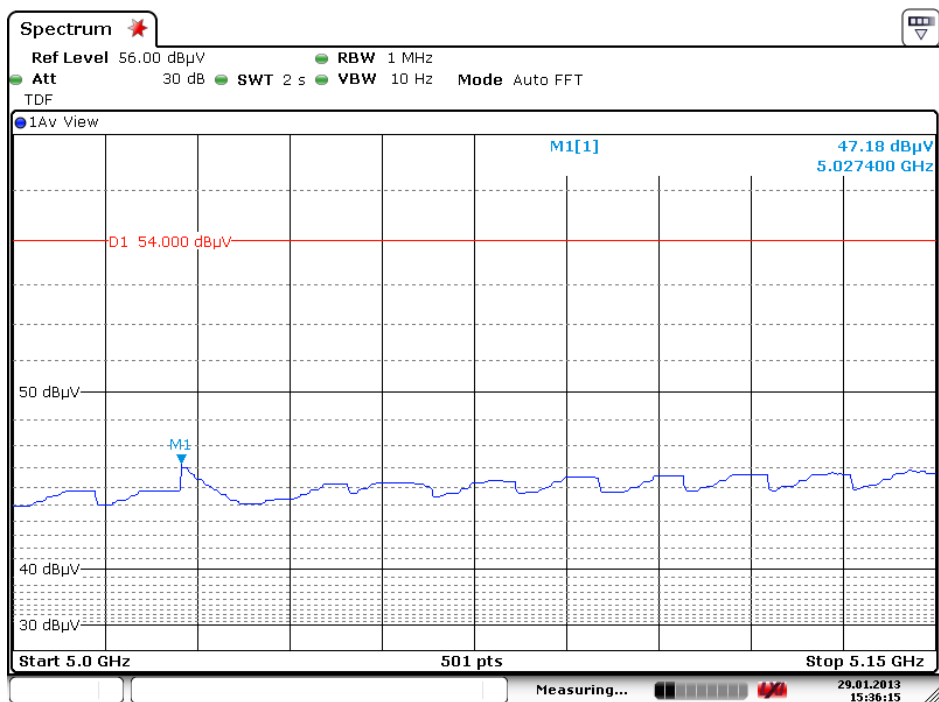
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Date: 29.JAN.2013 15:30:58

Emissions in restricted band 4.5-5.15 GHz, Peak value HT8 20 MHz, 5180 MHz
valid for Antenna 1 + Antenna 2



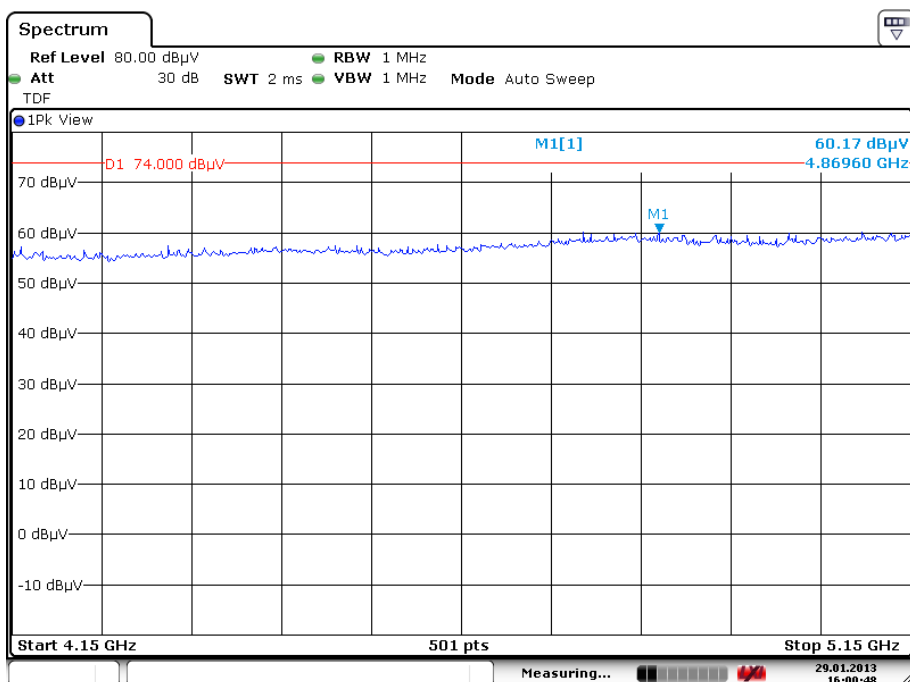
Date: 29.JAN.2013 15:36:15

Emissions in restricted band 4.5-5.15 GHz, Average value HT8 20 MHz, 5180 MHz
valid for Antenna 1 + Antenna 2

Test Report No.:

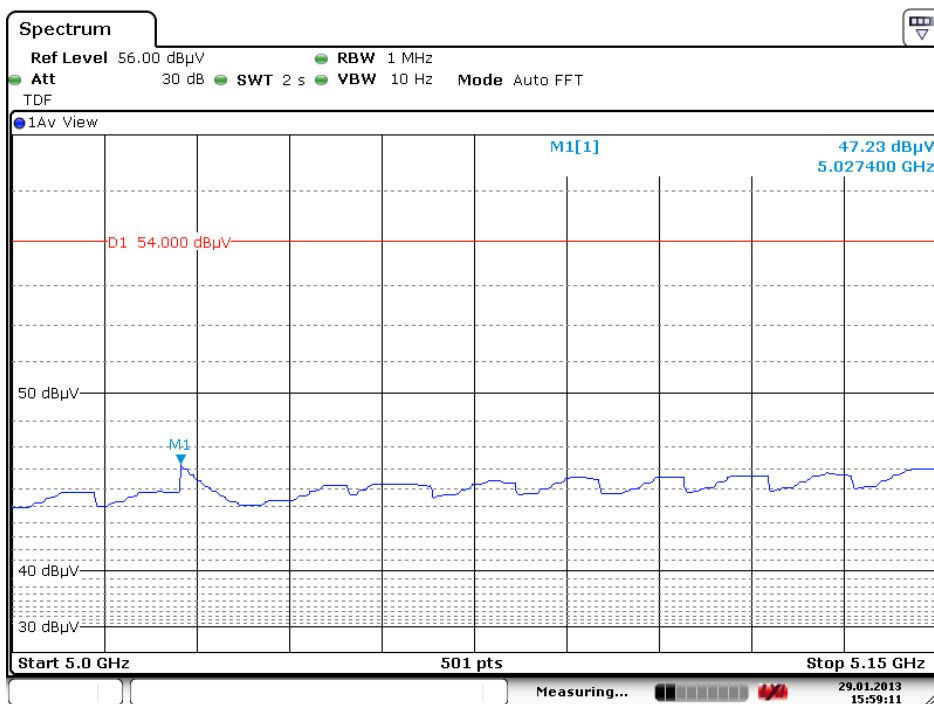
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Date: 29.JAN.2013 16:00:48

Emissions in restricted band 4.5-5.15 GHz, Peak value HT4 40 MHz, 5190 MHz
valid for Antenna 1, Antenna 2



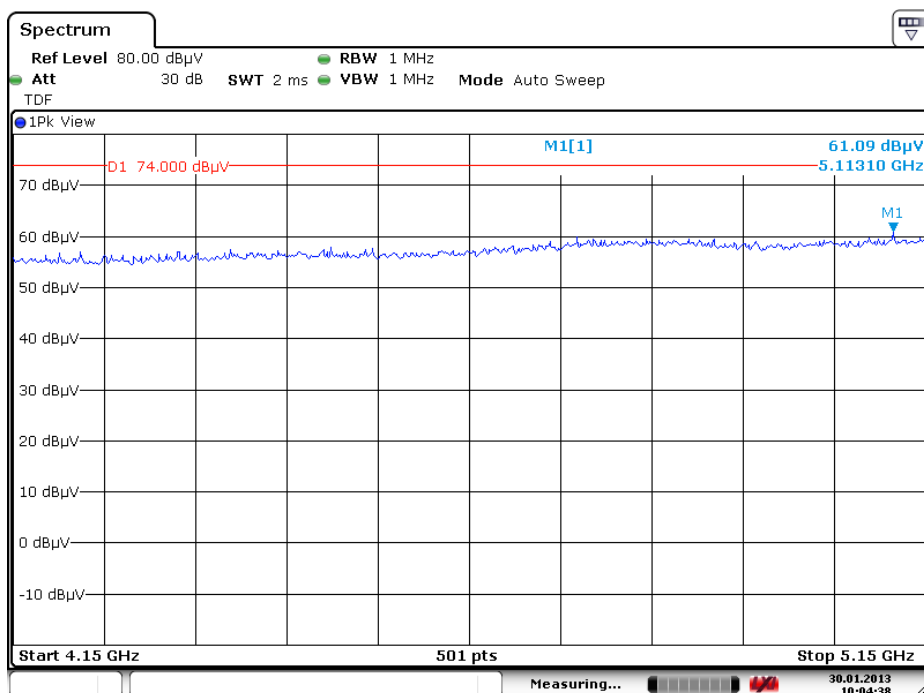
Date: 29.JAN.2013 15:59:11

Emissions in restricted band 4.5-5.15 GHz, Average value HT4 40 MHz, 5190 MHz
valid for Antenna 1, Antenna 2

Test Report No.:

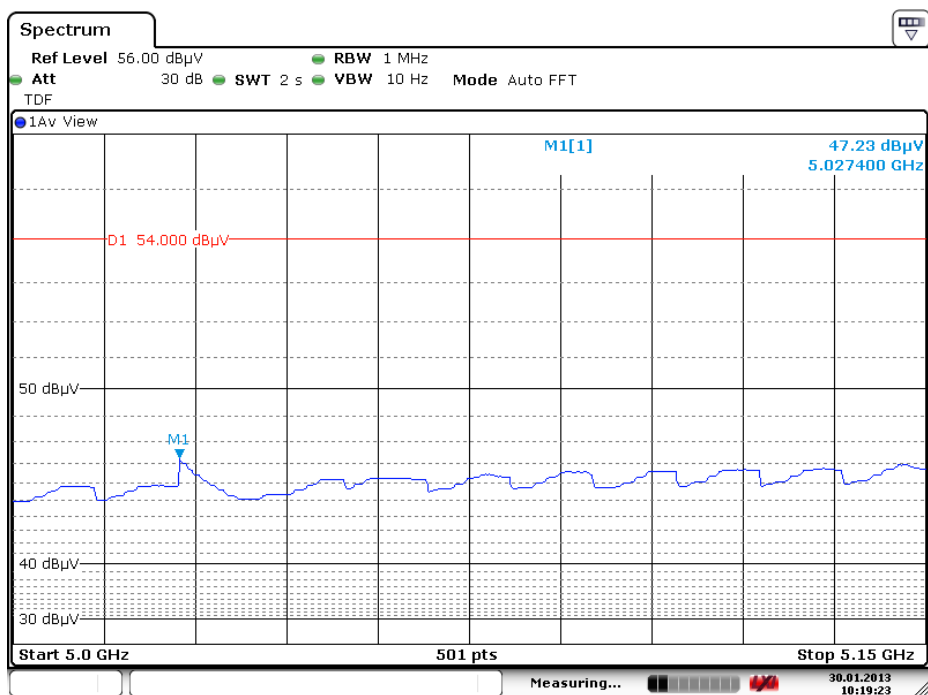
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Date: 30.JAN.2013 10:04:38

Emissions in restricted band 4.5-5.15 GHz, Peak value HT8 40 MHz, 5190 MHz
valid for Antenna 1 + Antenna 2



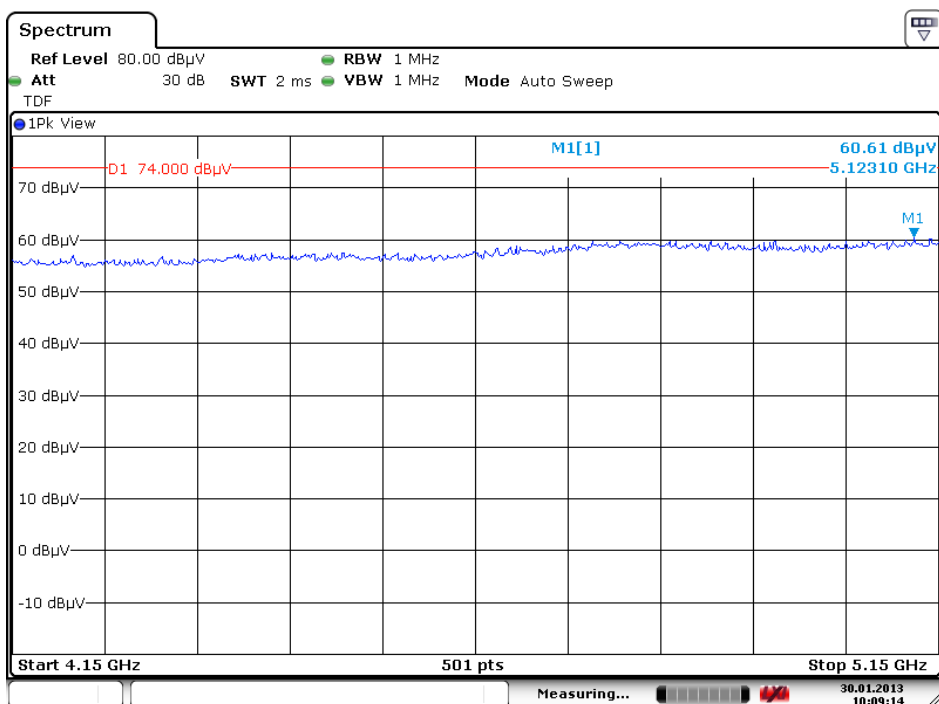
Date: 30.JAN.2013 10:19:22

Emissions in restricted band 4.5-5.15 GHz, Average value HT8 40 MHz, 5190 MHz
valid for Antenna 1 + Antenna 2

Test Report No.:

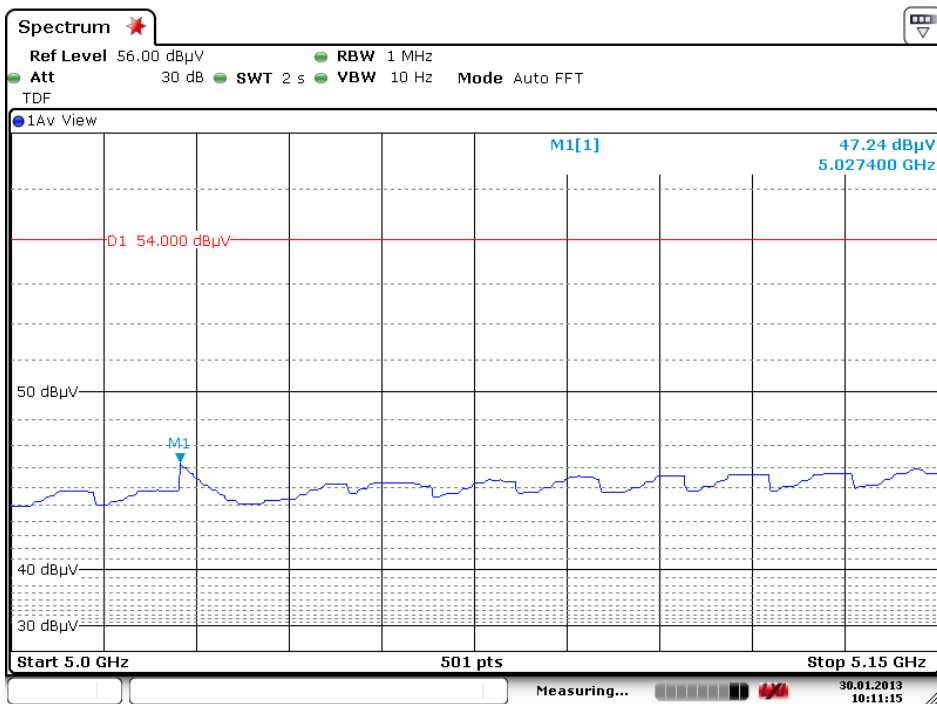
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Date: 30.JAN.2013 10:09:14

Emissions in restricted band 4.5-5.15 GHz, Peak value VHT6 60 MHz, 5210 MHz
valid for Antenna 1, Antenna 2 and Antenna 1 + Antenna 2



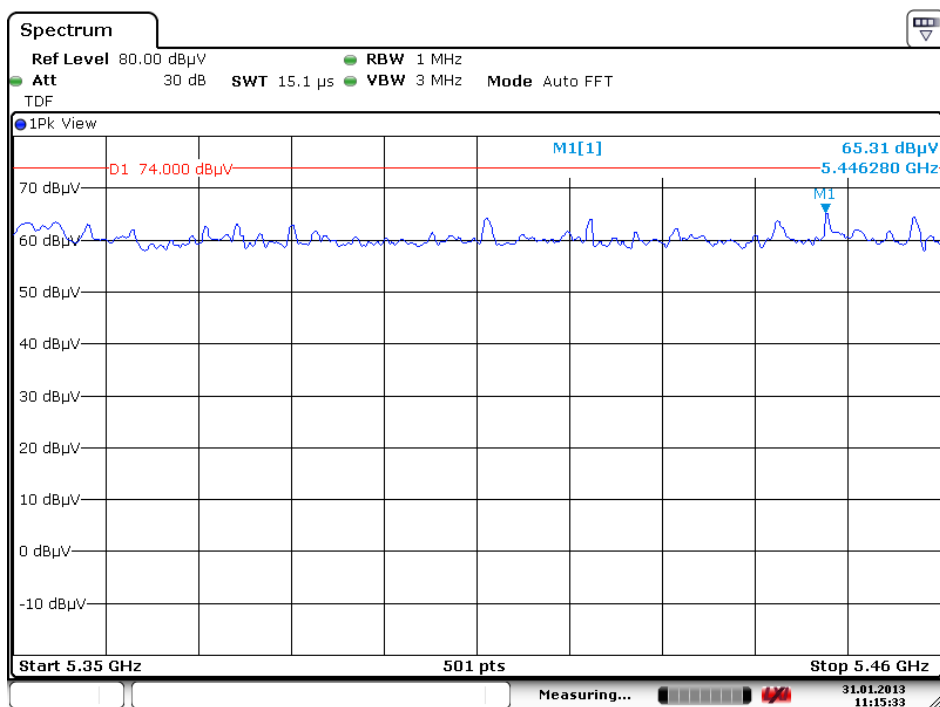
Date: 30.JAN.2013 10:11:15

Emissions in restricted band 4.5-5.15 GHz, Average value VHT6 80 MHz, 5210 MHz
valid for Antenna 1, Antenna 2 and Antenna 1 + Antenna 2

Test Report No.:

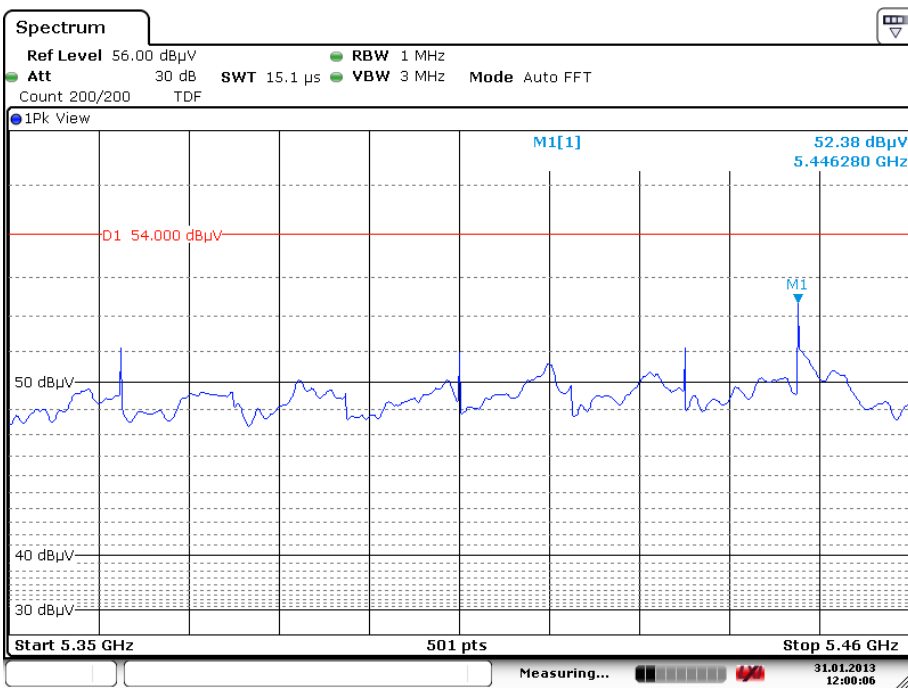
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Date: 31.JAN.2013 11:15:33

Emissions in restricted band 5.35-5.46 GHz, Peak value, 6Mb OFDM, 5240 MHz
valid for Antenna 1



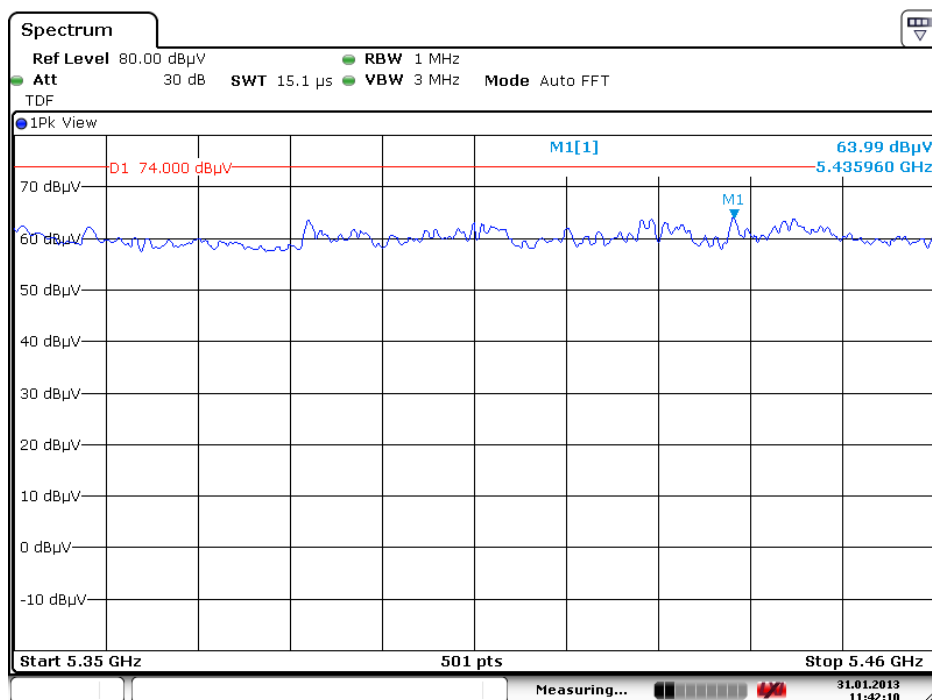
Date: 31.JAN.2013 12:00:05

Emissions in restricted band 5.35-5.46 GHz, Average value, 6Mb OFDM, 5240 MHz
valid for Antenna 1

Test Report No.:

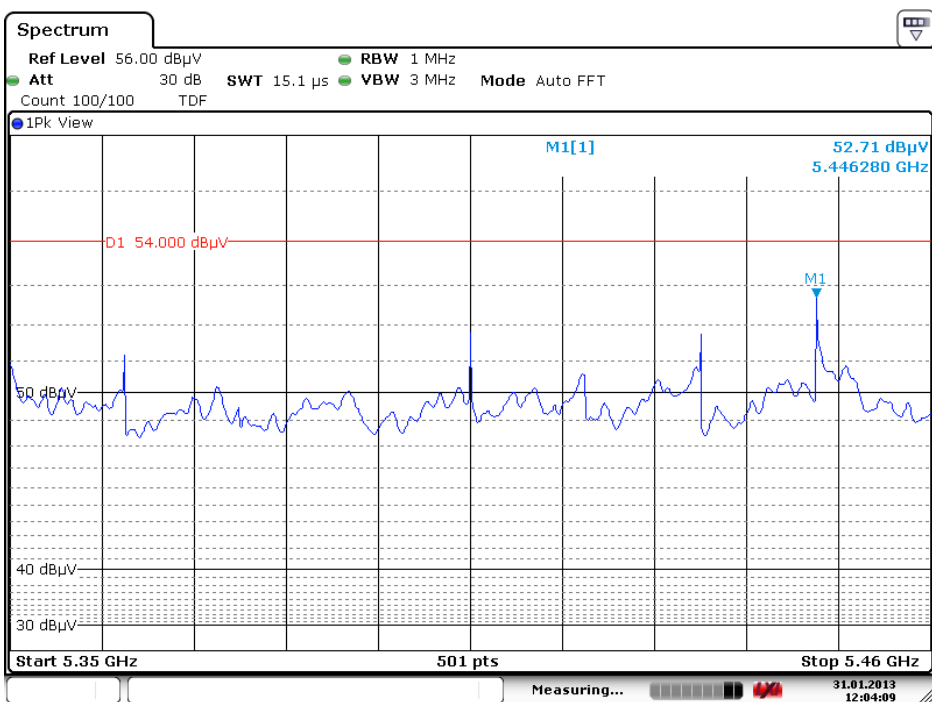
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Date: 31.JAN.2013 11:42:09

Emissions in restricted band 5.35-5.46 GHz, Peak value, 6Mb OFDM, 5240 MHz valid for Antenna 2



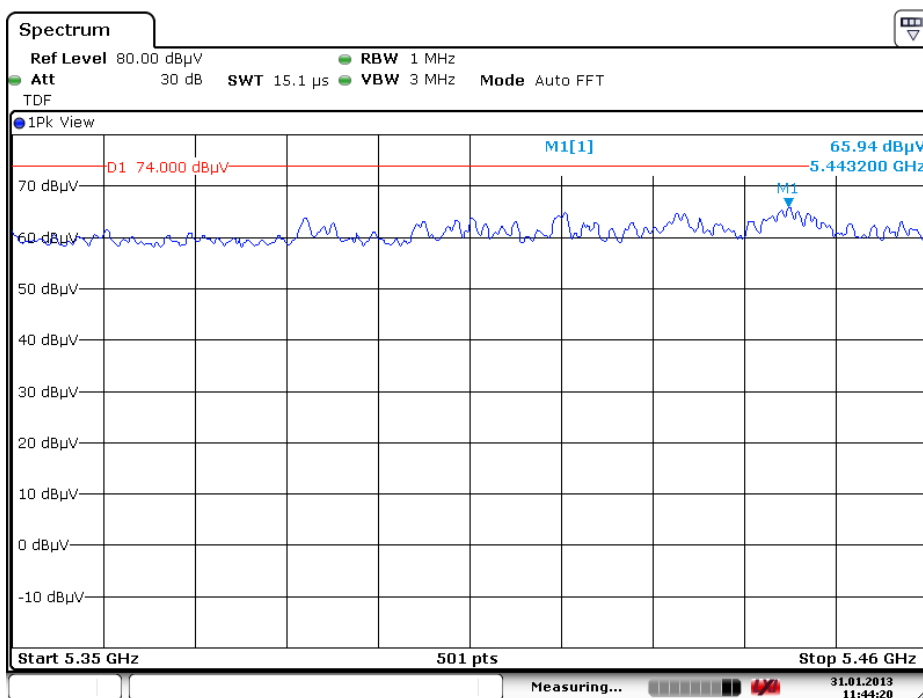
Date: 31.JAN.2013 12:04:09

Emissions in restricted band 5.35-5.46 GHz, Average value, 6Mb OFDM, 5240 MHz valid for Antenna 2

Test Report No.:

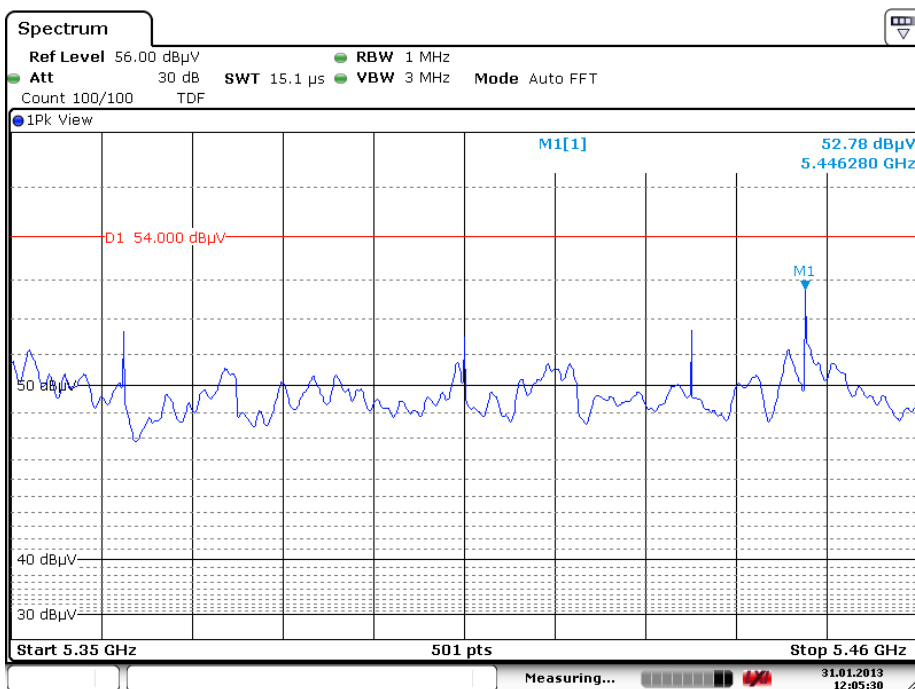
12121201.fcc03

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Date: 31.JAN.2013 11:44:20

Emissions in restricted band 5.35-5.46 GHz, Peak value, HT4 20 MHz, 5240 MHz
valid for Antenna 1, Antenna 2



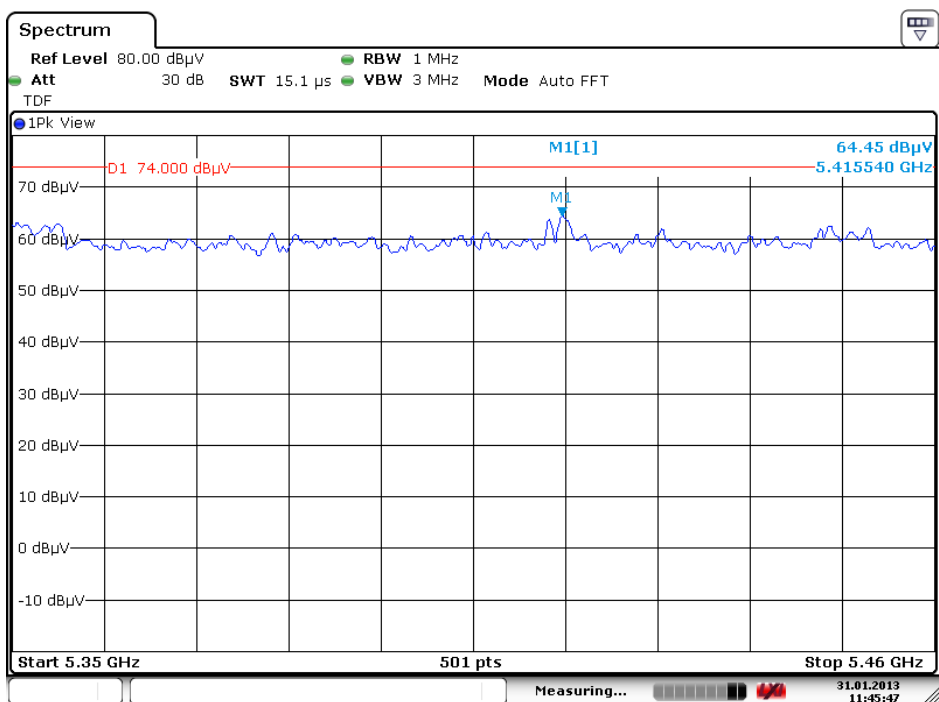
Date: 31.JAN.2013 12:05:30

Emissions in restricted band 5.35-5.46 GHz, Average value, HT4 20 MHz, 5240 MHz
valid for Antenna 1, Antenna 2

Test Report No.:

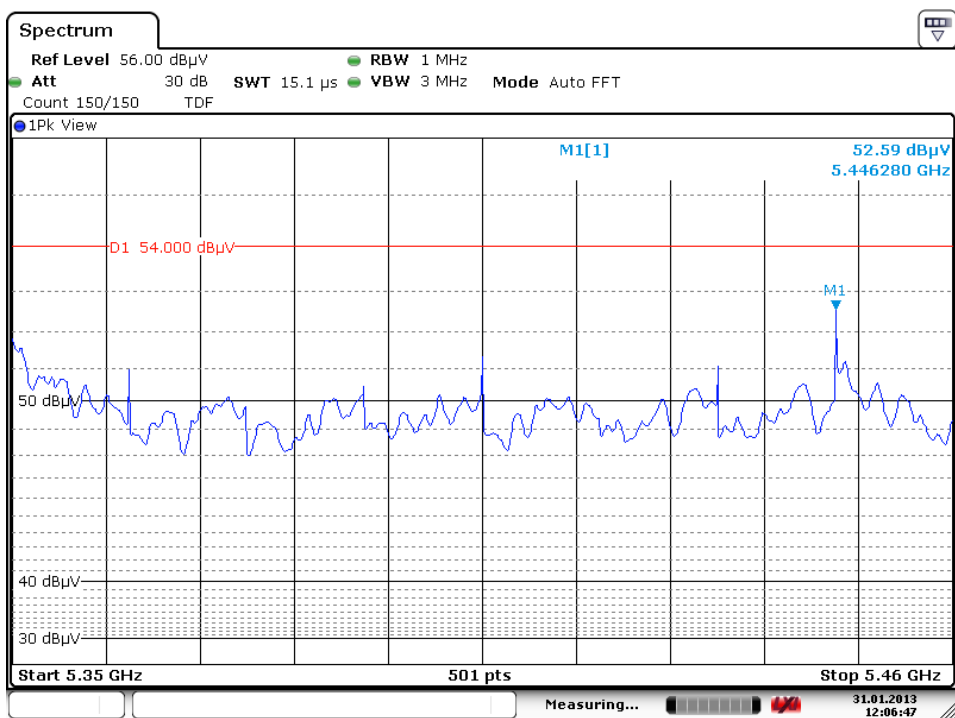
12121201.fcc03

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Date: 31.JAN.2013 11:45:47

Emissions in restricted band 5.35-5.46 GHz, Peak value, HT8 20 MHz, 5240 MHz
valid for Antenna 1 + Antenna 2



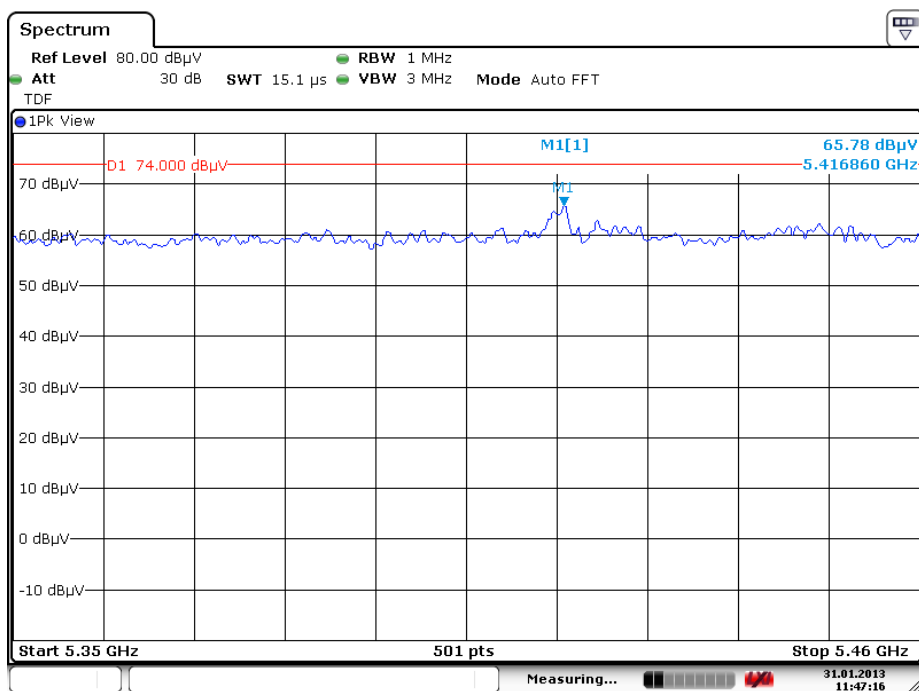
Date: 31.JAN.2013 12:06:47

Emissions in restricted band 5.35-5.46 GHz, Average value, HT8 20 MHz, 5240 MHz
valid for Antenna 1 + Antenna 2

Test Report No.:

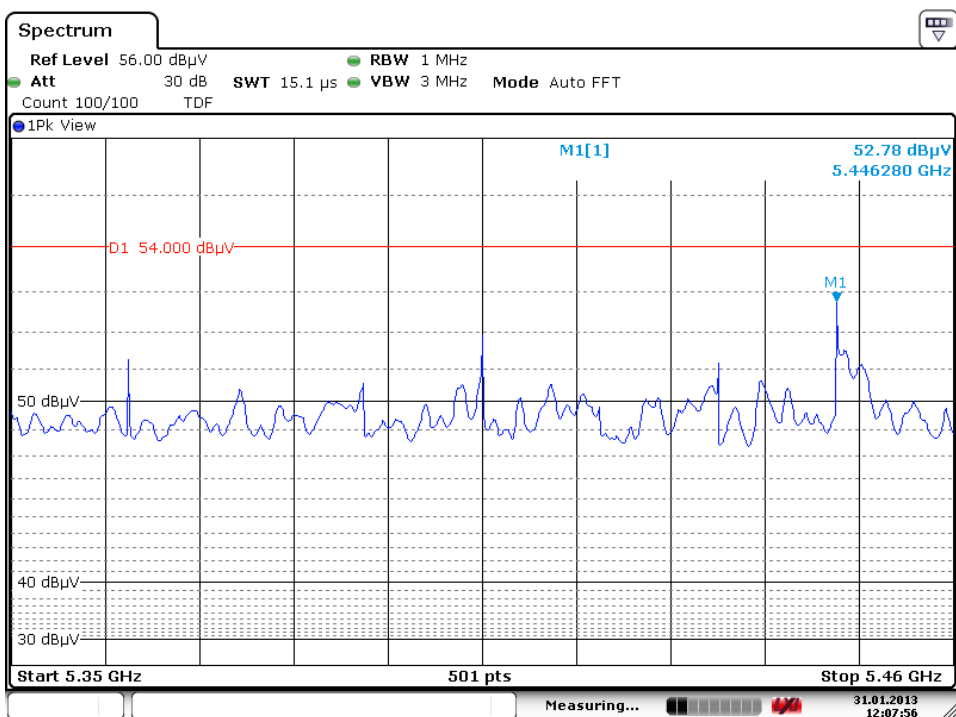
12121201.fcc03

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Date: 31.JAN.2013 11:47:16

Emissions in restricted band 5.35-5.46 GHz, Peak value, HT4 40 MHz, 5230 MHz
valid for Antenna 1, Antenna 2



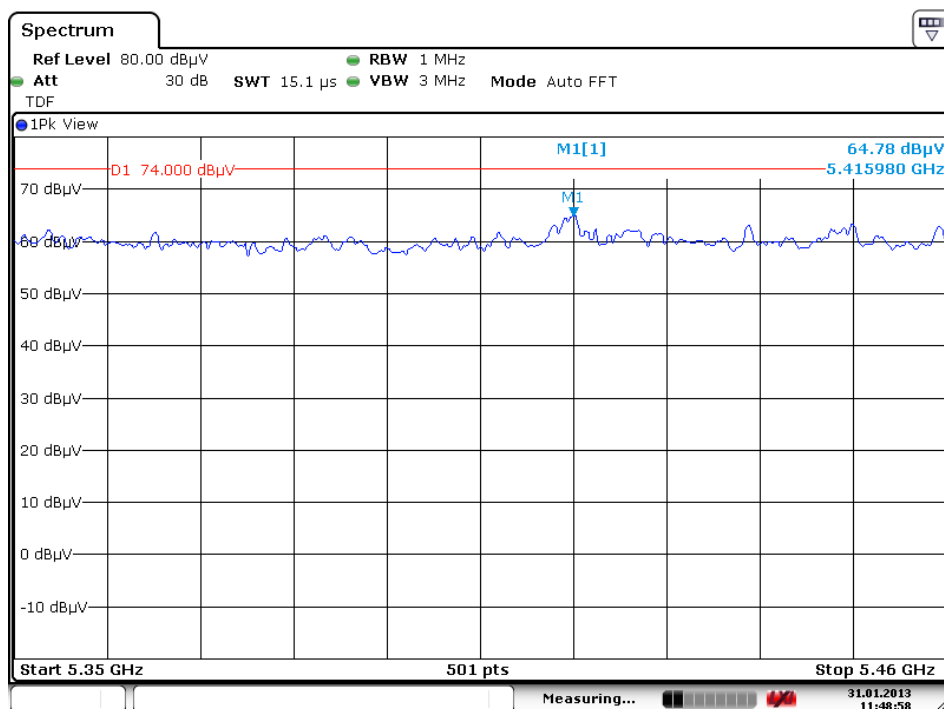
Date: 31.JAN.2013 12:07:56

Emissions in restricted band 5.35-5.46 GHz, Average value, HT4 40 MHz, 5230 MHz
valid for Antenna 1, Antenna 2

Test Report No.:

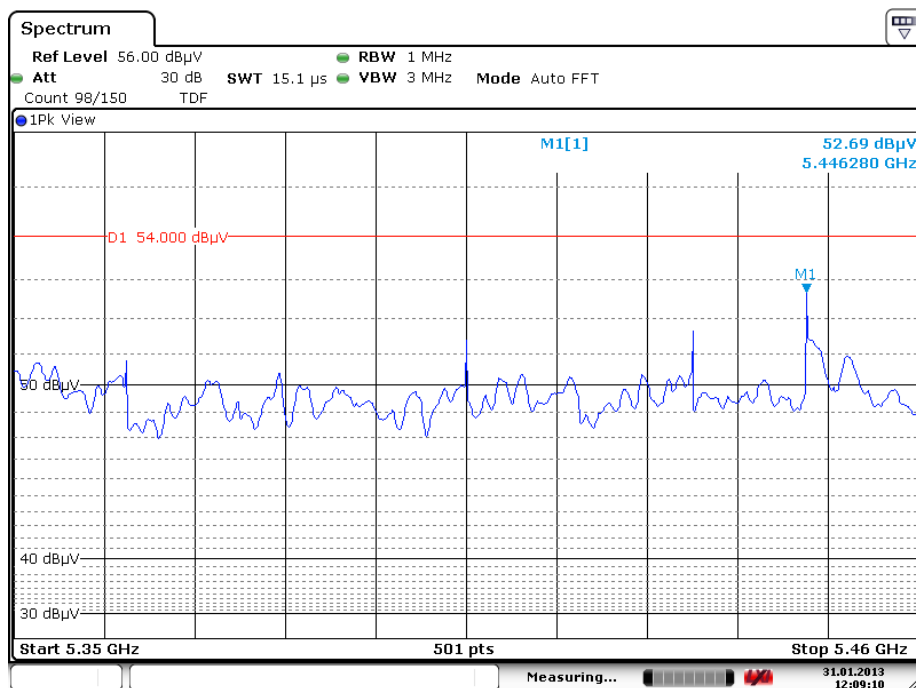
12121201.fcc03

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Date: 31.JAN.2013 11:48:58

Emissions in restricted band 5.35-5.46 GHz, Peak value, HT8 40 MHz, 5230 MHz
valid for Antenna 1 + Antenna 2



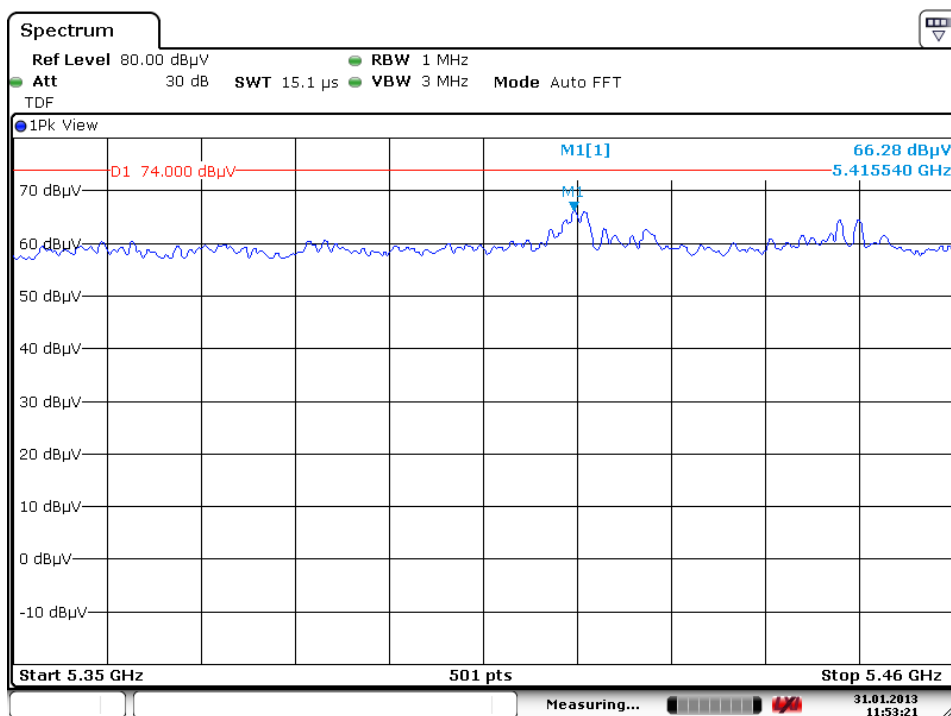
Date: 31.JAN.2013 12:09:10

Emissions in restricted band 5.35-5.46 GHz, Average value, HT8 40 MHz, 5230 MHz
valid for Antenna 1 + Antenna 2

Test Report No.:

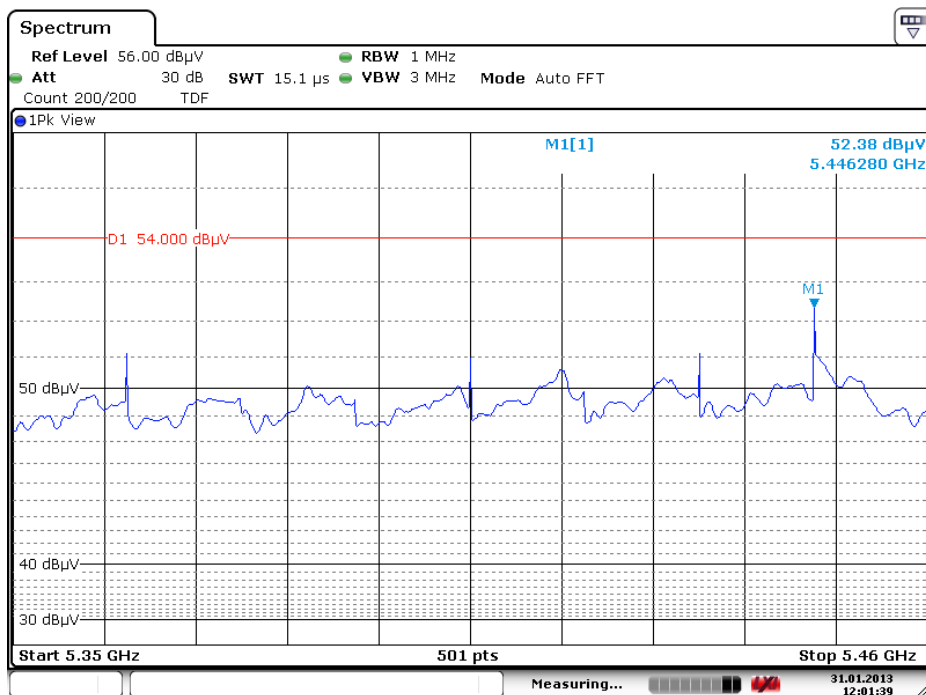
12121201.fcc03

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Date: 31.JAN.2013 11:53:21

Emissions in restricted band 5.35-5.46 GHz, Peak value, VHT6 80 MHz, 5210 MHz
valid for Antenna 1, Antenna 2 and Antenna 1 + Antenna 2



Date: 31.JAN.2013 12:01:39

Emissions in restricted band 5.35-5.46 GHz, Average value, VHT6 80 MHz, 5210 MHz
valid for Antenna 1, Antenna 2 and Antenna 1 + Antenna 2

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5.2.6 Frequency Stability

RESULT: PASS

Date of testing:

2013-01-11 / 2013-01-15

Requirements:

FCC 15.407(6)(g)

Test procedure:

The EUT was placed inside the climat chamber and a range of temperature and supply voltages according to table on the next page was set. The climat chamber was stabilized for at least 30 minutes for every temperature required. The supply voltage was then adjusted on the EUT from 85% to 115%. The spectrum analyzer and Power supply regulator were placed outside of the climat chamber. The EUT's antenna port 1 was connected to the spectrum analyzer.

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Test results Frequency stability

Operation temperature range according to the EUT's User Guide is 0° - 80°C.

Tested in operation mode: 6Mb OFDM, Antenna 1 – 5180 MHz

Temperature (°C)	Power supply (Vac)	Frequency (MHz)	Deviation from reference (ppm)
21	120	5179.985	-2.9
0	102	5180.017	3.3
0	138	5180.017	3.3
80	102	5179.997	-0.6
80	138	5179.997	-0.6

Measurement uncertainty: ± 257 Hz

The reference is the channels frequency of 5180.000 MHz

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5.3 AC Power Line Conducted Measurements

5.3.1 AC Power Line Conducted Emission of Transmitter

AC power line conducted emissions are included in the Part 15B/ICES-003 testreport.
Refer to documentnumber 13e_PD97260NG_FCC-15B-ICES003.pdf

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Test results for 5.25 GHz – 5.35 GHz band

6. Test Results

6.1 Technical Requirements

6.1.1 Voltage Requirements

RESULT: Pass

Requirements:

FCC 15.31(e)

For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

Verdict:

The EUT has an internal voltage regulator to supply the RF circuit. Hence it complies with the power supply requirements.

6.1.2 Antenna Requirements

RESULT: Pass

Requirements:

FCC 15.203 and IC RSS-Gen section 7.1.2

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.

Verdict:

The EUT has two non standard PIFA antenna connectors which complies with the requirements.

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6.2 Conducted Measurements at Antenna Port

6.2.1 Maximum Conducted Output Power and Peak Power Spectral Density

RESULT: Pass

Date of testing:

2013-03-23

Requirements:

FCC 15.407(a)(1)

For the 5.25 MHz to 5.35 MHz band, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11dBm +10logB, where B is the 26 dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11dBm in any 1 MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RSS-210 A9.2 (1)

The maximum conducted output power shall not exceed 250 mW (24 dBm) or $11 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

Within the emission bandwidth, when the peak spectral density per MHz over any continuous transmission exceeds the average ($10 \log_{10} B$) value by more than 3 dB, the permissible power spectral density shall be reduced by the excess amount.

Test procedure:

ANSI C63.10-2009

KDB Publication No.789033 D01 v01r02 9/26/2012 and KDB Publication No. 662911 D01 Multiple Transmitter Output v01r02.

KDB Publication No. 644545 D01 and D02.

The Maximum Conducted Output Power was measured using Method SA-2 in KDB 789033. The maximum output power (conducted) was measured at the antenna connector with a spectrum analyzer. The final measurement takes into account the loss generated by all the involved cables. An automated system corrects for duty cycle and cable losses.

The data rates of 6Mb/s for 802.11a, HT4 (SISO)/HT8 (MIMO) for 802.11n20/ac20 and n40/ac40, and VHT6 (SISO)/(MIMO) for 802.11 ac80 were selected based on preliminary testing that identified those rates corresponding to the worst cases for output power and spurious levels at the band edges.

Notes: $\text{mW} = 10^{(\text{dBm}/10)}$
 $\text{dBm} = 10 \times \log(\text{mW})$

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The peak power spectral density (PPSD) was measured using the method according to point E) (Method SA-1) of Guidance 789033 D01.

For MIMO mode, the *Measure and add $10 \log(NANT)$ dB*, (where *NANT* is the number of outputs) technique was used according to the Guidance for Emission Testing of Transmitters with Multiple Outputs in the Same Band 662911 D01 Multiple Transmitter Output v01r02 dated 9/26/2012.

With this technique, spectrum measurements are performed at each output of the device, and the quantity *$10 \log(NANT)$ dB* is added to each spectrum value before comparing to the emission limit.

Number of outputs = 2. The e.i.r.p. levels are calculated by adding the declared maximum antenna gain (5.0 dBi). For MIMO mode, the Guidance on directional Gain calculations according to the Guidance for Emission Testing of Transmitters with Multiple Outputs in the Same Band 662911 D01 Multiple Transmitter Output v01r02 dated 9/26/2012 was used. The number of transmit antennas (*NANT*) are 2 and the number of spatial streams (*Nss*) are 2 and therefore the Array Gain is 0 dB.

plots : Peak power plots,

Plots of the Maximum Conducted Output Power and Peak Power spectral Density are provided on the next pages, correction factors included in the reading.

Directional gain of the antennas used was 5.0 dBi so no reduction in maximum conducted output power and the peak power spectral density is required.

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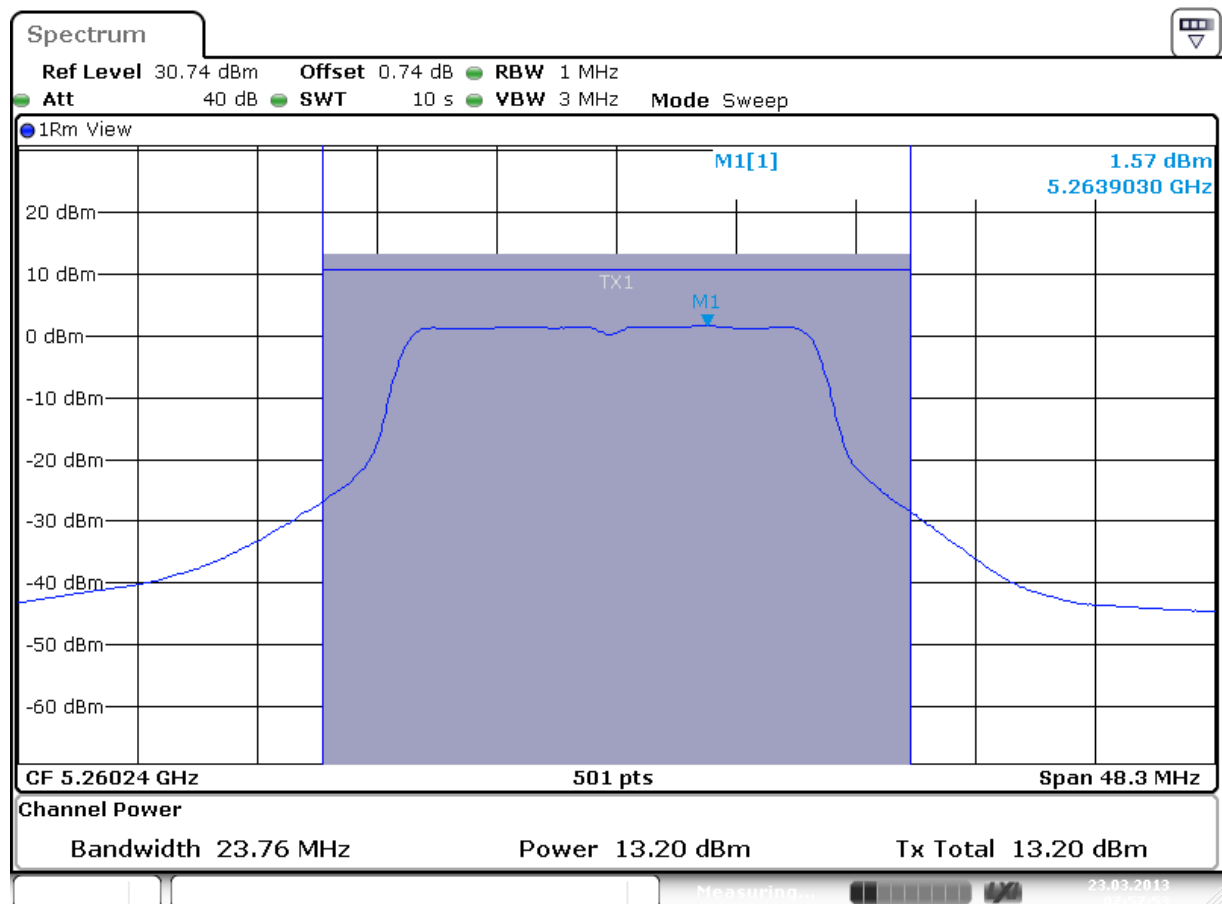
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Maximum Conducted Output Power and Peak Power Spectral Density

Operation mode: 6Mb OFDM, Antenna 1

Frequency [MHz]	Maximum conducted output power [dBm]	Maximum conducted output power e.i.r.p. [dBm]	PPSD/MHz [dBm]	PPSD/MHz e.i.r.p. [dBm]	Plot number
5260	13.2	18.2	1.6	6.6	A
5300	15.6	20.6	3.9	8.9	B
5320	13.2	18.2	1.5	6.5	C

Result: Pass



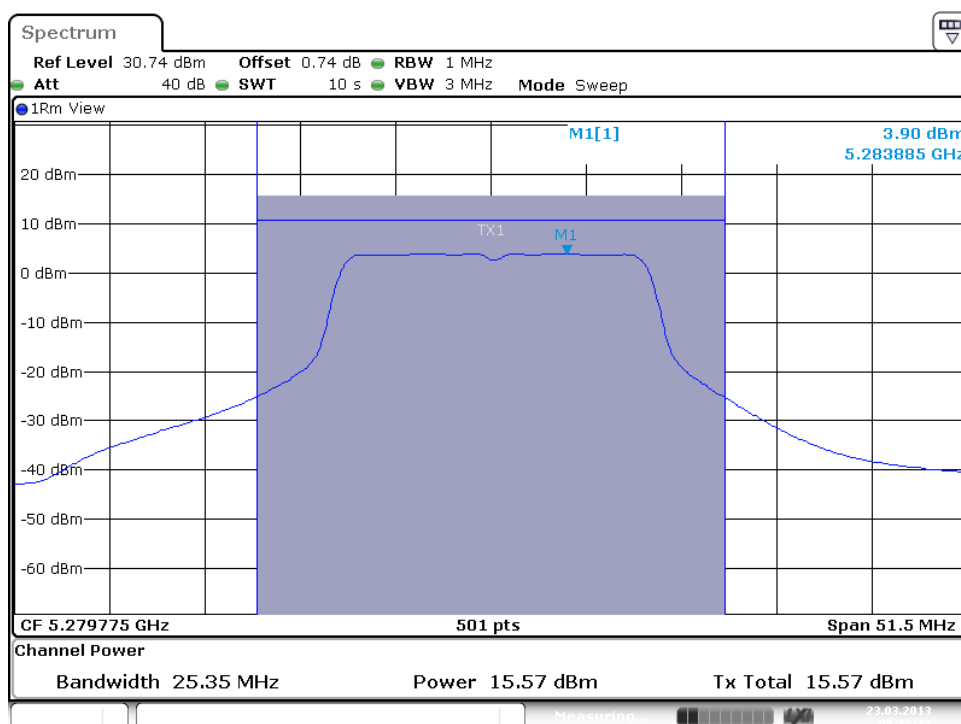
Date: 23.MAR.2013 07:57:53

Plot A

Test Report No.:

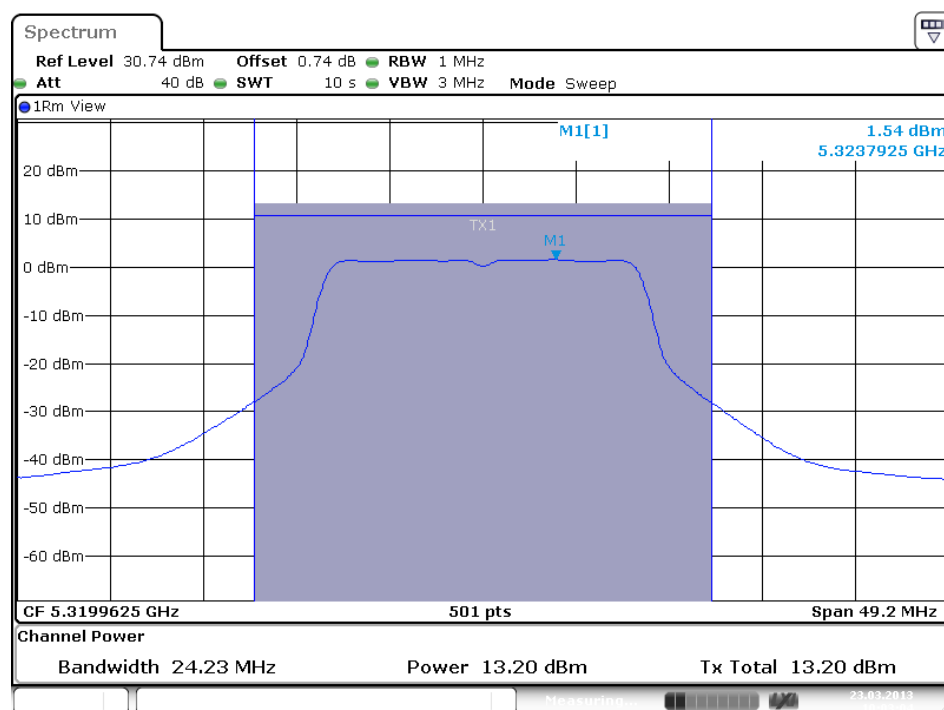
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Date: 23.MAR.2013 09:16:22

Plot B



Date: 23.MAR.2013 10:03:04

Plot C

Test Report No.:

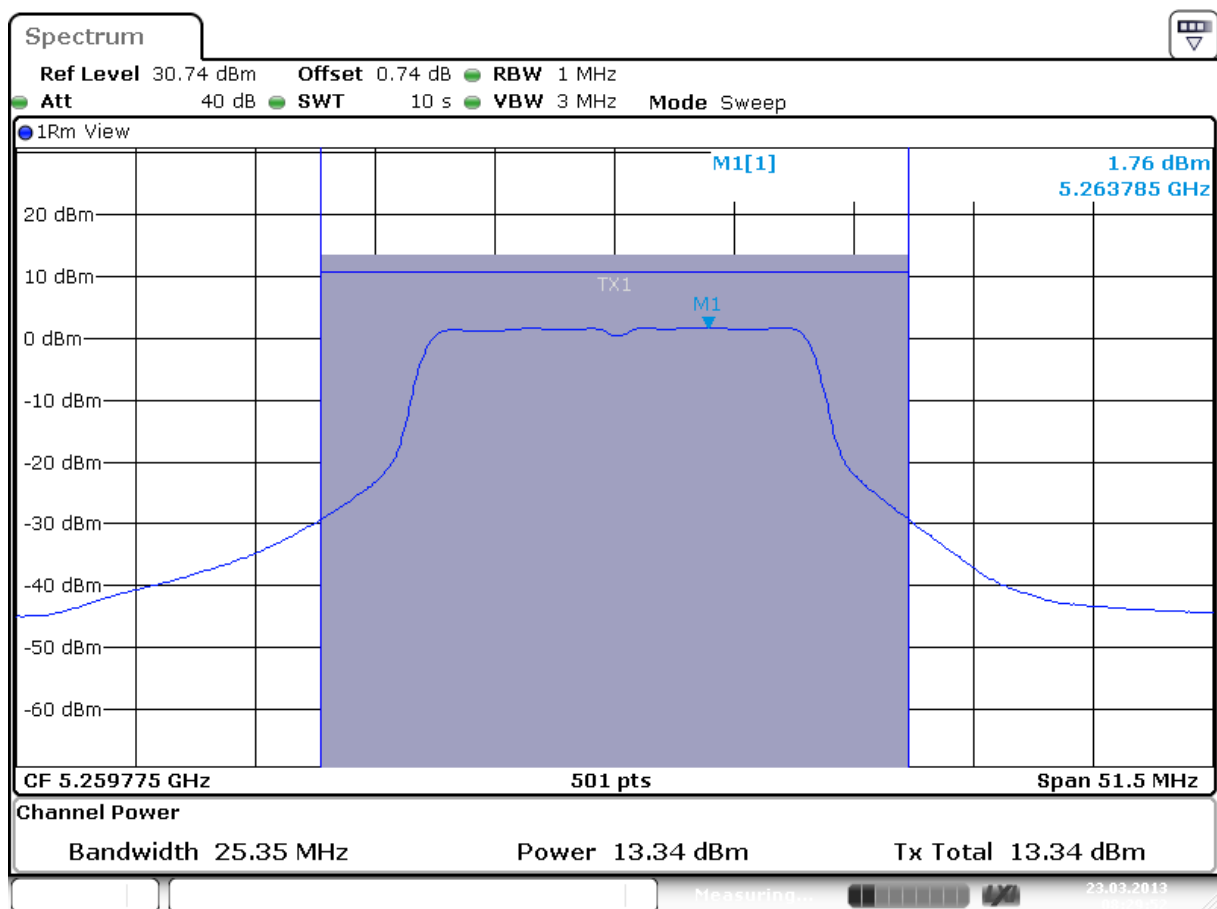
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Operation mode: 6Mb OFDM, Antenna 2

Frequency [MHz]	Maximum conducted output power [dBm]	Maximum conducted output power e.i.r.p. [dBm]	PPSD/MHz [dBm]	PPSD/MHz e.i.r.p. [dBm]	Plot number
5260	13.3	18.3	1.8	6.8	A
5300	15.5	20.5	3.9	8.9	B
5320	13.8	18.8	2.1	7.1	C

Result: Pass



Date: 23.MAR.2013 08:29:52

Plot A

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Plot B



Plot C

Test Report No.:

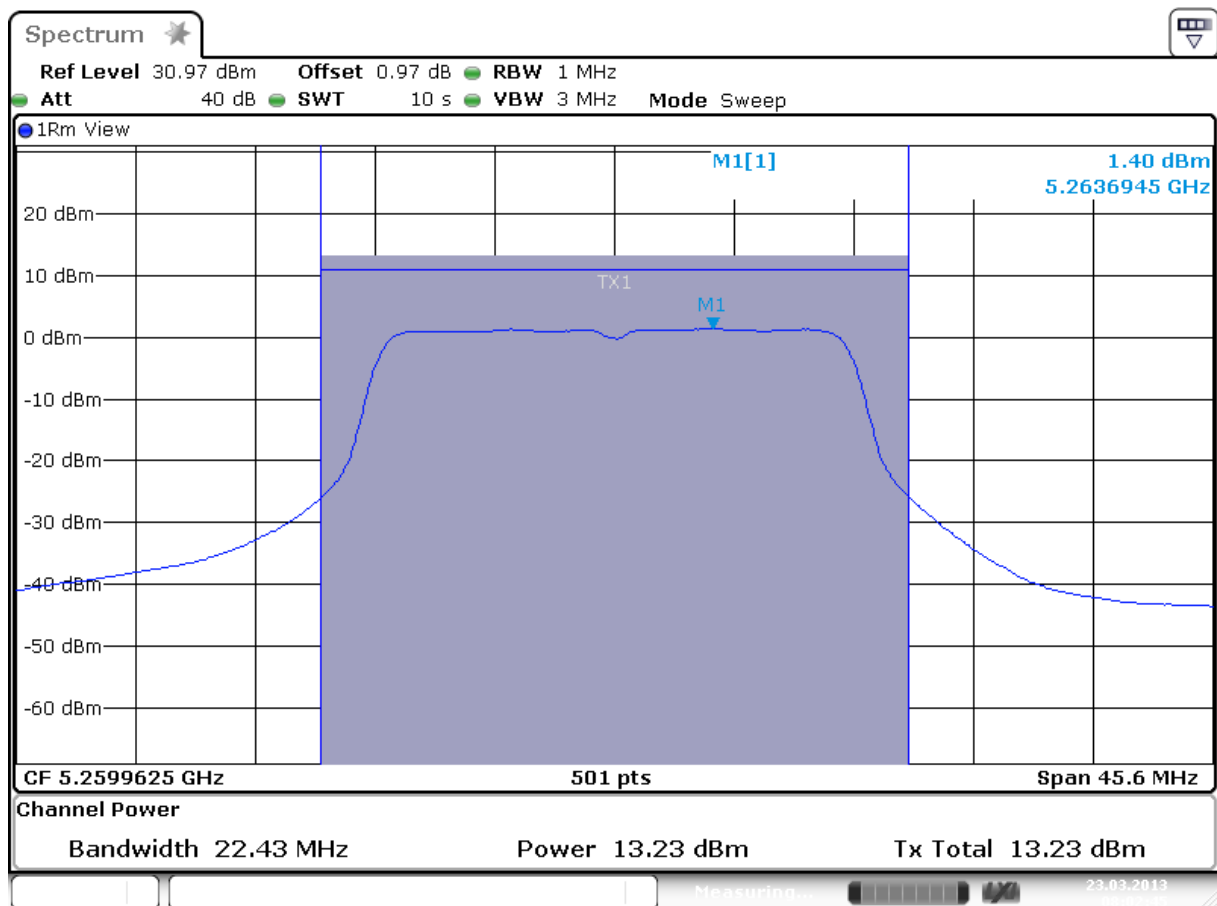
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Operation mode: HT4 20 MHz, Antenna 1

Frequency [MHz]	Maximum conducted output power [dBm]	Maximum conducted output power e.i.r.p. [dBm]	PPSD/MHz [dBm]	PPSD/MHz e.i.r.p. [dBm]	Plot number
5260	13.2	18.2	1.4	6.4	A
5300	15.8	20.8	4.0	9.0	B
5320	13.2	18.2	1.3	6.3	C

Result: Pass



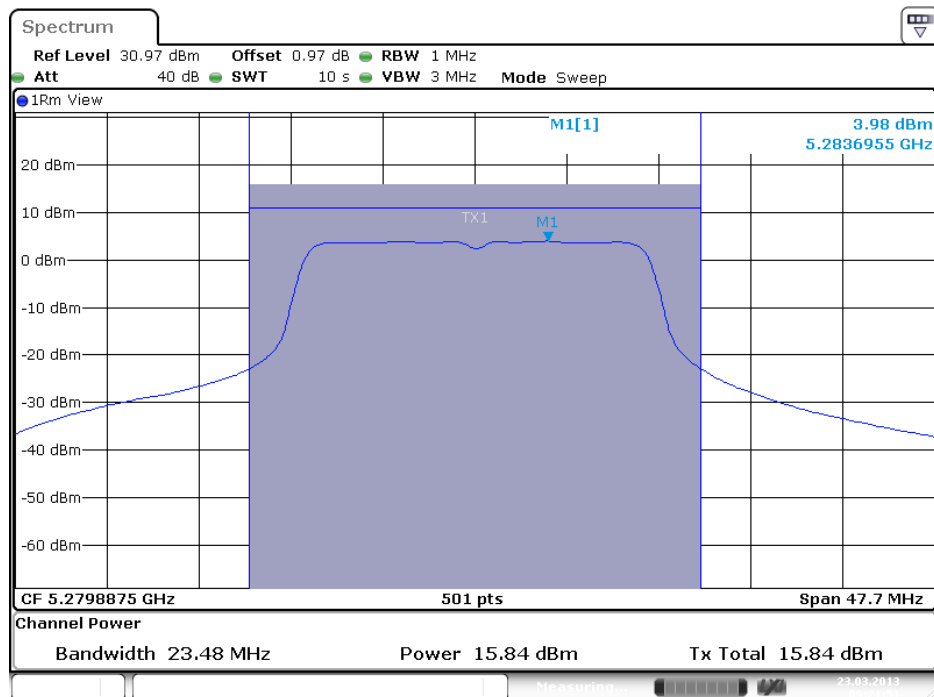
Date: 23.MAR.2013 08:02:44

Plot A

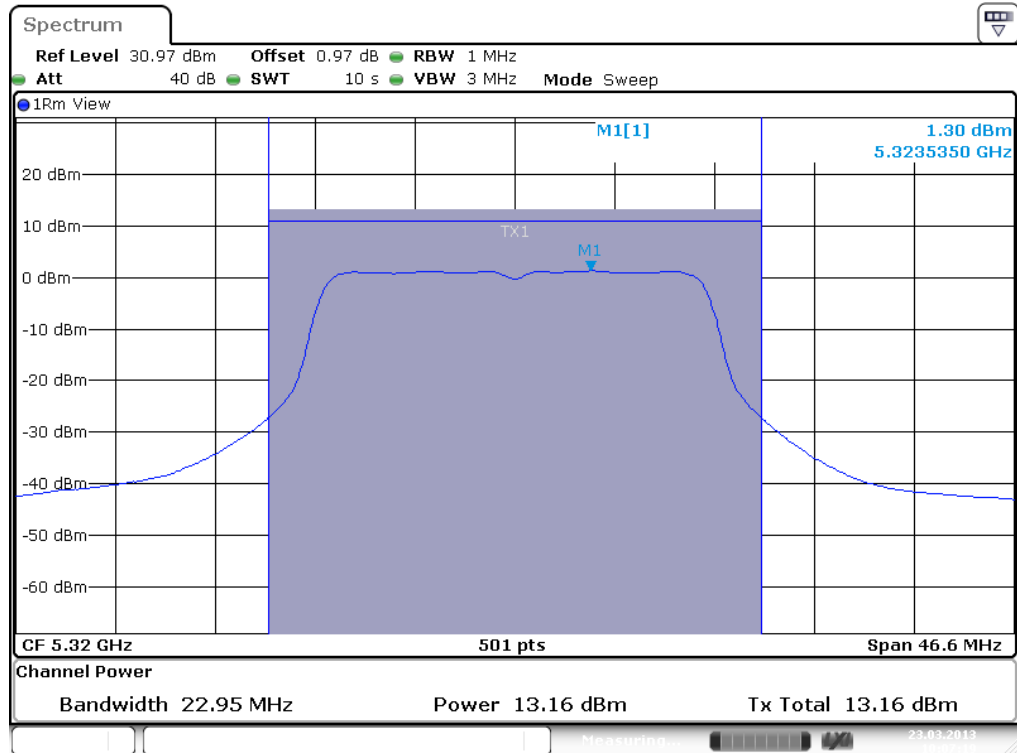
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Plot B



Plot C

Test Report No.:

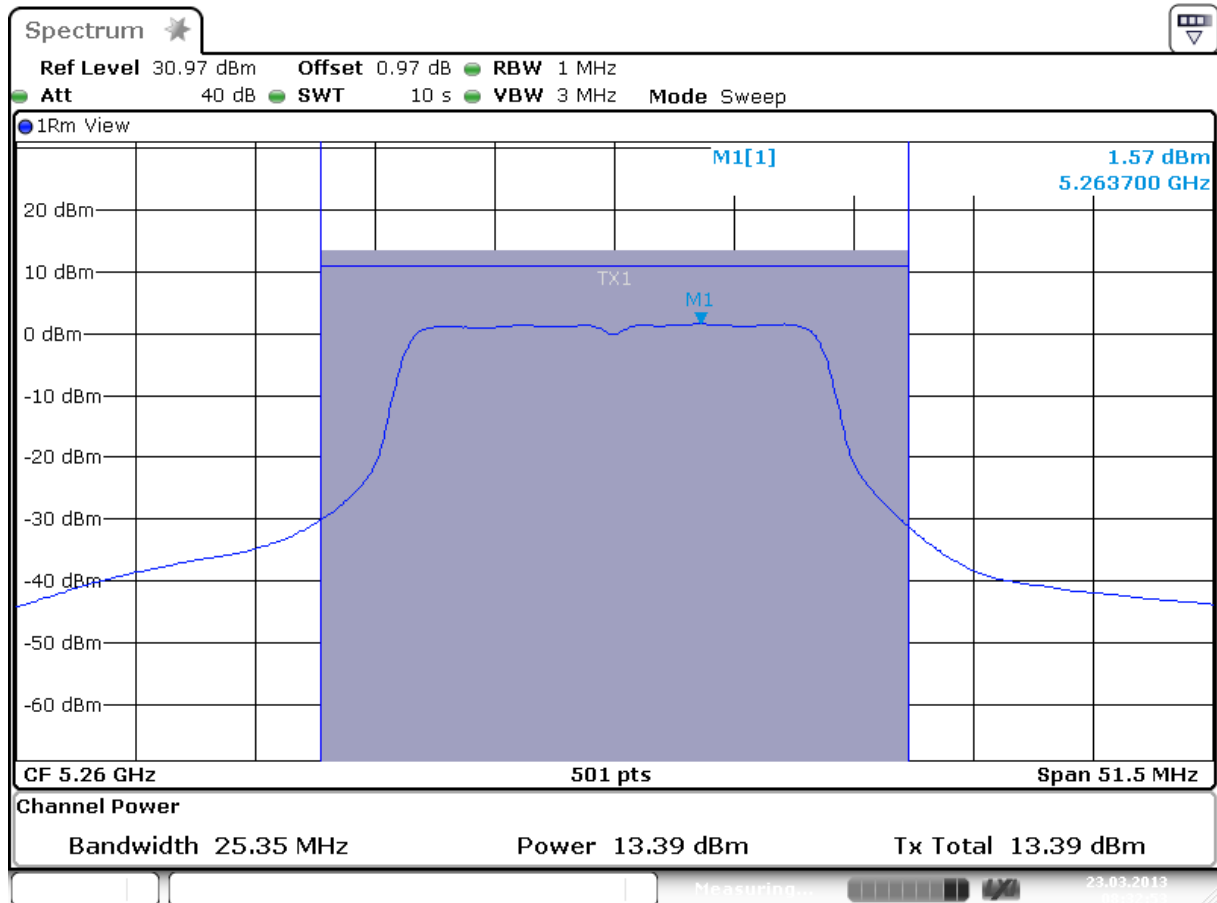
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Operation mode: HT4 20 MHz, Antenna 2

Frequency [MHz]	Maximum conducted output power [dBm]	Maximum conducted output power e.i.r.p. [dBm]	PPSD/MHz [dBm]	PPSD/MHz e.i.r.p. [dBm]	Plot number
5260	13.4	18.4	1.6	6.6	A
5300	15.6	20.6	3.8	8.8	B
5320	13.9	18.9	2.0	7.0	C

Result: Pass



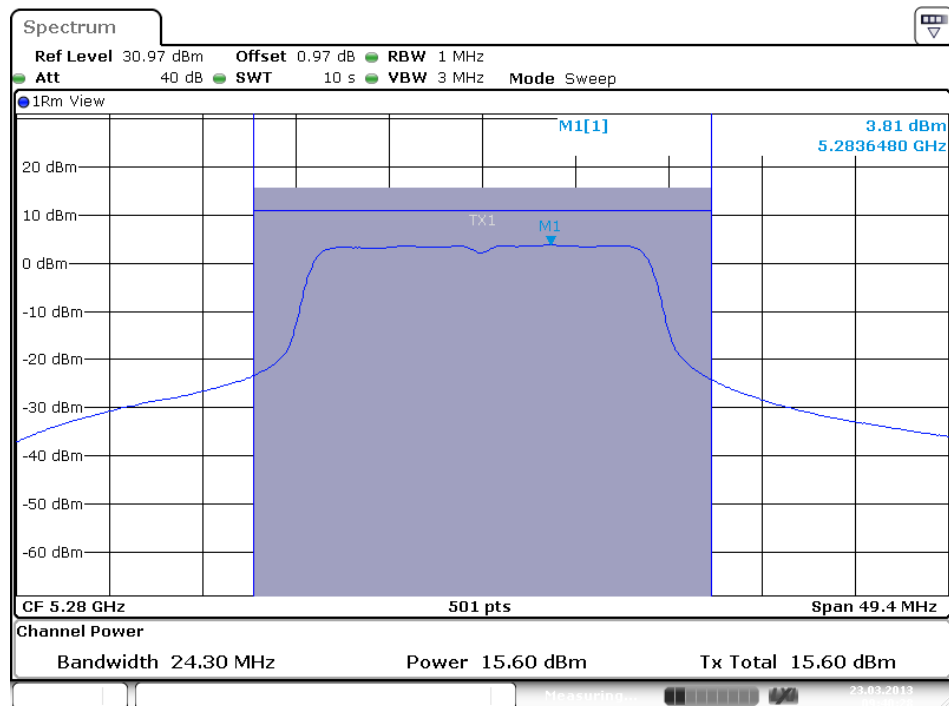
Date: 23.MAR.2013 08:32:53

Plot A

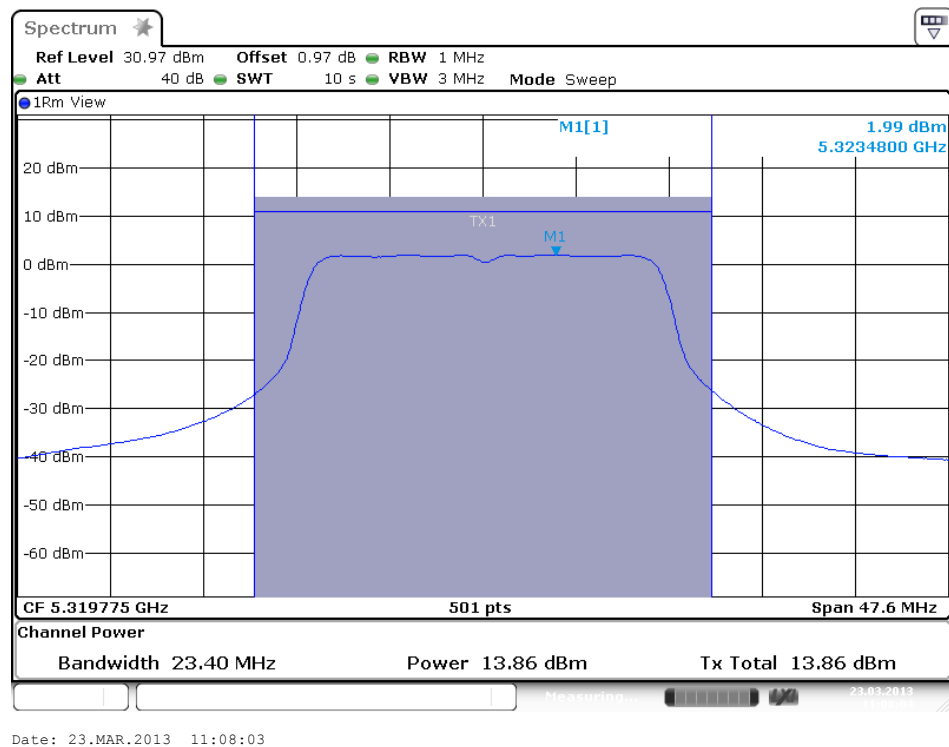
Test Report No.:

12121201.fcc03

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Plot B



Plot C

Test Report No.:

12121201.fcc03

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Operation mode: HT8 20 MHz, Antenna 1+2

Frequency [MHz]	Maximum conducted output power [dBm]	Maximum conducted output power Ant1 + Ant2 [mW]	Maximum conducted output power e.i.r.p. [dBm]	PPSD/MHz [dBm]	PPSD/MHz e.i.r.p. [dBm]	Plot number
5260	11.0 (=8.1 +7.9)	12.6	16.0	-0.8	4.2	A
5300	13.7 (=10.7 + 10.7)	23.4	18.7	1.8	6.8	B
5320	11.6 (= 8.8+8.3)	14.5	16.6	-0.2	4.8	C

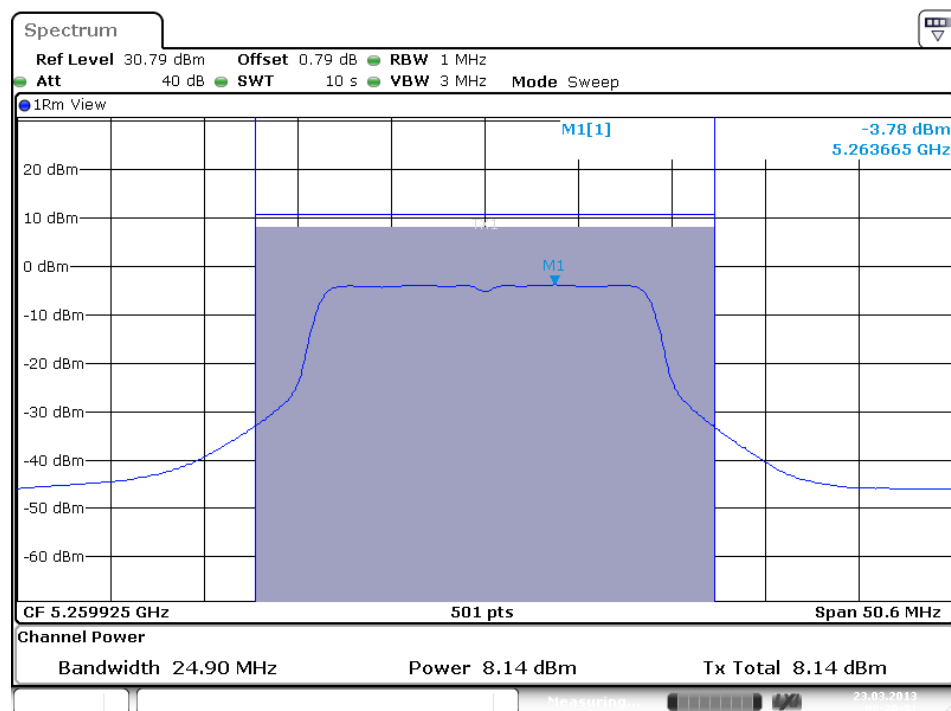
Result: Pass

See plots on the next page.

Test Report No.:

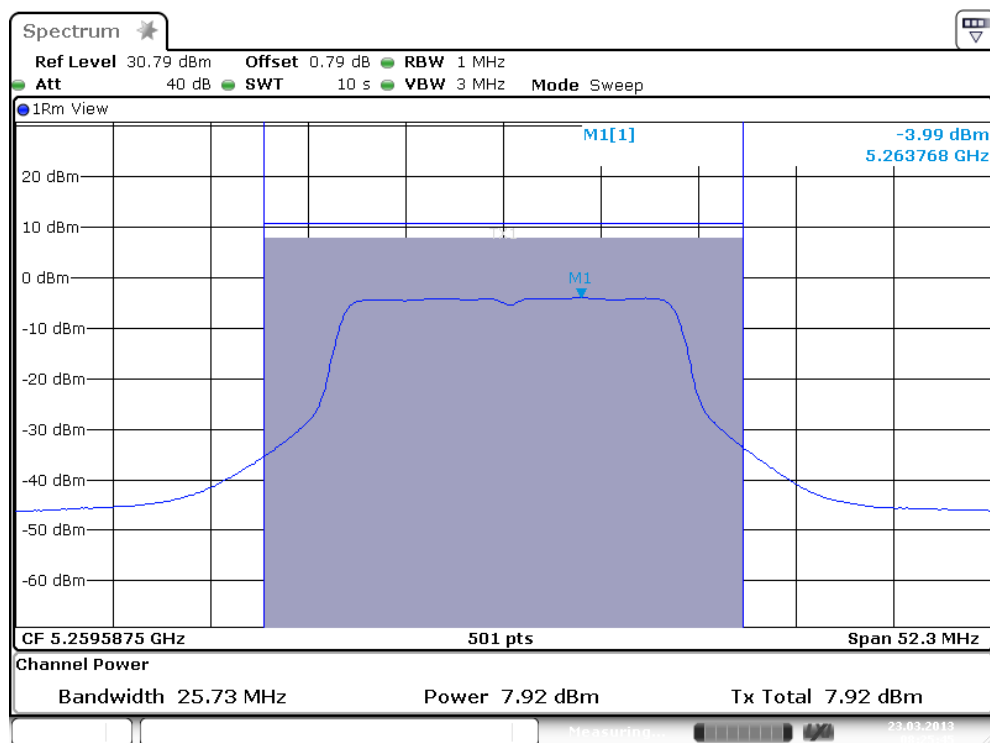
12121201.fcc03

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Date: 23.MAR.2013 08:20:31

Plot A1 Antenna 1



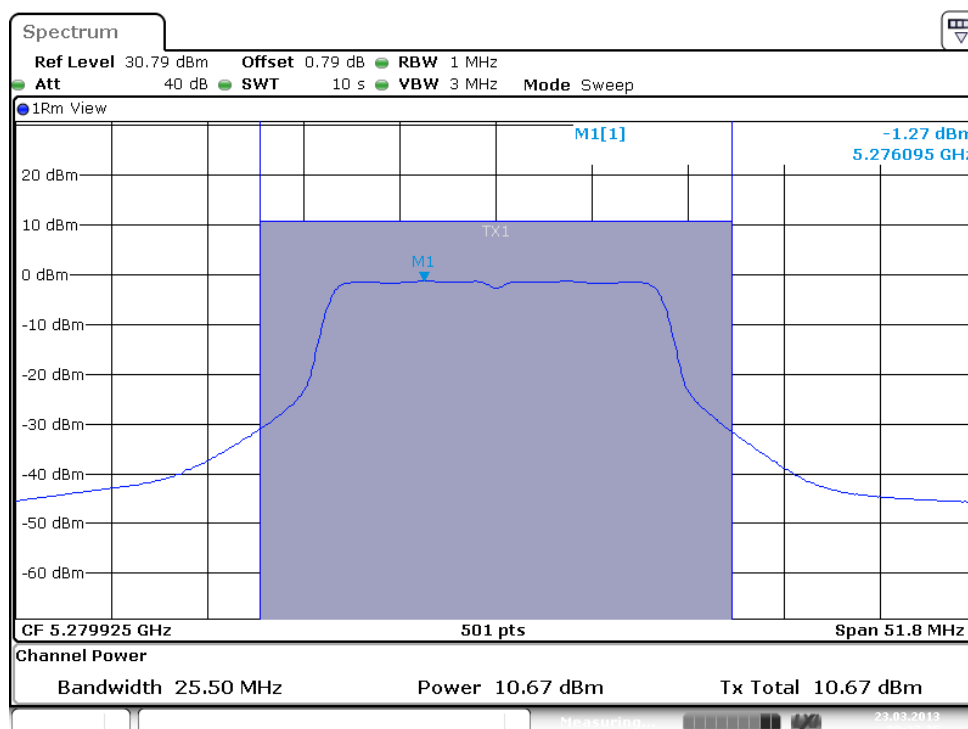
Date: 23.MAR.2013 08:25:45

Plot A2 Antenna 2

Test Report No.:

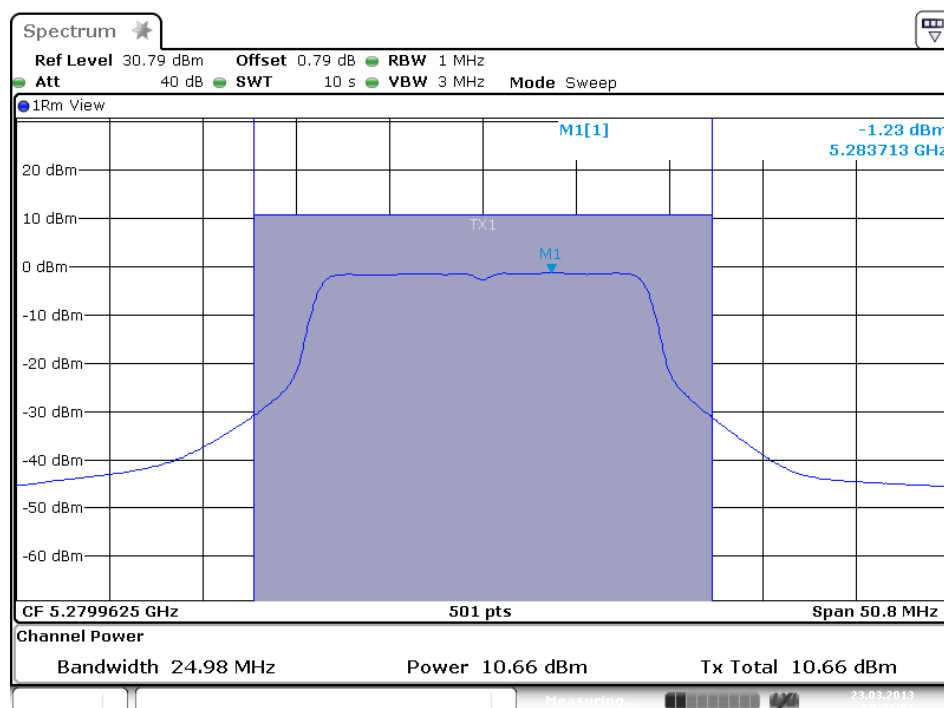
12121201.fcc03

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Date: 23.MAR.2013 09:27:25

Plot B1 Antenna 1



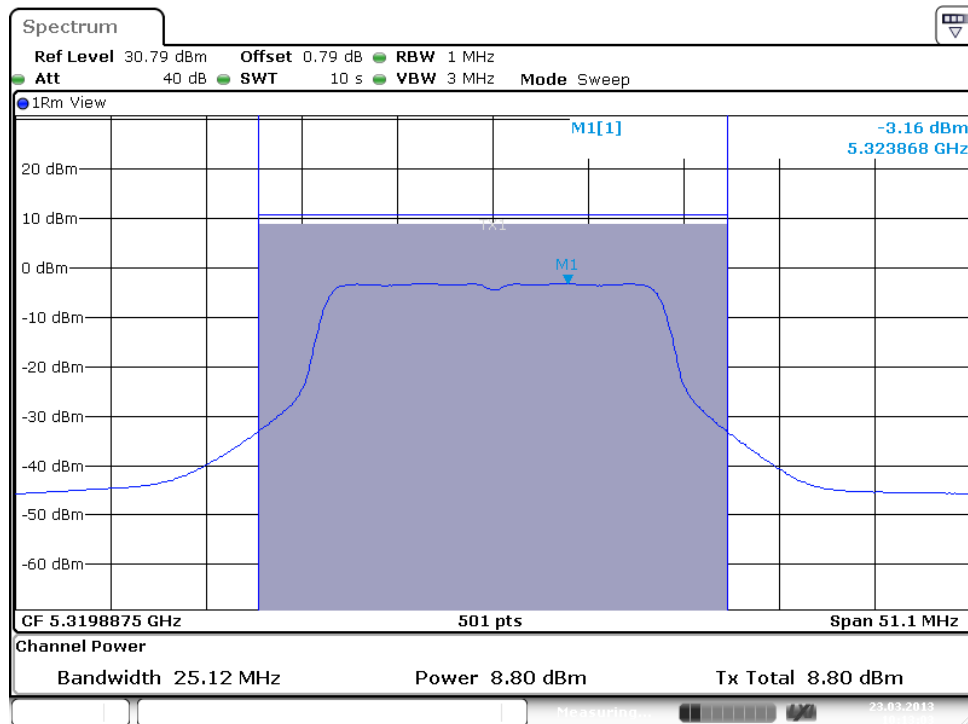
Date: 23.MAR.2013 09:32:01

Plot B2 Antenna 2

Test Report No.:

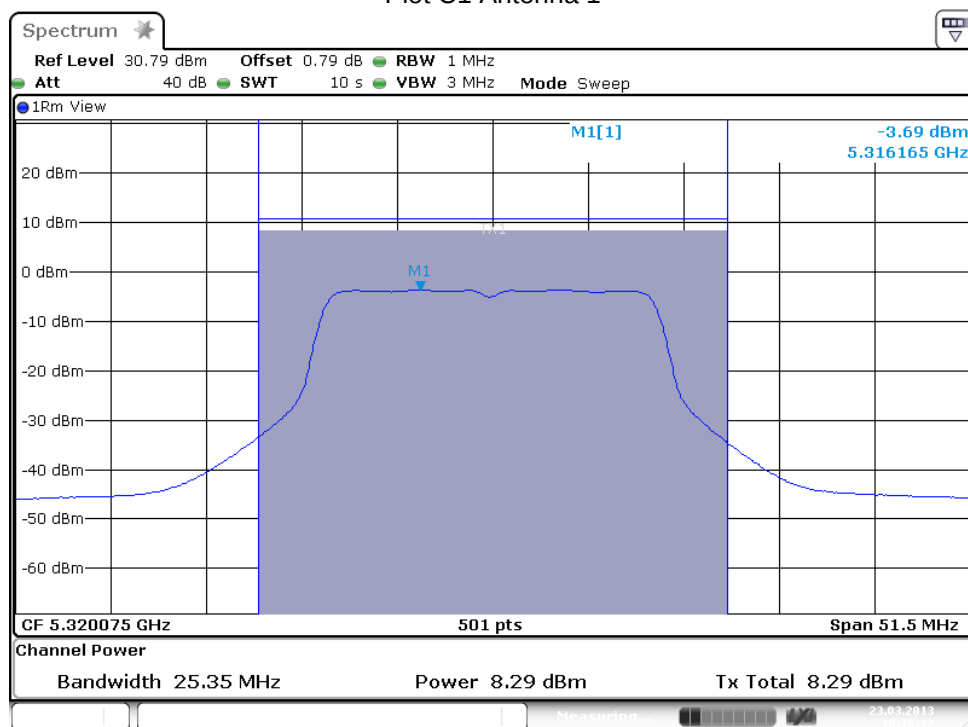
12121201.fcc03

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Date: 23.MAR.2013 10:13:03

Plot C1 Antenna 1



Date: 23.MAR.2013 10:16:17

Plot C2 Antenna 2

Test Report No.:

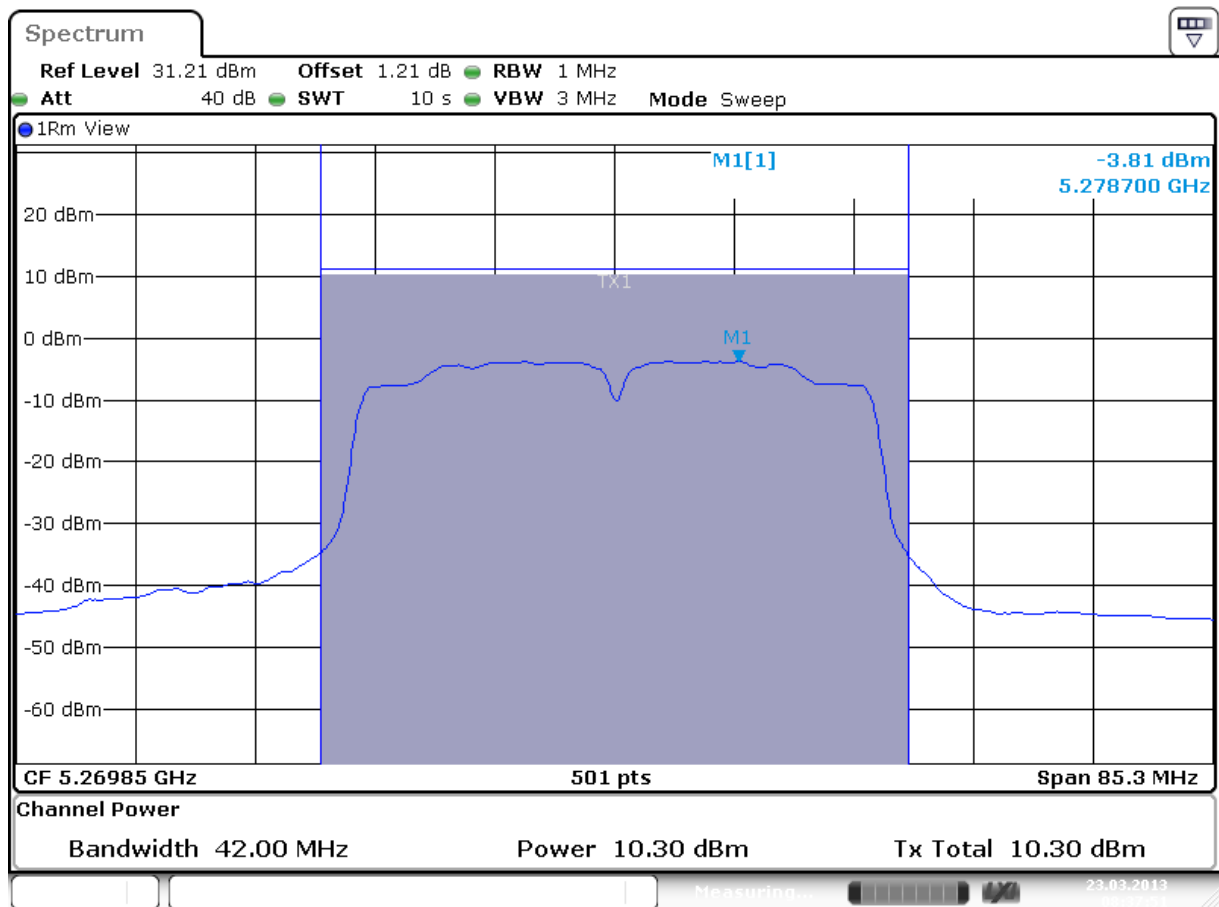
12121201.fcc03

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Operation mode: HT4 40 MHz, Antenna 1

Frequency [MHz]	Maximum conducted output power [dBm]	Maximum conducted output power e.i.r.p. [dBm]	PPSD/MHz [dBm]	PPSD/MHz e.i.r.p. [dBm]	Plot number
5270	10.3	15.3	-3.8	1.2	A
5310	11.4	16.4	-2.7	2.3	B

Result: Pass



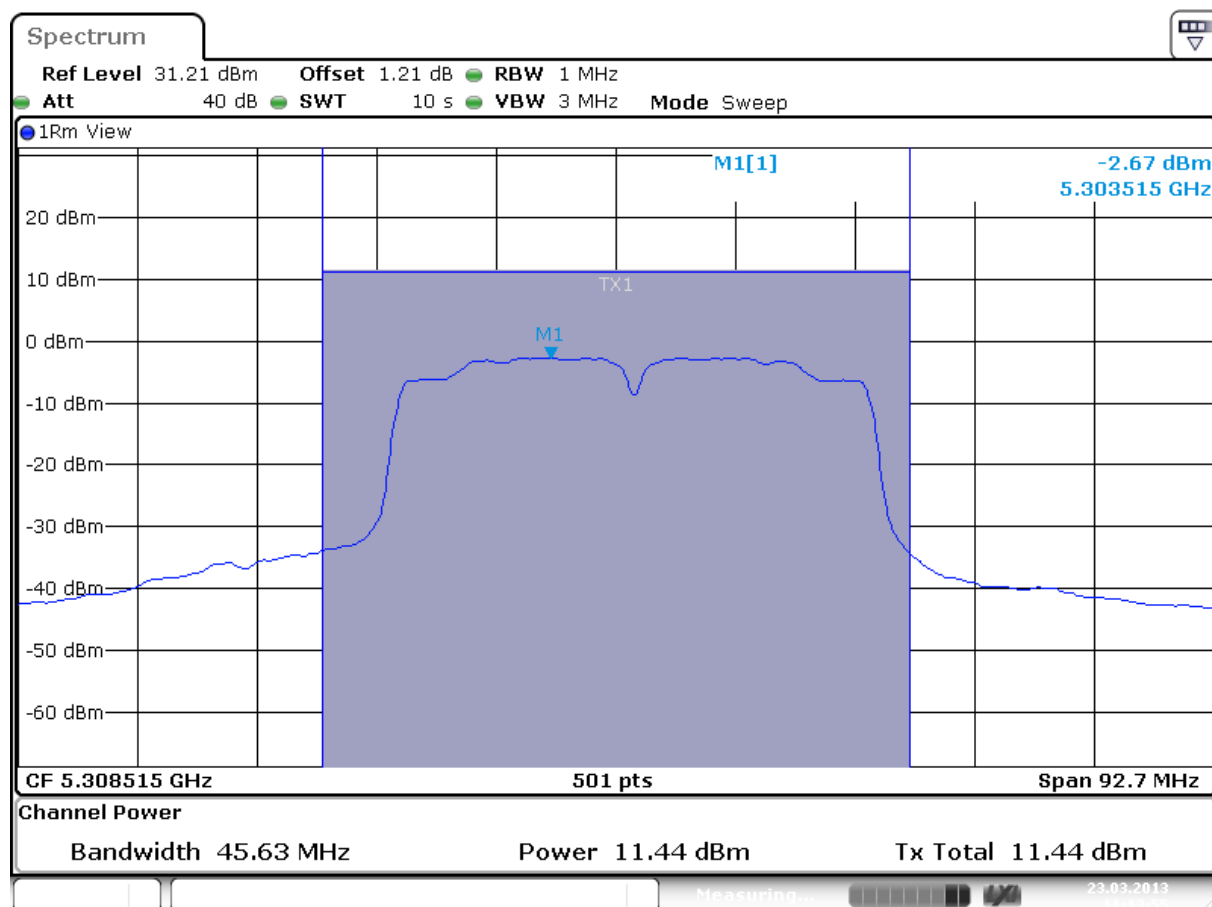
Date: 23.MAR.2013 08:37:52

Plot A

Test Report No.:

12121201.fcc03

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Date: 23.MAR.2013 11:13:55

Plot B

Test Report No.:

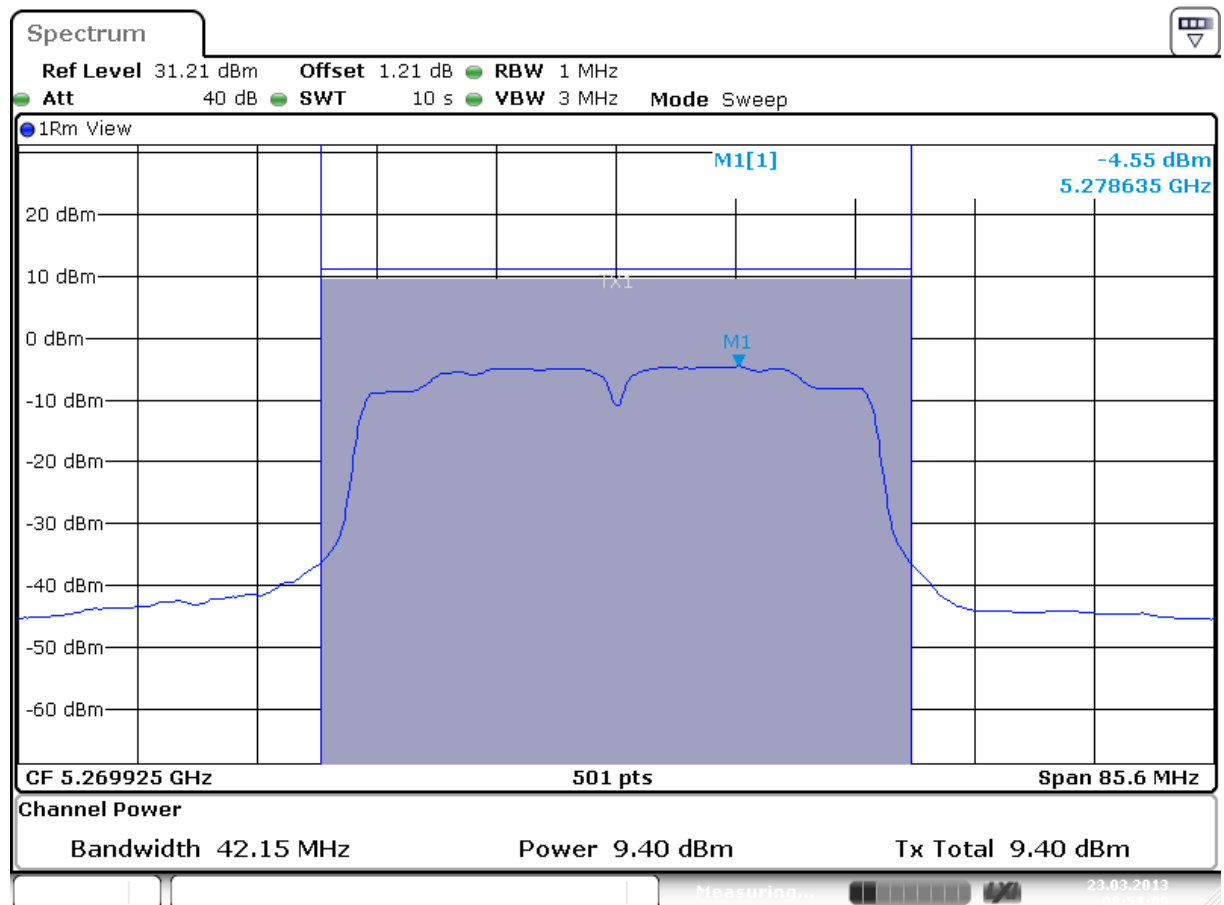
12121201.fcc03

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Operation mode: HT4 40 MHz, Antenna 2

Frequency [MHz]	Maximum conducted output power [dBm]	Maximum conducted output power e.i.r.p. [dBm]	PPSD/MHz [dBm]	PPSD/MHz e.i.r.p. [dBm]	Plot number
5270	9.4	14.4	-4.5	0.5	A
5310	11.2	16.2	-3.0	2.0	B

Result: Pass



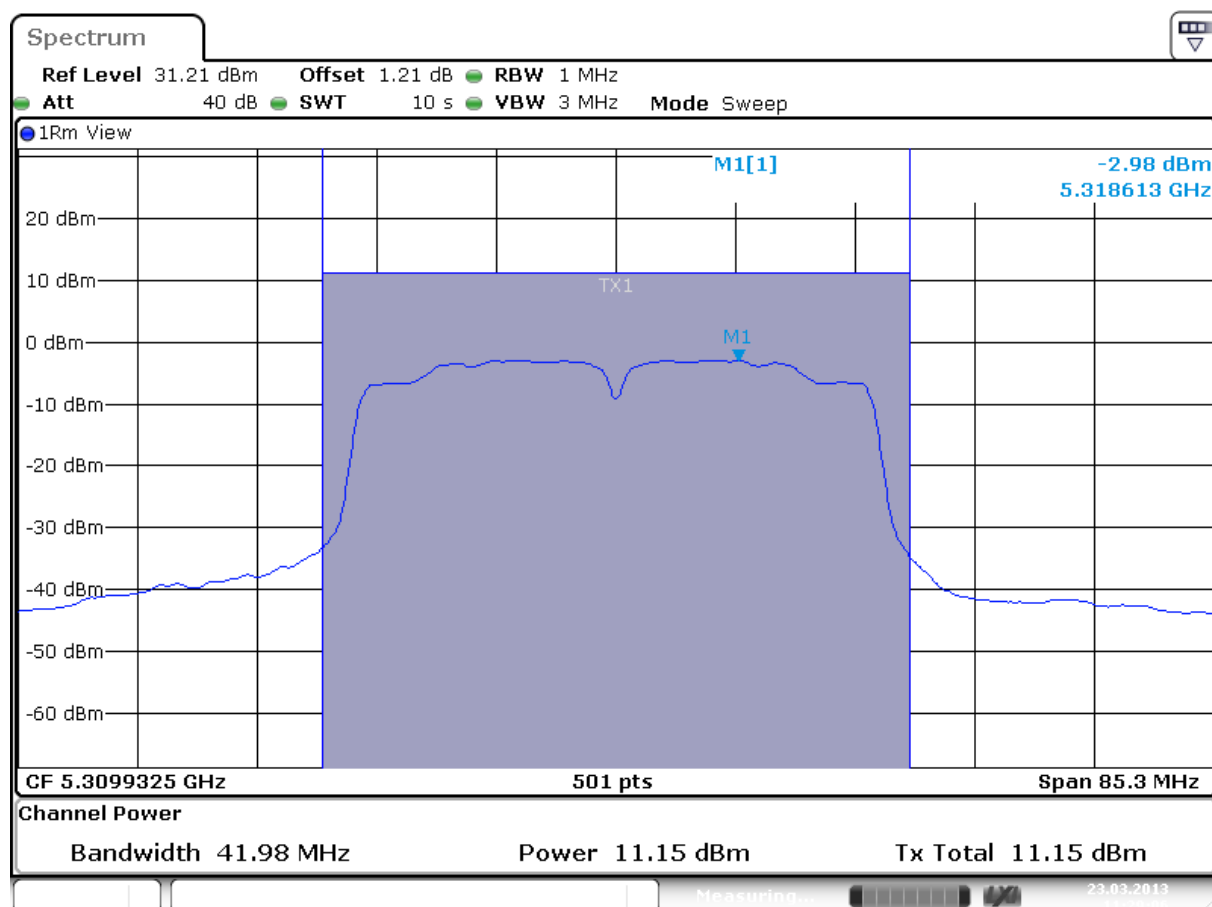
Date: 23.MAR.2013 08:51:09

Plot A

Test Report No.:

12121201.fcc03

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Date: 23.MAR.2013 11:29:06

Plot B

Test Report No.:

12121201.fcc03

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Operation mode: HT8 40 MHz, Antenna 1+2

Frequency [MHz]	Maximum conducted output power [dBm]	Maximum conducted output power Ant1 + Ant2 [mW]	Maximum conducted output power e.i.r.p. [dBm]	PPSD/MHz [dBm]	PPSD/MHz e.i.r.p. [dBm]	Plot number
5270	8.6 (=5.4 + 5.8)	7.2	13.6	-5.4	-0.4	A
5310	9.3 (=6.7+6)	8.5	14.3	-4.6	0.4	B

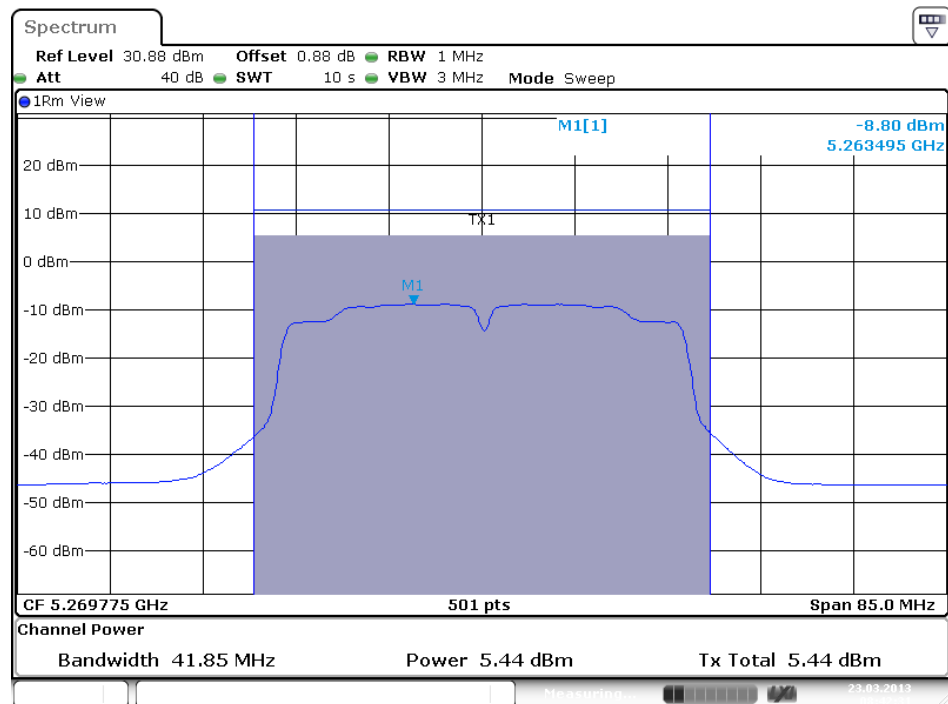
Result: Pass

See plots on the next page.

Test Report No.:

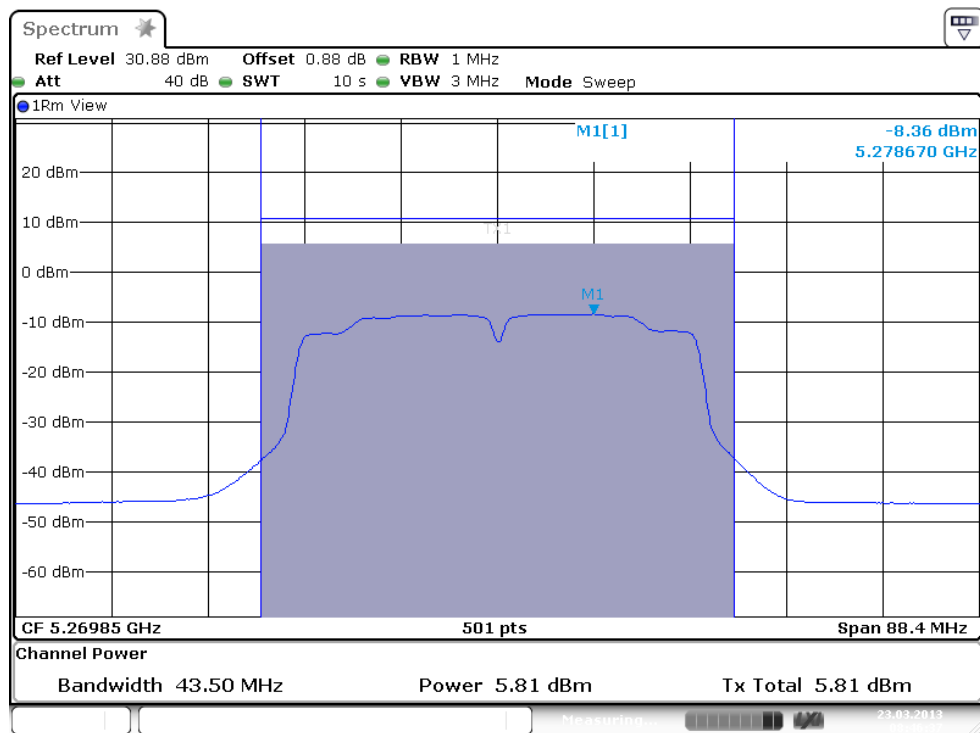
12121201.fcc03

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Date: 23.MAR.2013 08:42:31

Plot A1 Antenna 1



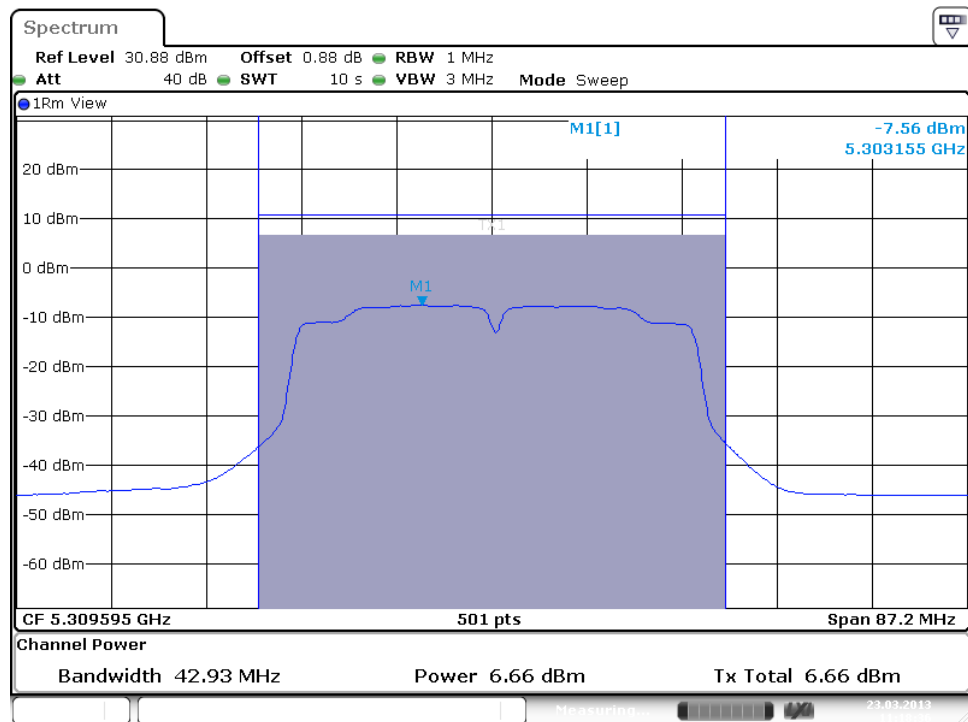
Date: 23.MAR.2013 08:46:38

Plot A2 Antenna 2

Test Report No.:

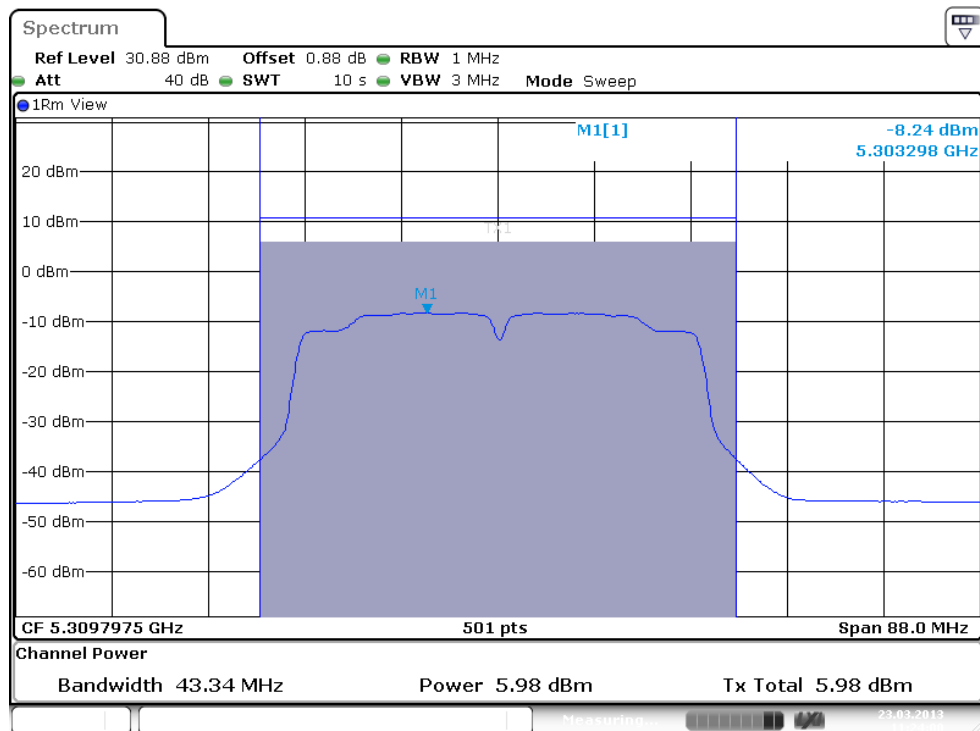
12121201.fcc03

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Date: 23.MAR.2013 11:18:37

Plot B1 Antenna 1



Date: 23.MAR.2013 11:24:00

Plot B2 Antenna 2

Test Report No.:

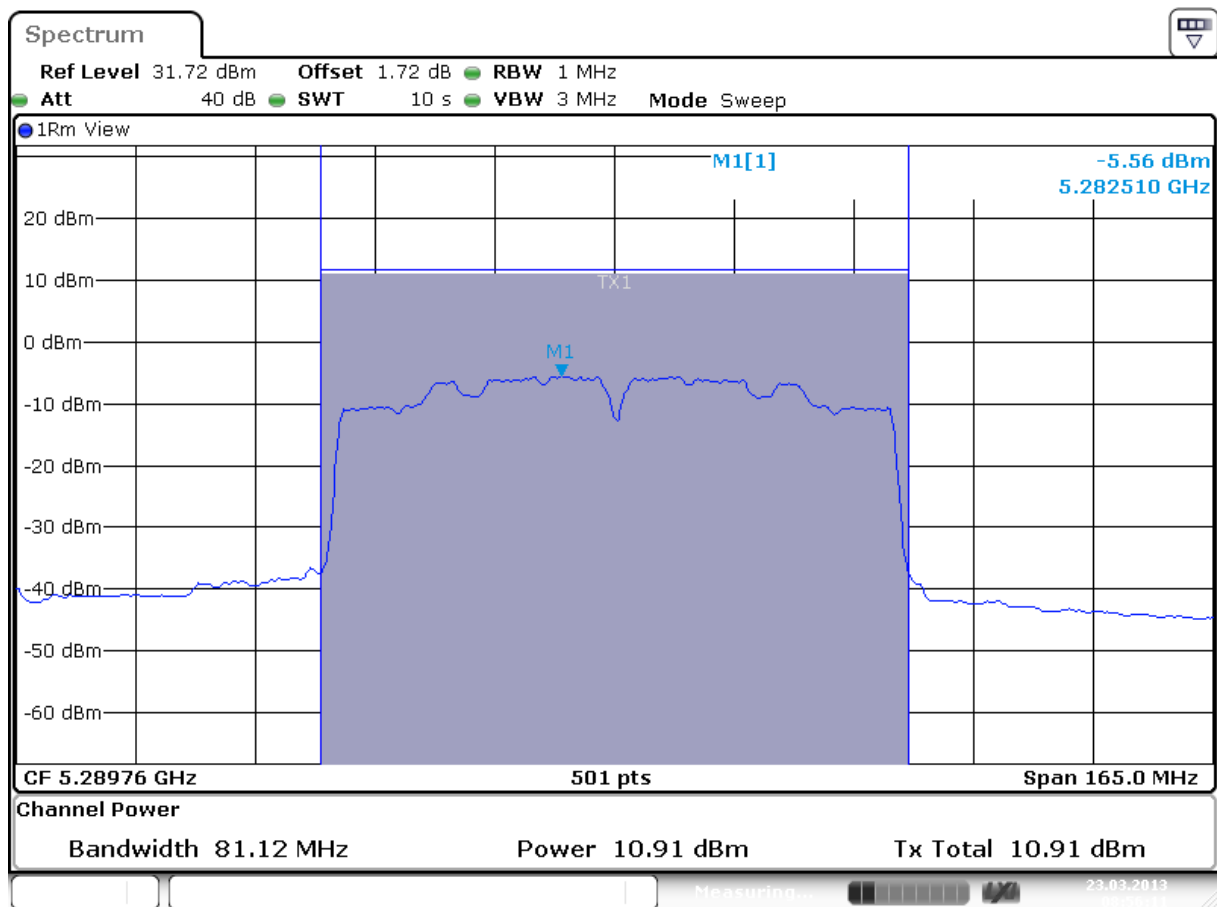
12121201.fcc03

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Operation mode: VHT6 80 MHz, Antenna 1

Frequency [MHz]	Maximum conducted output power [dBm]	Maximum conducted output power e.i.r.p. [dBm]	PPSD/MHz [dBm]	PPSD/MHz e.i.r.p. [dBm]	Plot number
5290	10.9	15.9	-5.6	-0.6	A

Result: Pass



Date: 23.MAR.2013 08:56:11

Plot A

Test Report No.:

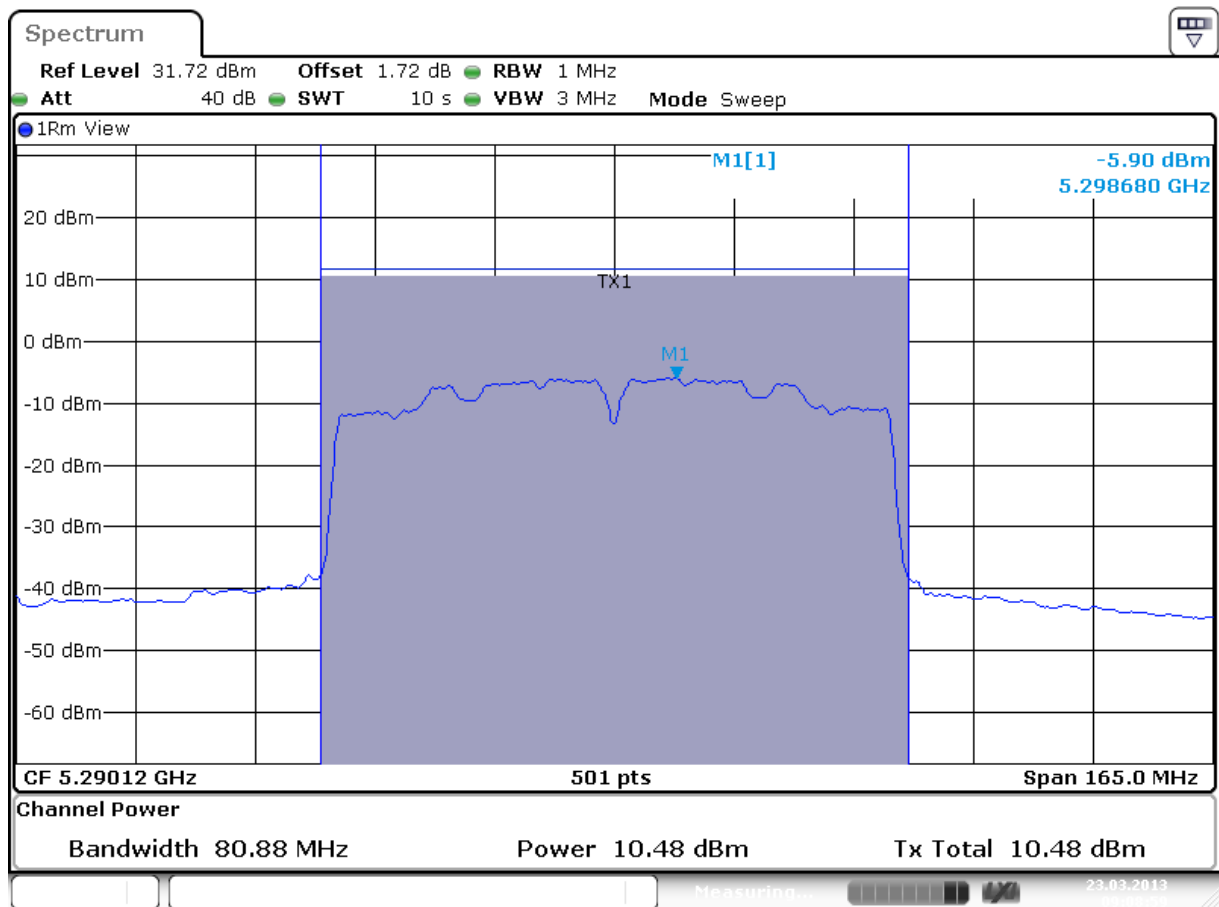
12121201.fcc03

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Operation mode: VHT6 80 MHz, Antenna 2

Frequency [MHz]	Maximum conducted output power [dBm]	Maximum conducted output power e.i.r.p. [dBm]	PPSD/MHz [dBm]	PPSD/MHz e.i.r.p. [dBm]	Plot number
5290	10.5	15.5	-5.9	-0.9	A

Result: Pass



Date: 23.MAR.2013 09:09:00

Plot A

Test Report No.:

12121201.fcc03

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Operation mode: VHT6 80 MHz, Antenna 1+2

Frequency [MHz]	Maximum conducted output power [dBm]	Maximum conducted output power Ant1 + Ant2 [mW]	Maximum conducted output power e.i.r.p. [dBm]	PPSD/MHz [dBm]	PPSD/MHz e.i.r.p. [dBm]	Plot number
5290	9.1 (=6+6.2)	8.1	14.1	-7.1	-2.1	A

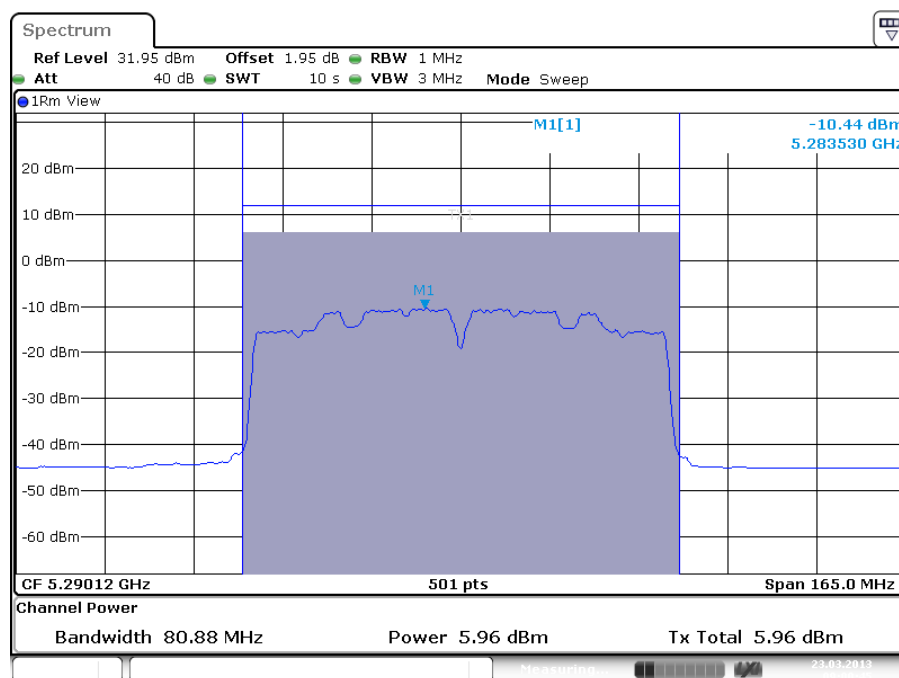
Result: Pass

See plots on the next page

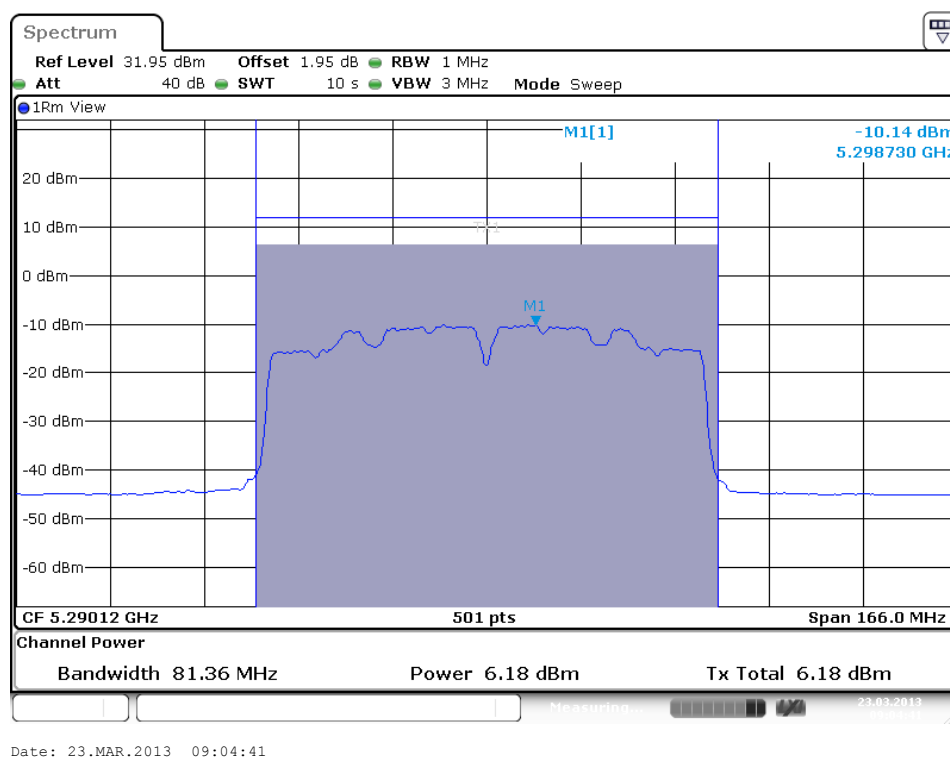
Test Report No.:

12121201.fcc03

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Plot A1 Antenna 1



Plot A2 Antenna 2

Test Report No.:

12121201.fcc03

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6.2.2 26dB and 99% Bandwidth

RESULT: PASS

Date of testing:

2013-03-23

Requirements:

FCC 15.407 and RSS-210

For FCC 26 dB bandwidth: No requirement is given.

For 99% Bandwidth: RSS-Gen Section 4.6.1: No requirement is given.

Test procedure 26dB bandwidth:

ANSI C63.10-2009 and ANSI C63.10-2009

KDB Publication No.789033 D01 v01r02 9/26/2012 .

KDB Publication No. 644545 D01 and D02.

A spectrum analyzer was connected to the antenna port of the EUT. The spectrum analyzer resolution bandwidth was set to 100kHz, video bandwidth to 300kHz and the span wide enough to capture the modulated carrier.

For 99% Bandwidth:

ANSI C63.10-2009 and RSS-Gen.

The transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used given that a peak or peak hold may produce a wider bandwidth than actual.

A spectrum analyzer was connected to the antenna port of the EUT. The spectrum analyzer resolution bandwidth was set to 1% of the selected span, Video bandwidth was set to 3 times the resolution bandwidth. The span was set to capture the whole modulation process. The Spectrum analyzers automated function for 99% BW was used.

Test Report No.:

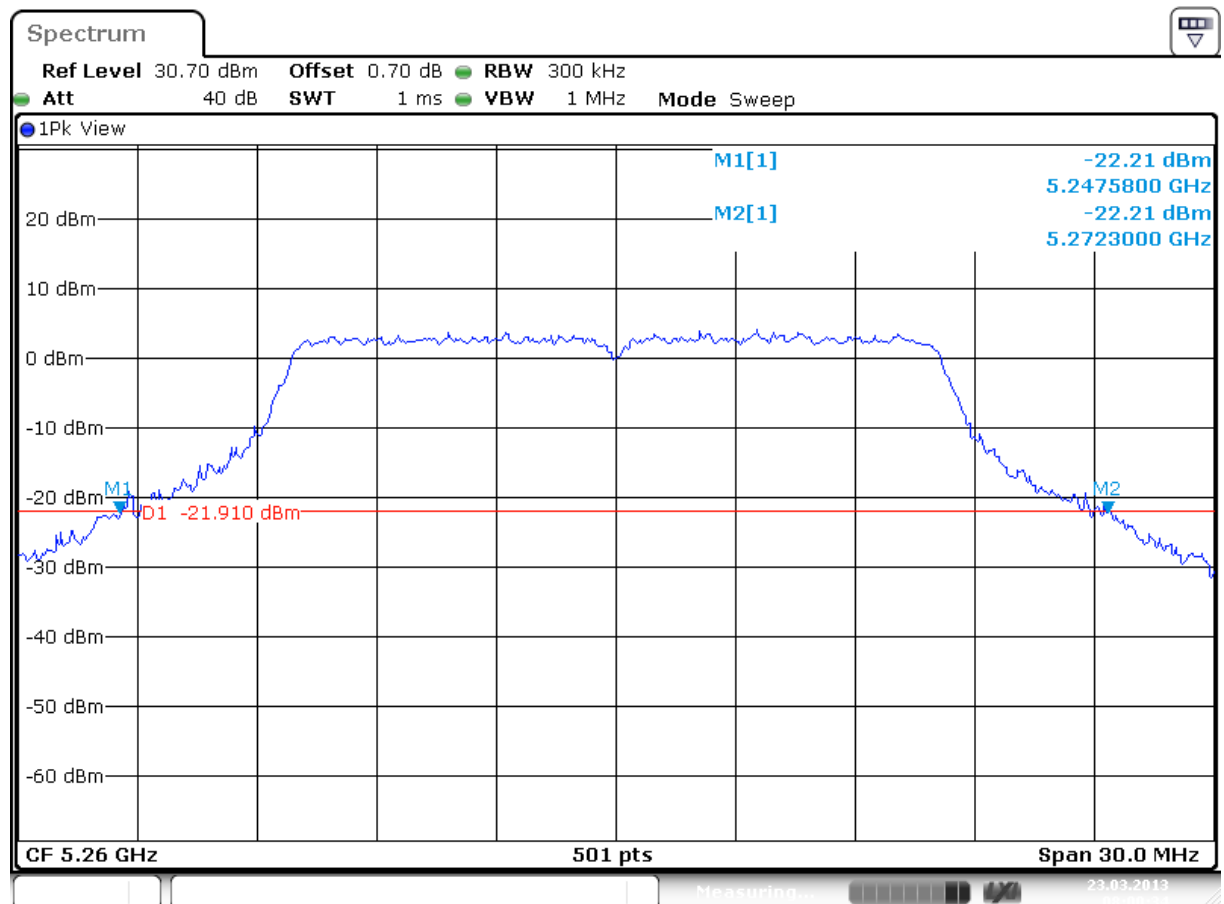
12121201.fcc03

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Table 5: 26dB Bandwidth

Operation mode: 6Mb OFDM, Antenna 1

Operating Frequency [MHz]	99% Bandwidth [kHz]	26dB Bandwidth [kHz]	Limit [kHz]	Plot number
5260	17065	24720	Not Applicable	A
5300	17125	26325	Not Applicable	B
5320	17140	25050	Not Applicable	C



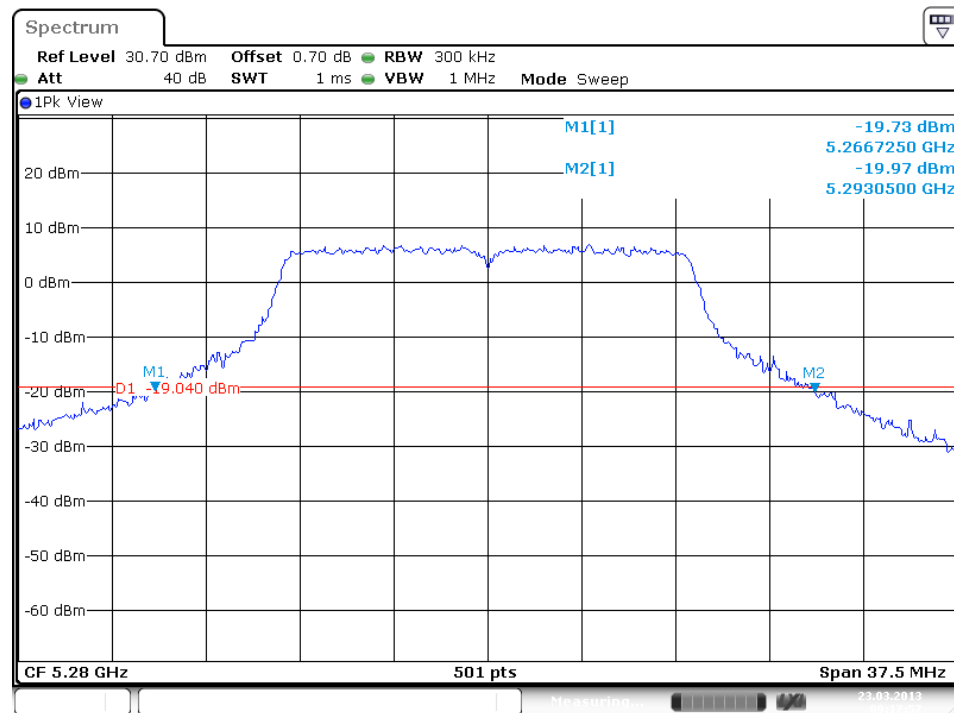
Date: 23.MAR.2013 08:00:34

Plot A

Test Report No.:

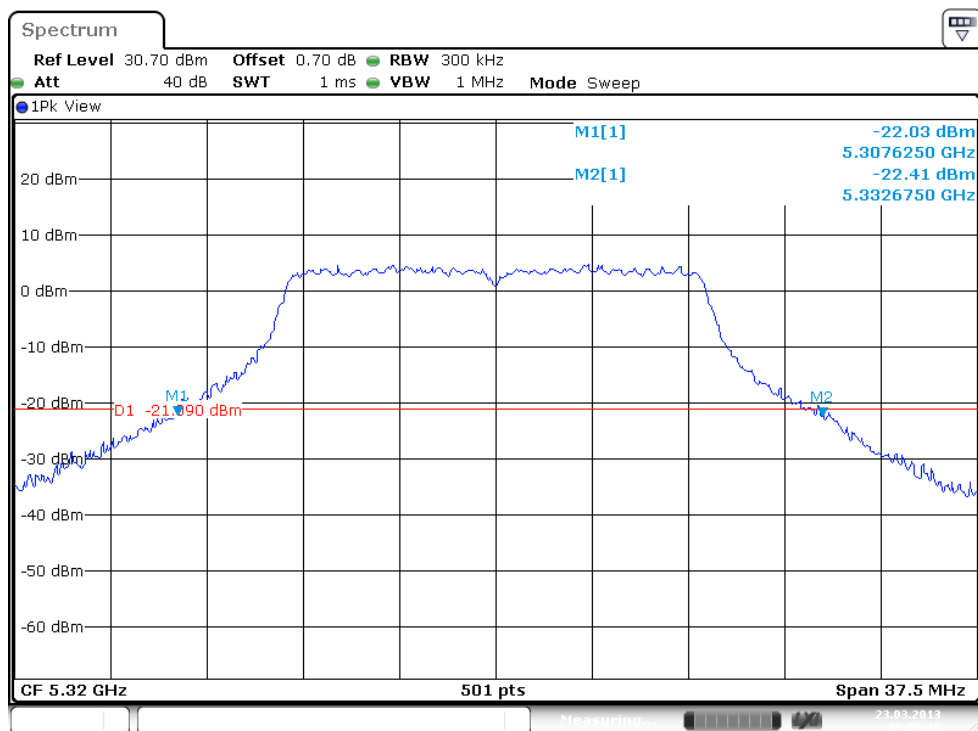
12121201.fcc03

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Date: 23.MAR.2013 09:17:57

Plot B



Date: 23.MAR.2013 10:05:15

Plot C

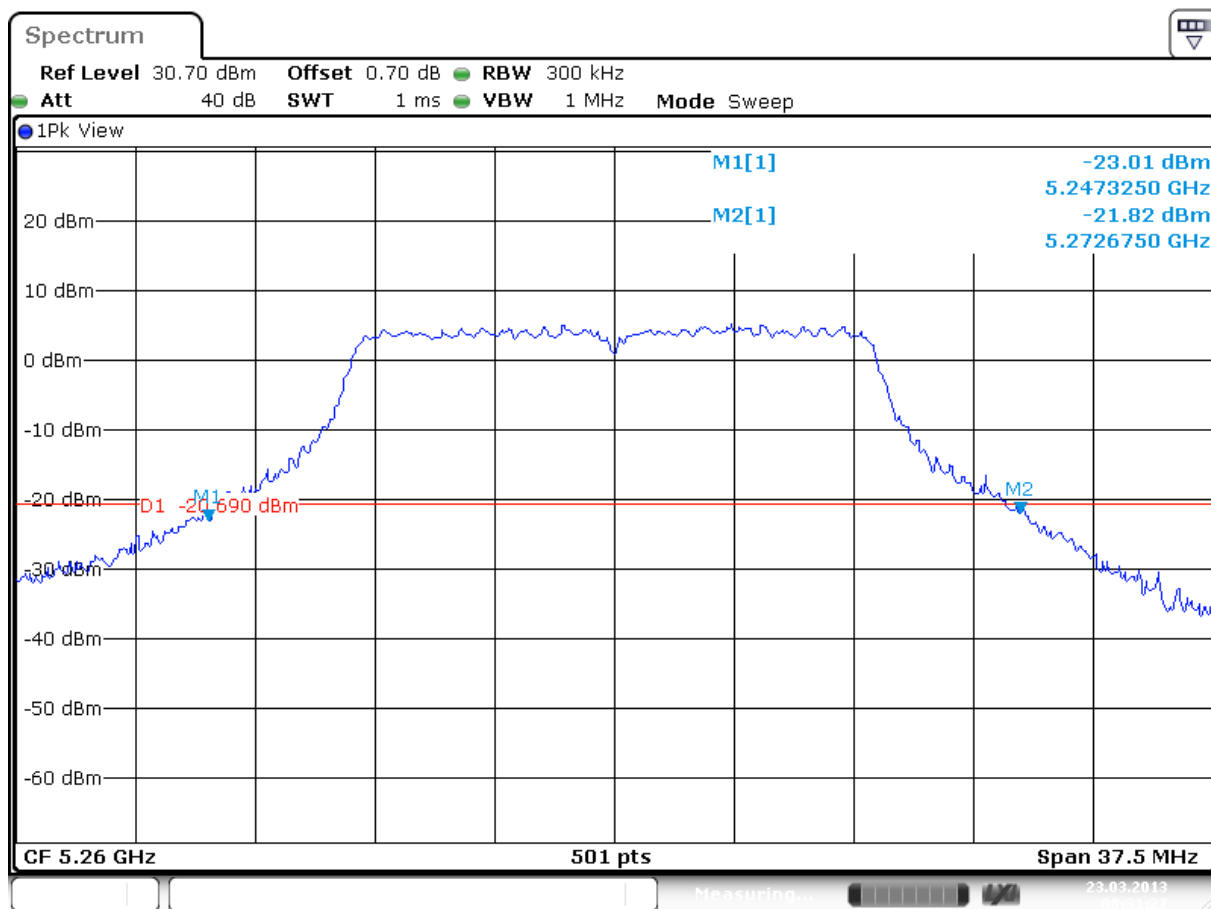
Test Report No.:

12121201.fcc03

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Operation mode: 6Mb OFDM, Antenna 2

Operating Frequency [MHz]	99% Bandwidth [kHz]	26dB Bandwidth [kHz]	Limit [kHz]	Plot number
5260	17140	25350	Not Applicable	A
5300	17215	26775	Not Applicable	B
5320	17065	25500	Not Applicable	C



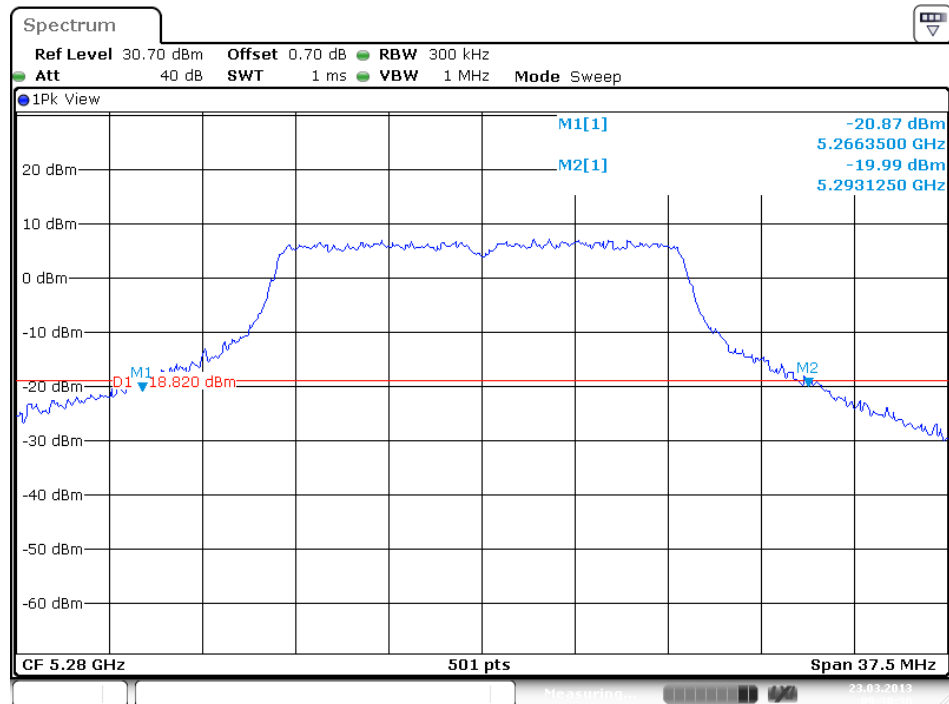
Date: 23.MAR.2013 08:31:27

Plot A

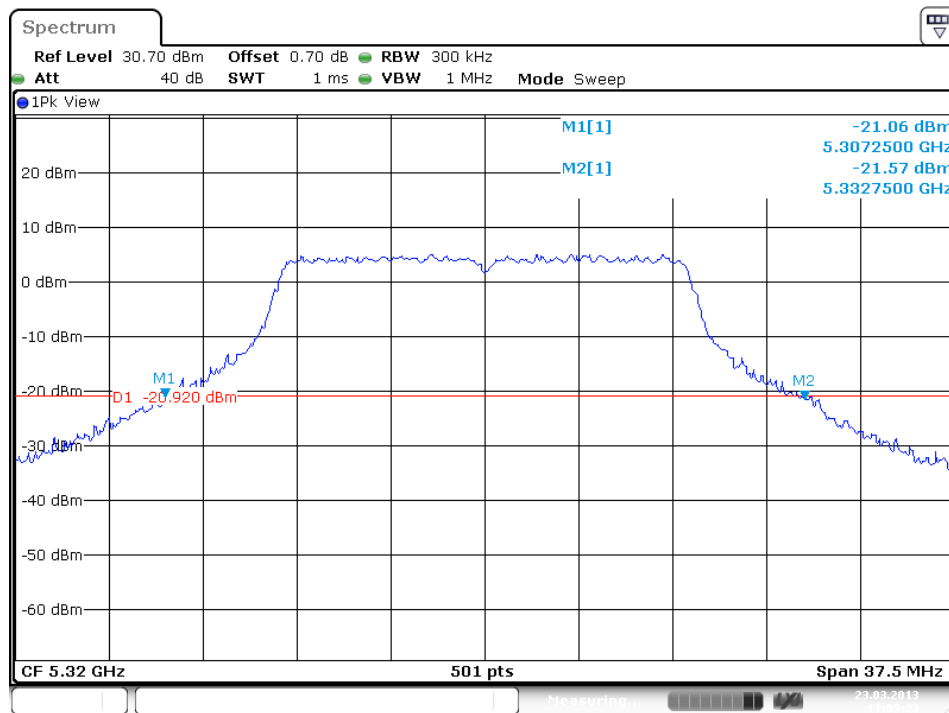
Test Report No.:

12121201.fcc03

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Plot B



Plot C

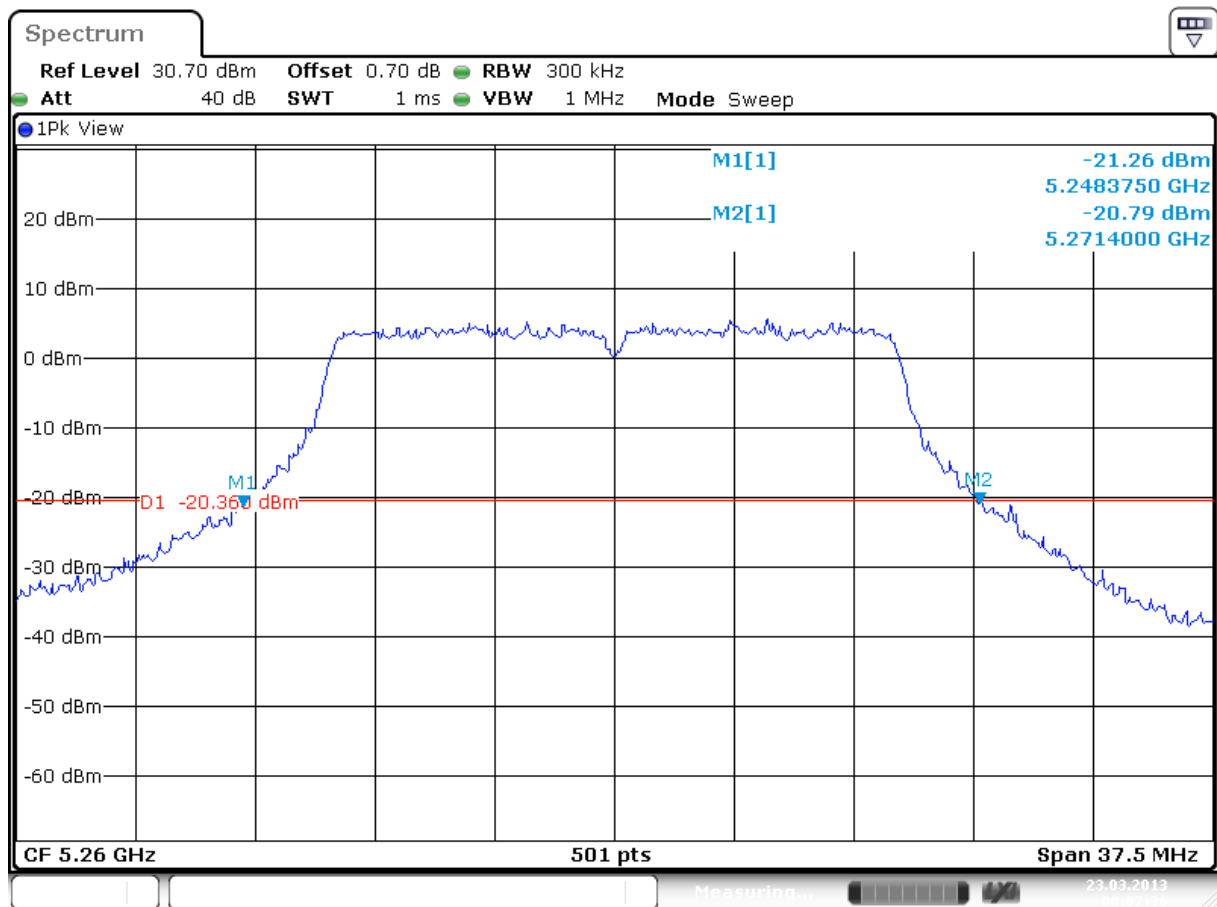
Test Report No.:

12121201.fcc03

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Operation mode: HT4 20 MHz, Antenna 1

Operating Frequency [MHz]	99% Bandwidth [kHz]	26dB Bandwidth [kHz]	Limit [kHz]	Plot number
5260	17964	23025	Not Applicable	A
5300	18113	25350	Not Applicable	B
5320	18038	23250	Not Applicable	C



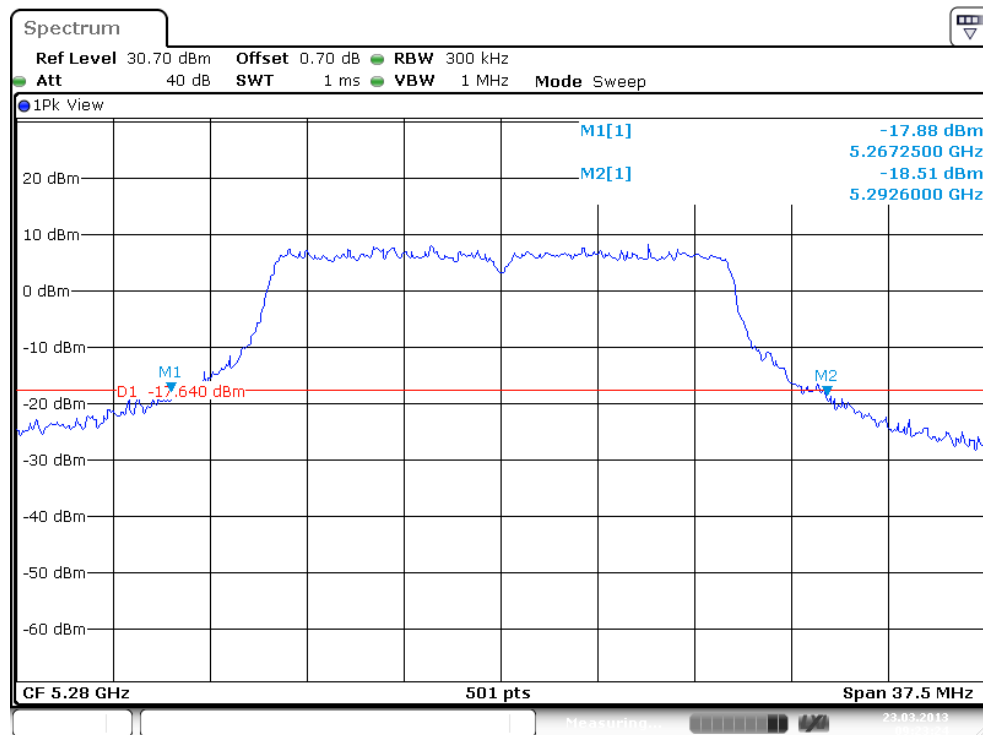
Date: 23.MAR.2013 08:07:36

Plot A

Test Report No.:

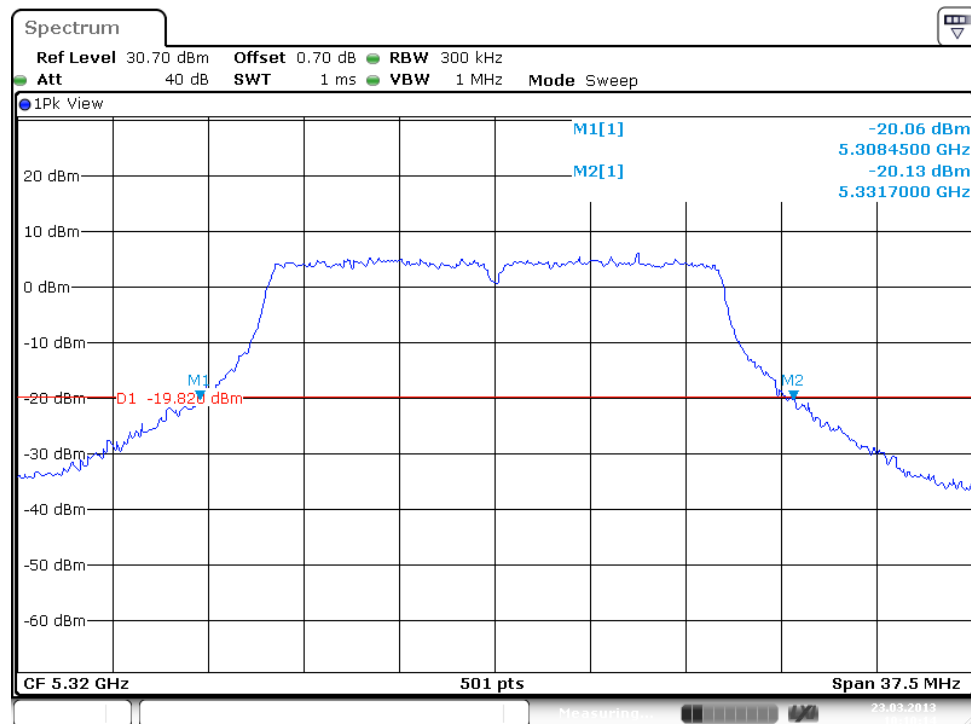
12121201.fcc03

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Date: 23.MAR.2013 09:23:24

Plot B



Date: 23.MAR.2013 10:10:14

Plot C

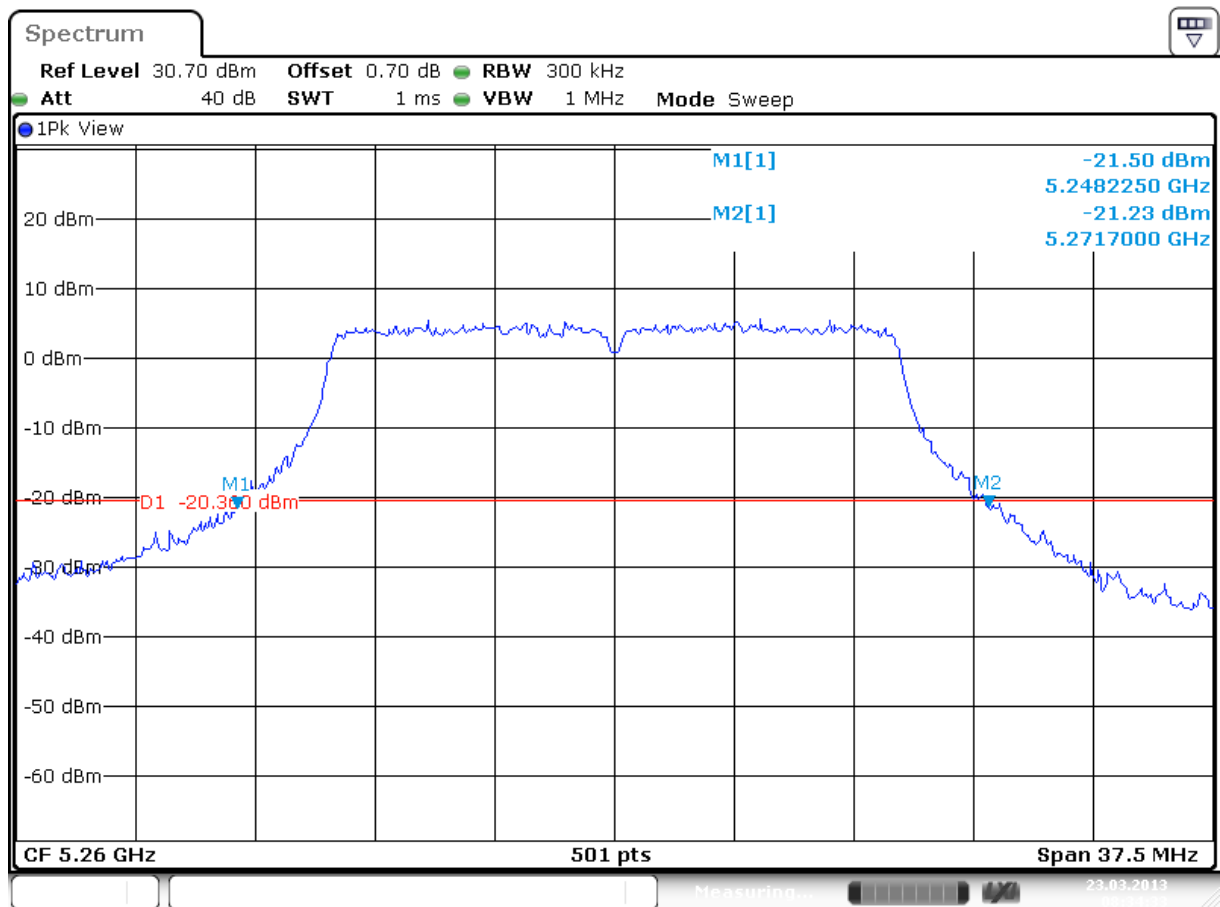
Test Report No.:

12121201.fcc03

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Operation mode: HT4 20 MHz, Antenna 2

Operating Frequency [MHz]	99% Bandwidth [kHz]	26dB Bandwidth [kHz]	Limit [kHz]	Plot number
5260	17964	23475	Not Applicable	A
5300	18188	25725	Not Applicable	B
5320	18038	24000	Not Applicable	C



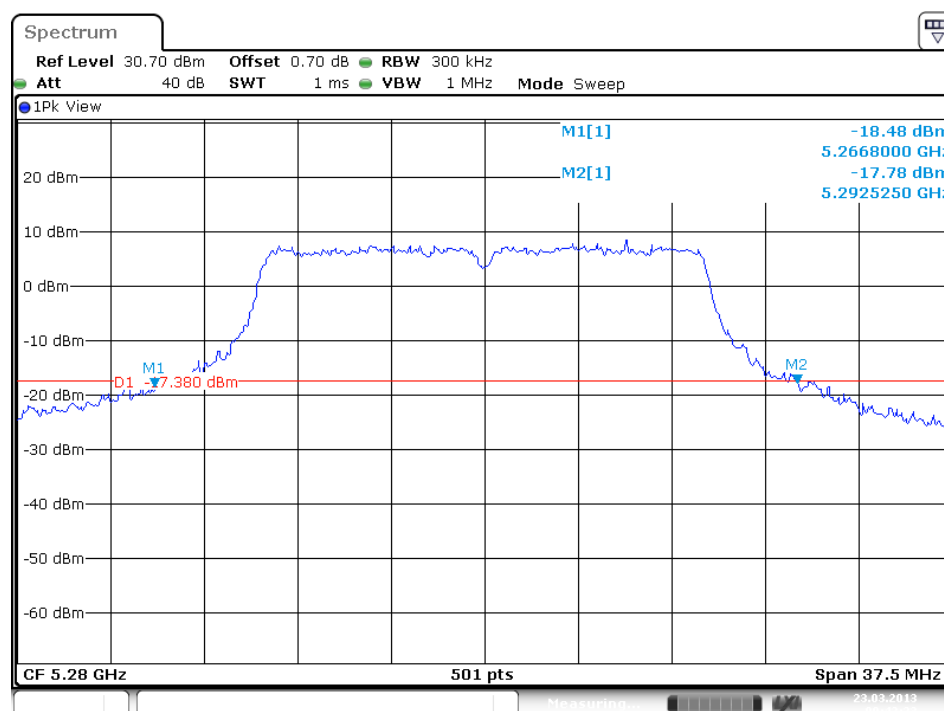
Date: 23.MAR.2013 08:34:33

Plot A

Test Report No.:

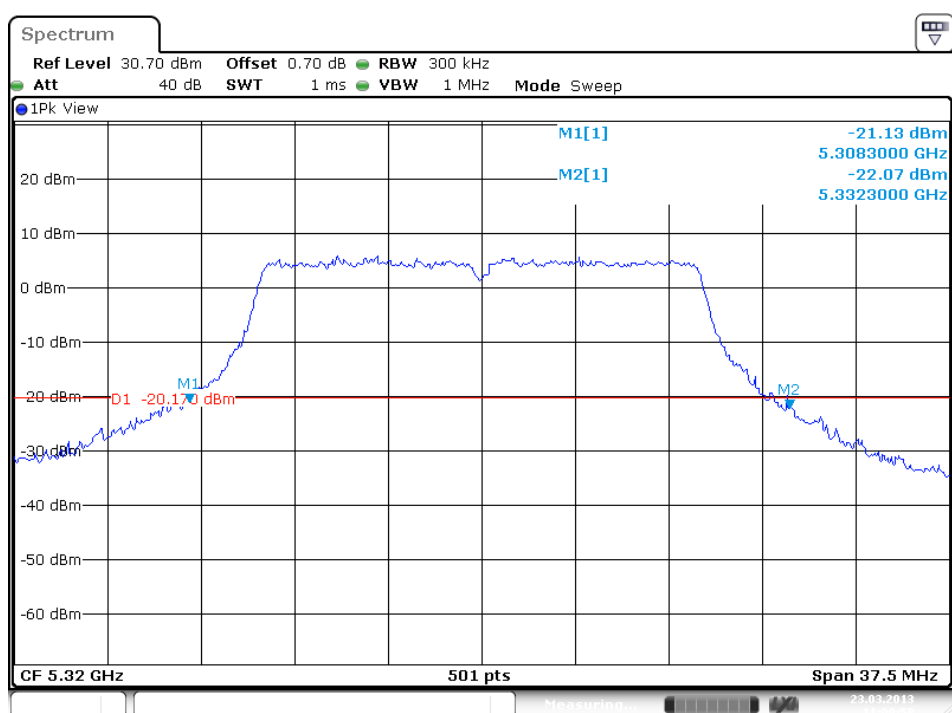
12121201.fcc03

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Date: 23.MAR.2013 09:42:23

Plot B



Date: 23.MAR.2013 11:09:58

Plot C

Test Report No.:

12121201.fcc03

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Operation mode: HT8 20 MHz, Antenna 1+2

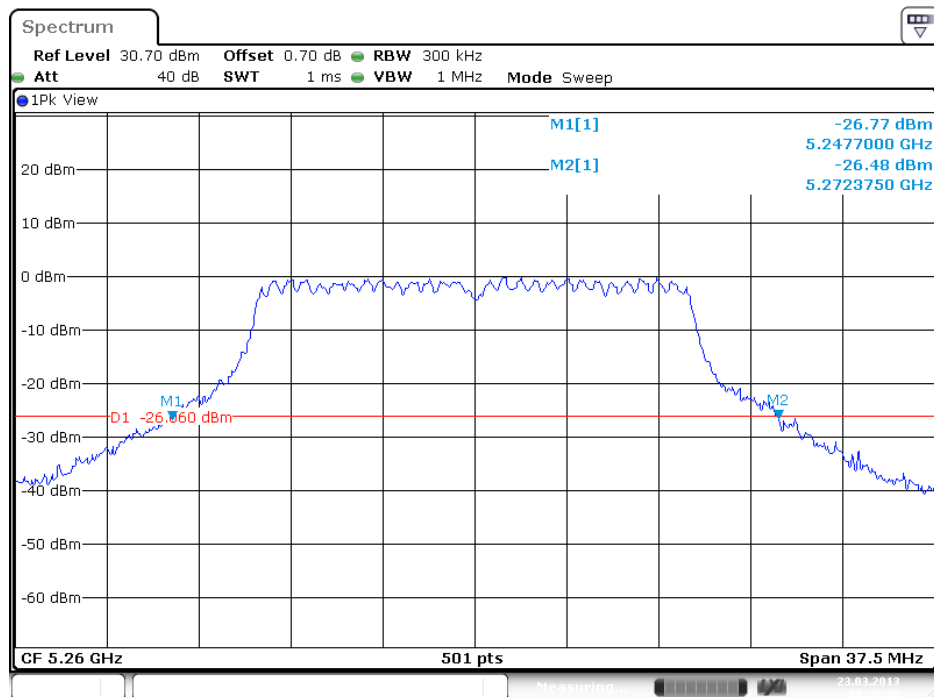
Operating Frequency [MHz]	99% Bandwidth [kHz]	26dB Bandwidth [kHz]	Limit [kHz]	Plot number
5260	18188	26625	Not Applicable	A
5300	18263	25500	Not Applicable	B
5320	18188	25575	Not Applicable	C

See plots on the next pages

Test Report No.:

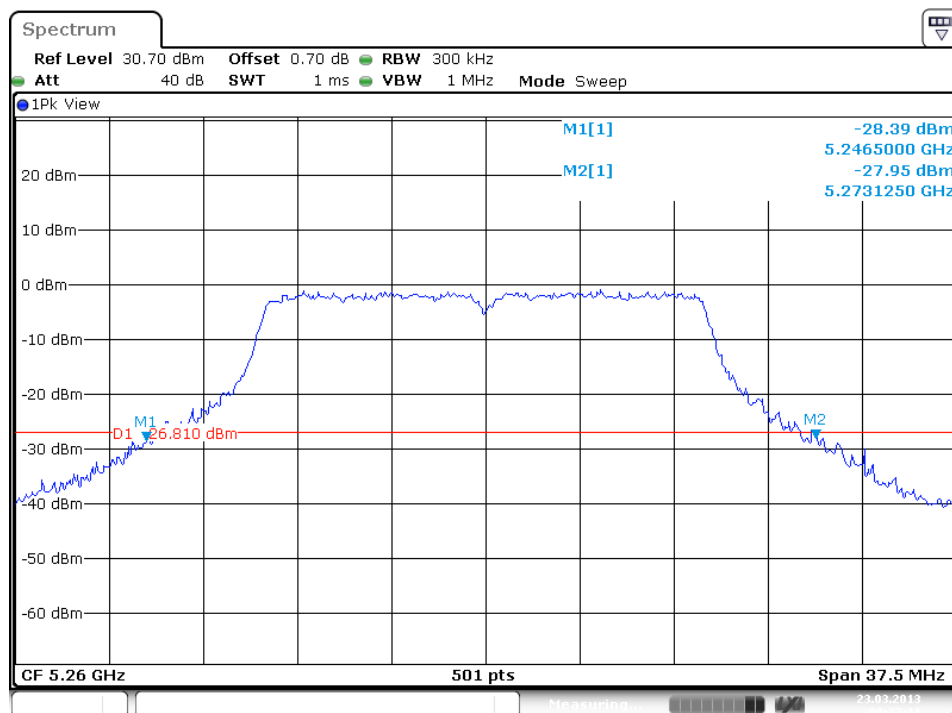
12121201.fcc03

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Date: 23.MAR.2013 08:22:29

Plot A1 Antenna 1



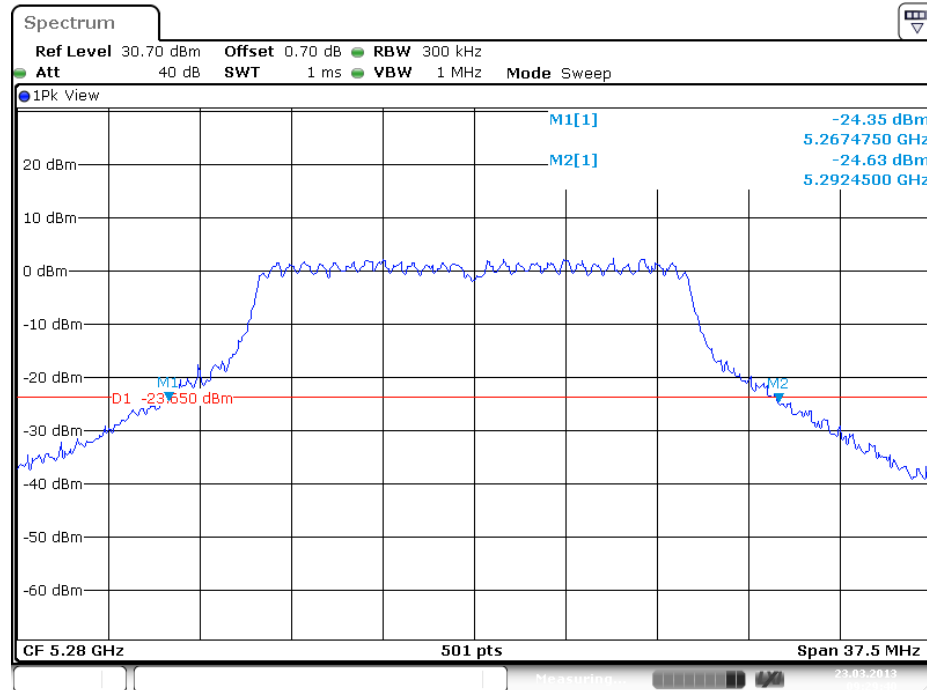
Date: 23.MAR.2013 08:27:11

Plot A2 Antenna 2

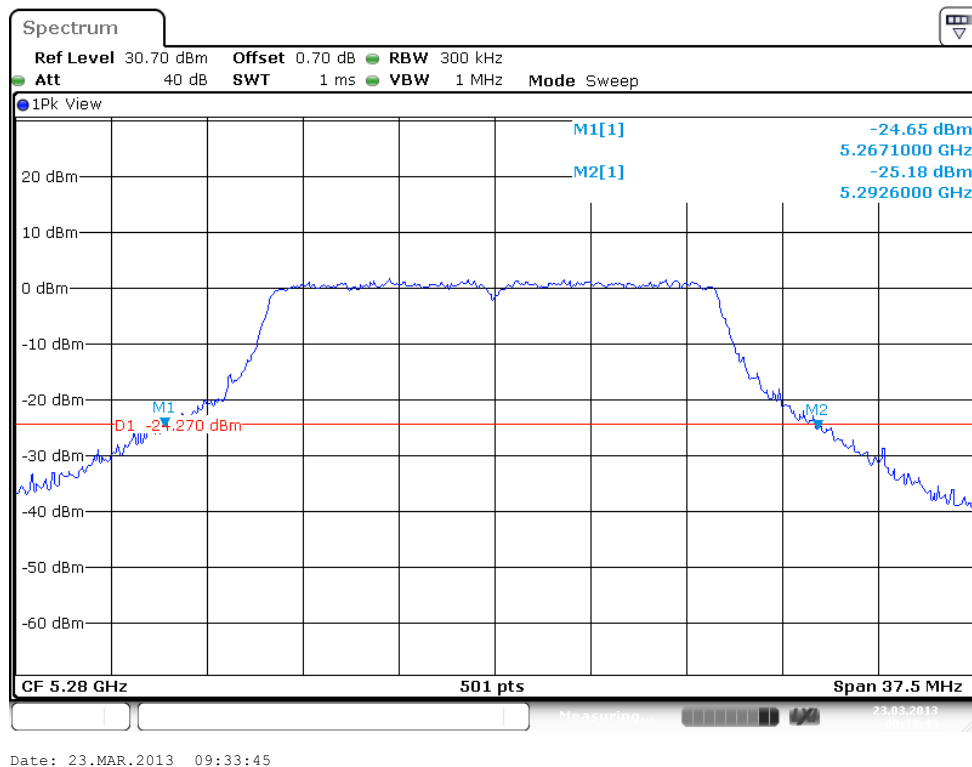
Test Report No.:

12121201.fcc03

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Plot B1 Antenna 1

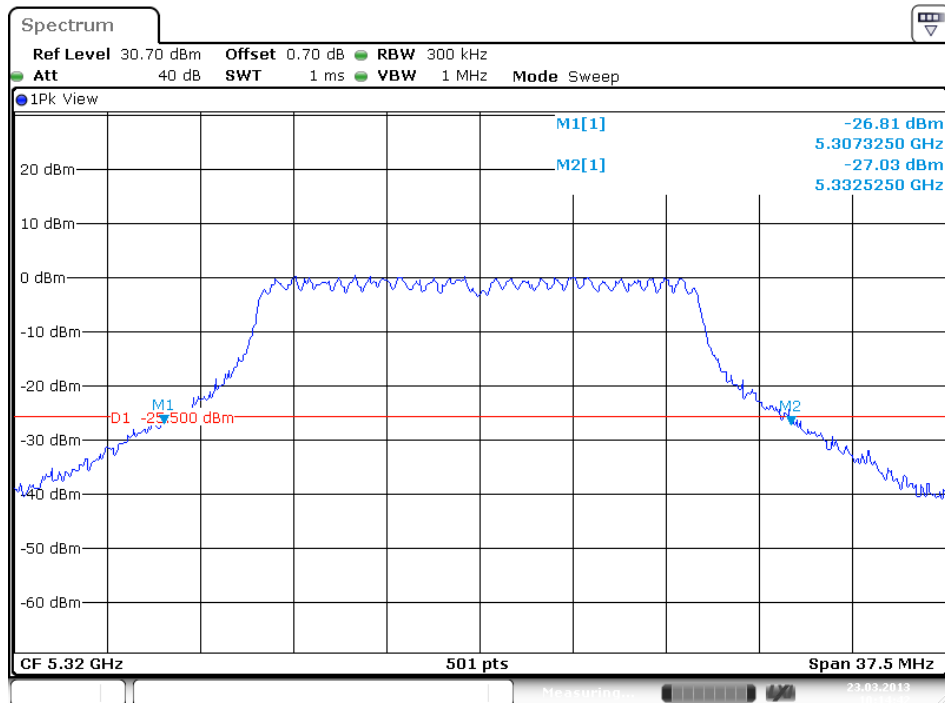


Plot B2 Antenna 2

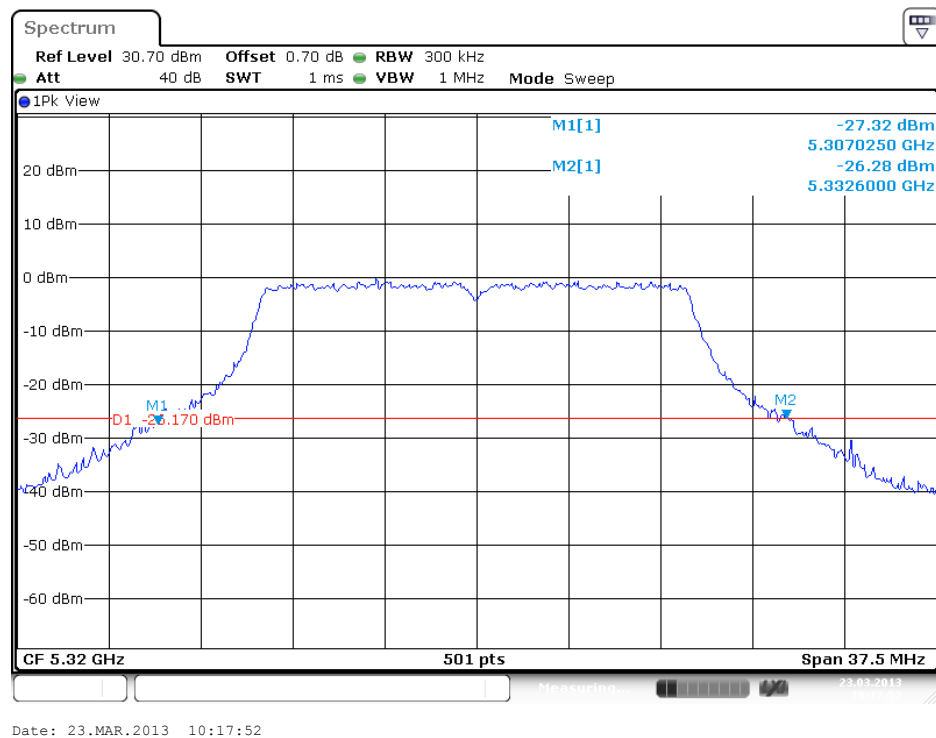
Test Report No.:

12121201.fcc03

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Plot C1 Antenna 1



Plot C2 Antenna 2

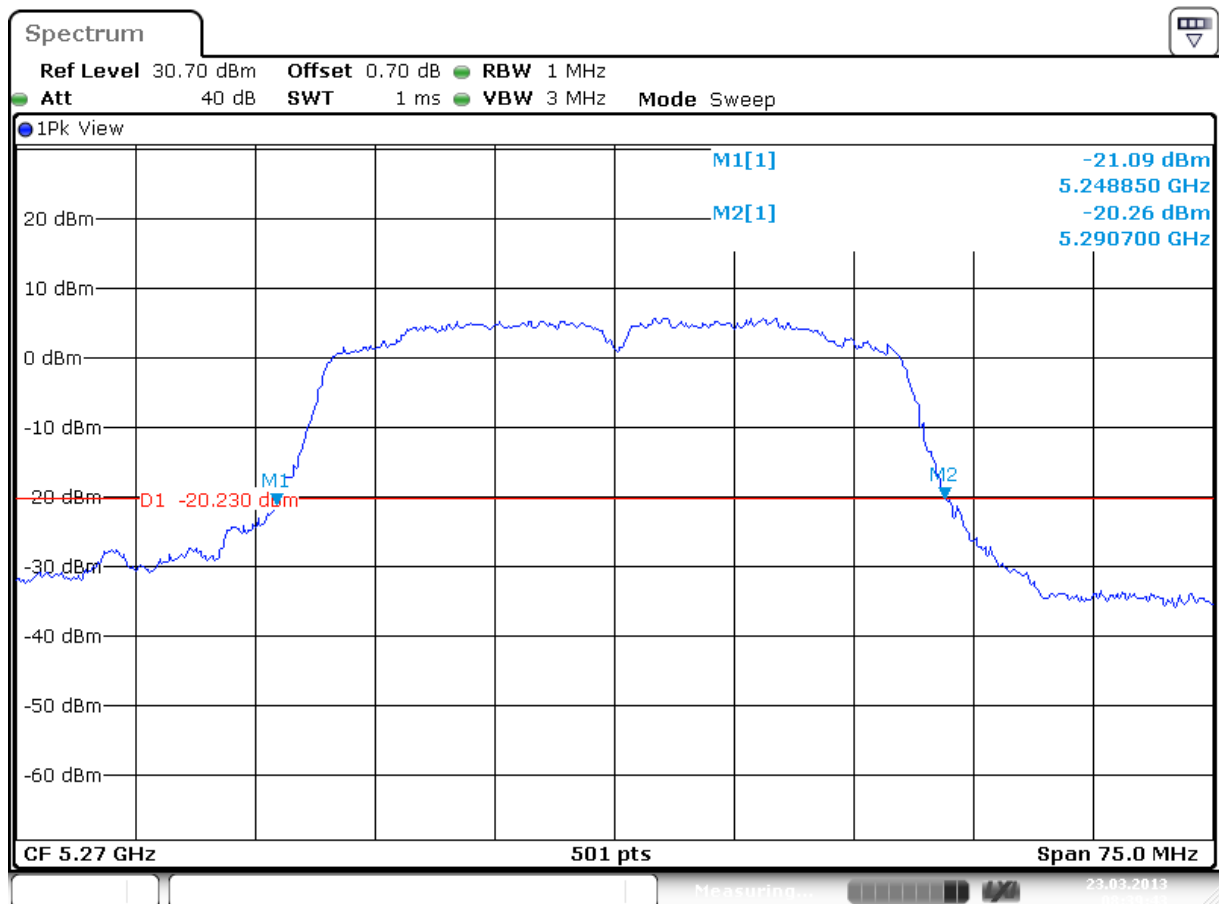
Test Report No.:

12121201.fcc03

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Operation mode: HT4 40 MHz, Antenna 1

Operating Frequency [MHz]	99% Bandwidth [kHz]	26dB Bandwidth [kHz]	Limit [kHz]	Plot number
5270	36227	41850	Not Applicable	A
5310	36242	41985	Not Applicable	B



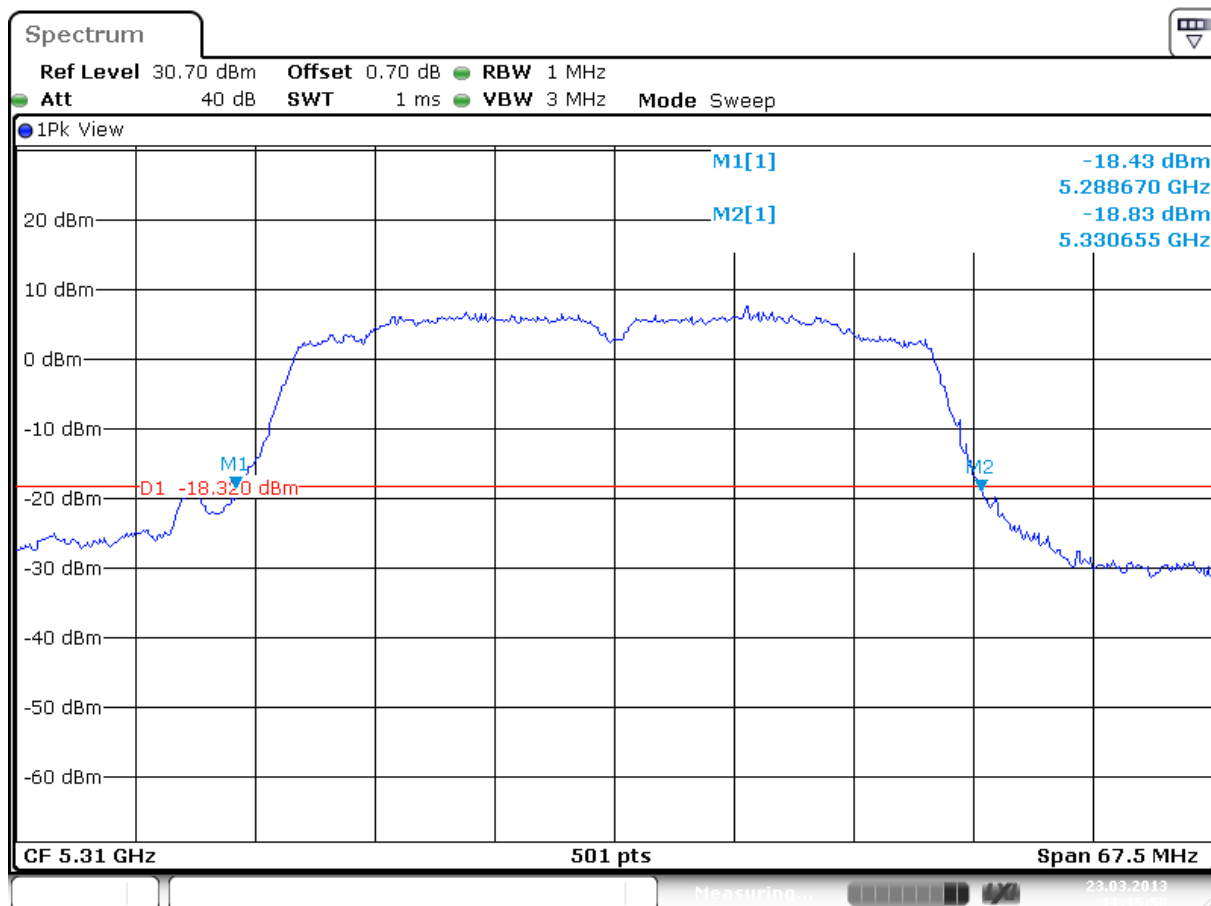
Date: 23.MAR.2013 08:39:43

Plot A

Test Report No.:

12121201.fcc03

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Date: 23.MAR.2013 11:15:50

Plot B

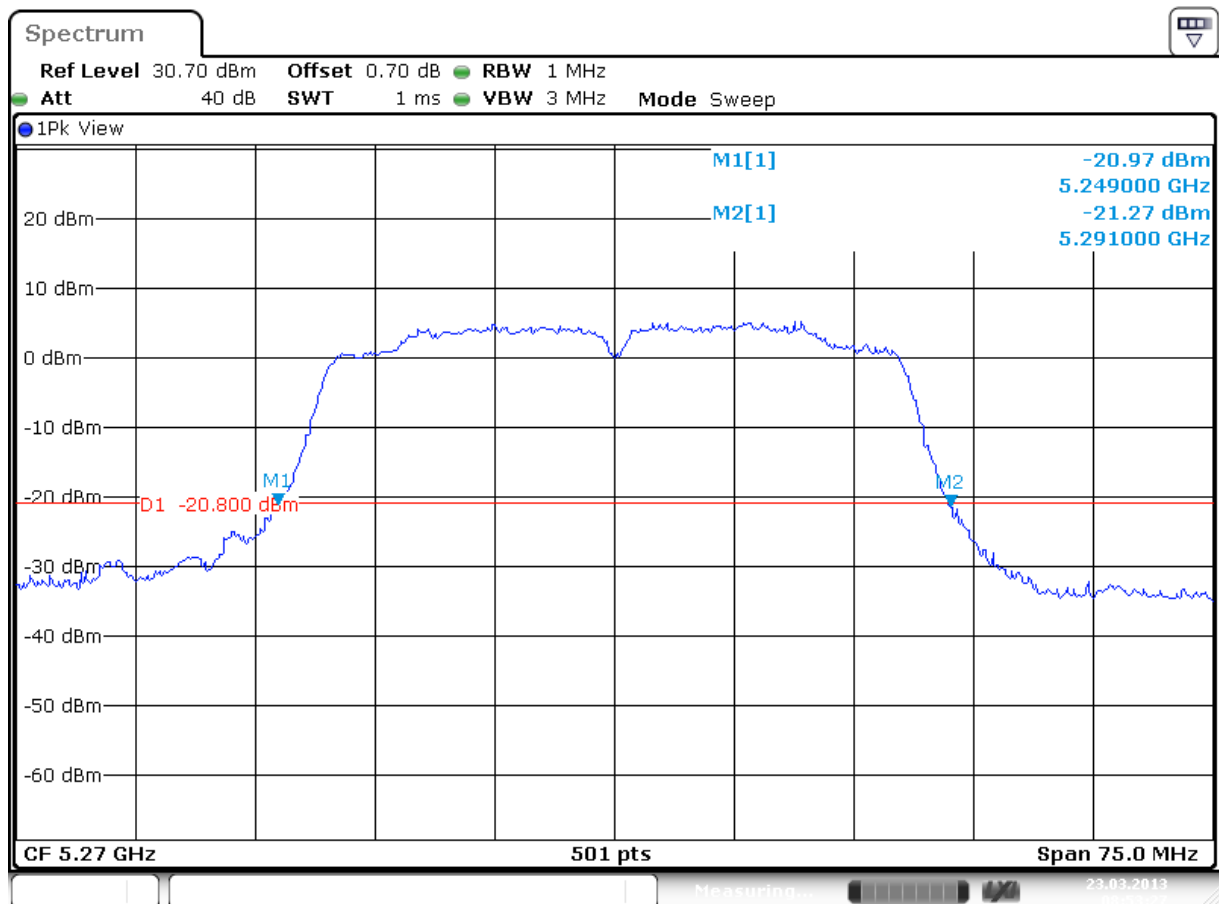
Test Report No.:

12121201.fcc03

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Operation mode: HT4 40 MHz, Antenna 2

Operating Frequency [MHz]	99% Bandwidth [kHz]	26dB Bandwidth [kHz]	Limit [kHz]	Plot number
5270	36377	42000	Not Applicable	A
5310	36242	42390	Not Applicable	B



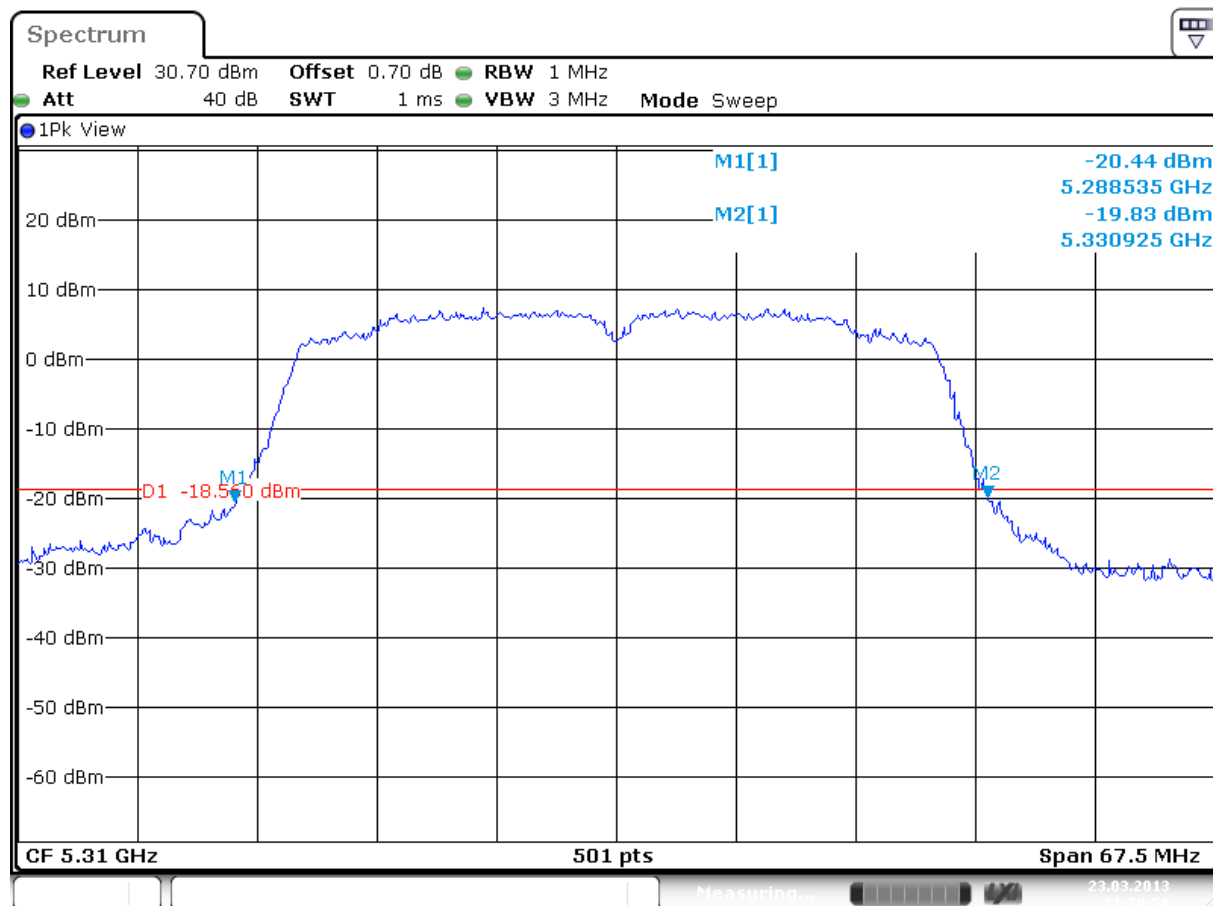
Date: 23.MAR.2013 08:53:27

Plot A

Test Report No.:

12121201.fcc03

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Date: 23.MAR.2013 11:30:58

Plot B

Test Report No.:

12121201.fcc03

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Operation mode: HT8 40 MHz, Antenna 1+2

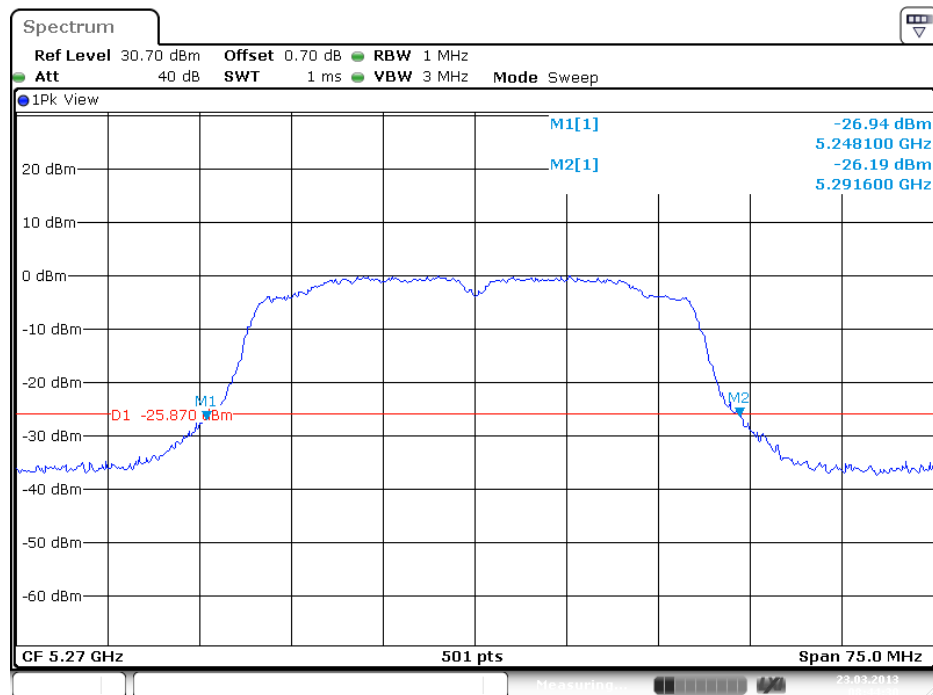
Operating Frequency [MHz]	99% Bandwidth [kHz]	26dB Bandwidth [kHz]	Limit [kHz]	Plot number
5270	36227	43500	Not Applicable	A
5310	36242	43335	Not Applicable	B

See plots on the next pages

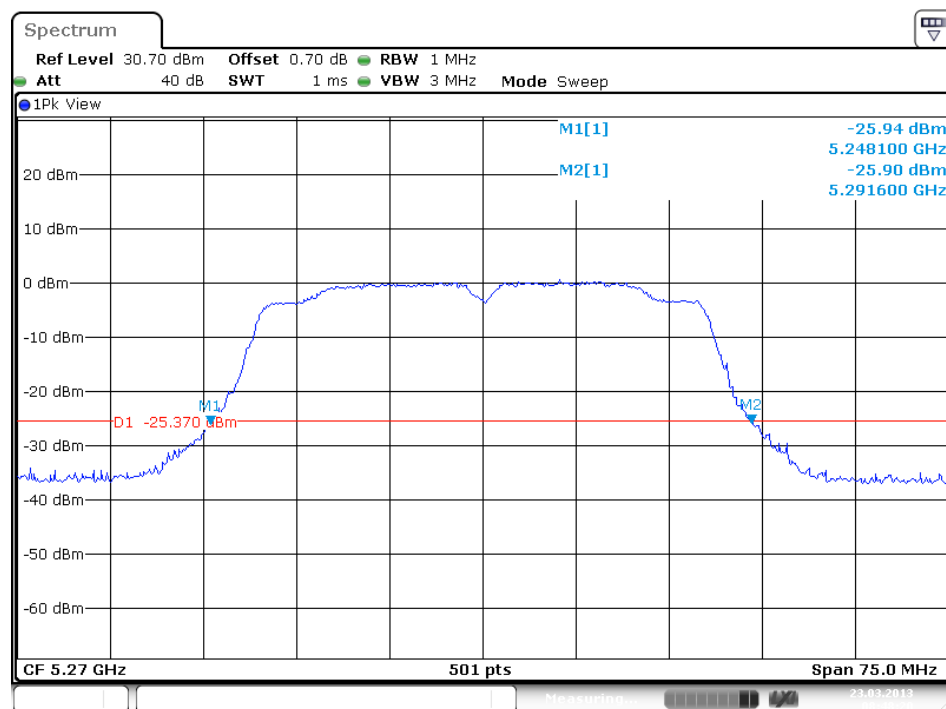
Test Report No.:

12121201.fcc03

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Plot A1 Antenna 1

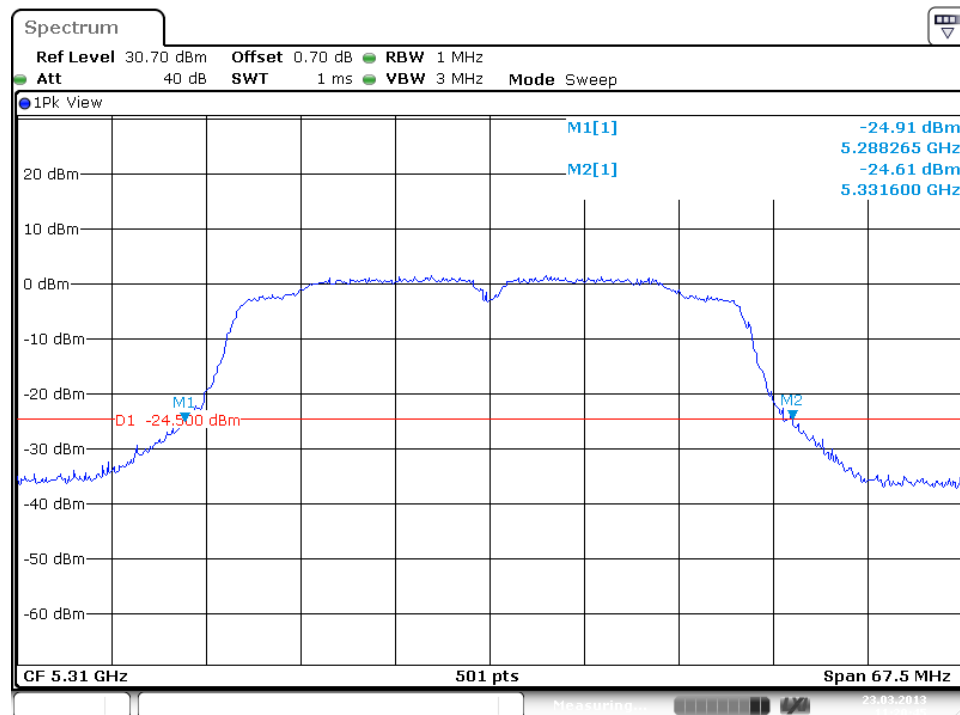


Plot A2 Antenna 2

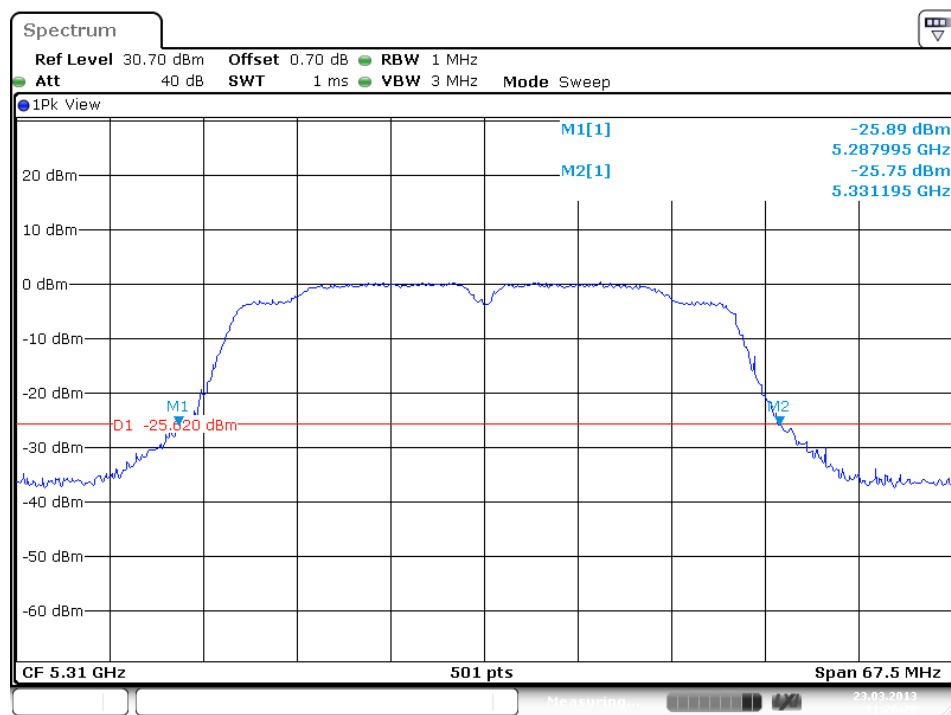
Test Report No.:

12121201.fcc03

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Plot B1 Antenna 1



Plot B2 Antenna 2

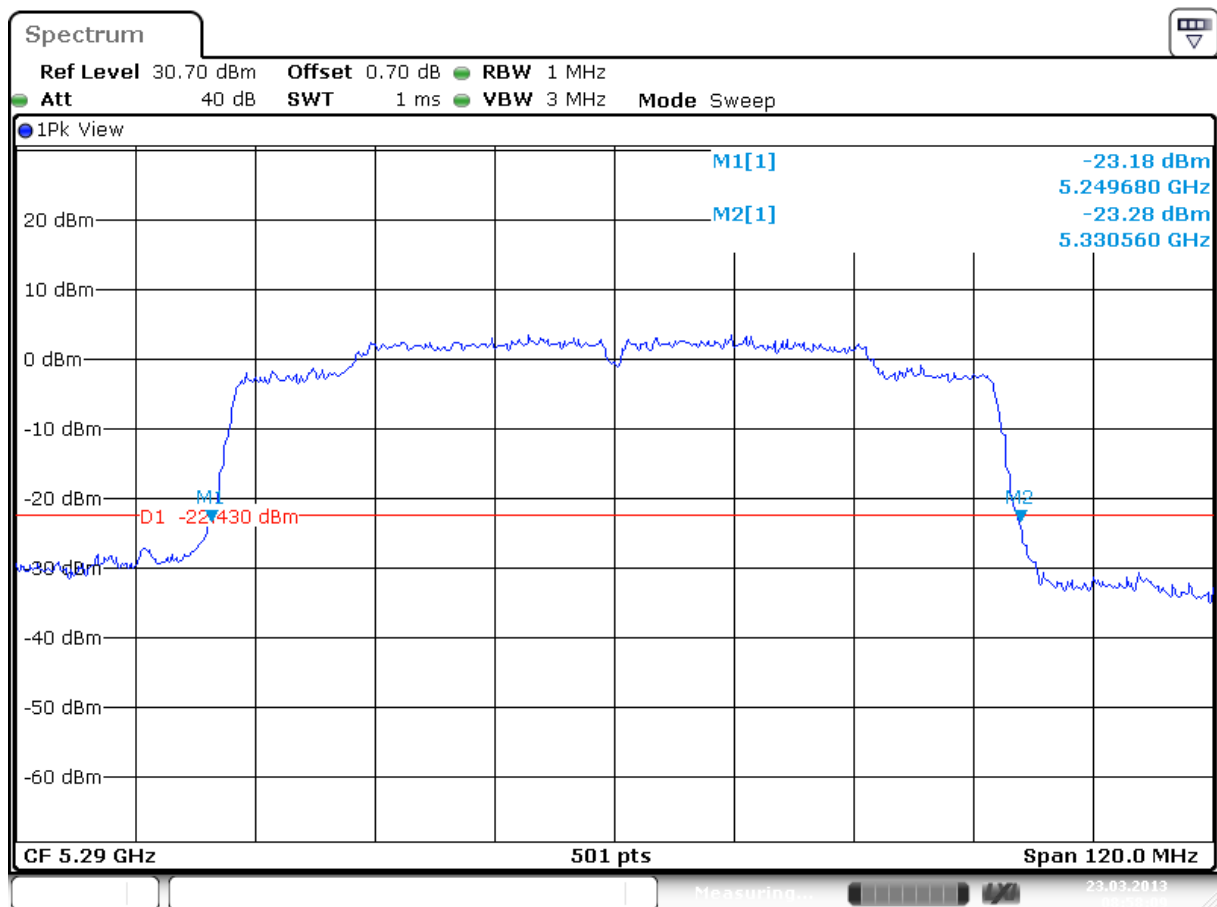
Test Report No.:

12121201.fcc03

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Operation mode: VHT6 80 MHz, Antenna 1

Operating Frequency [MHz]	99% Bandwidth [kHz]	26dB Bandwidth [kHz]	Limit [kHz]	Plot number
5290	74730	80880	Not Applicable	A



Date: 23.MAR.2013 08:58:08

Plot A

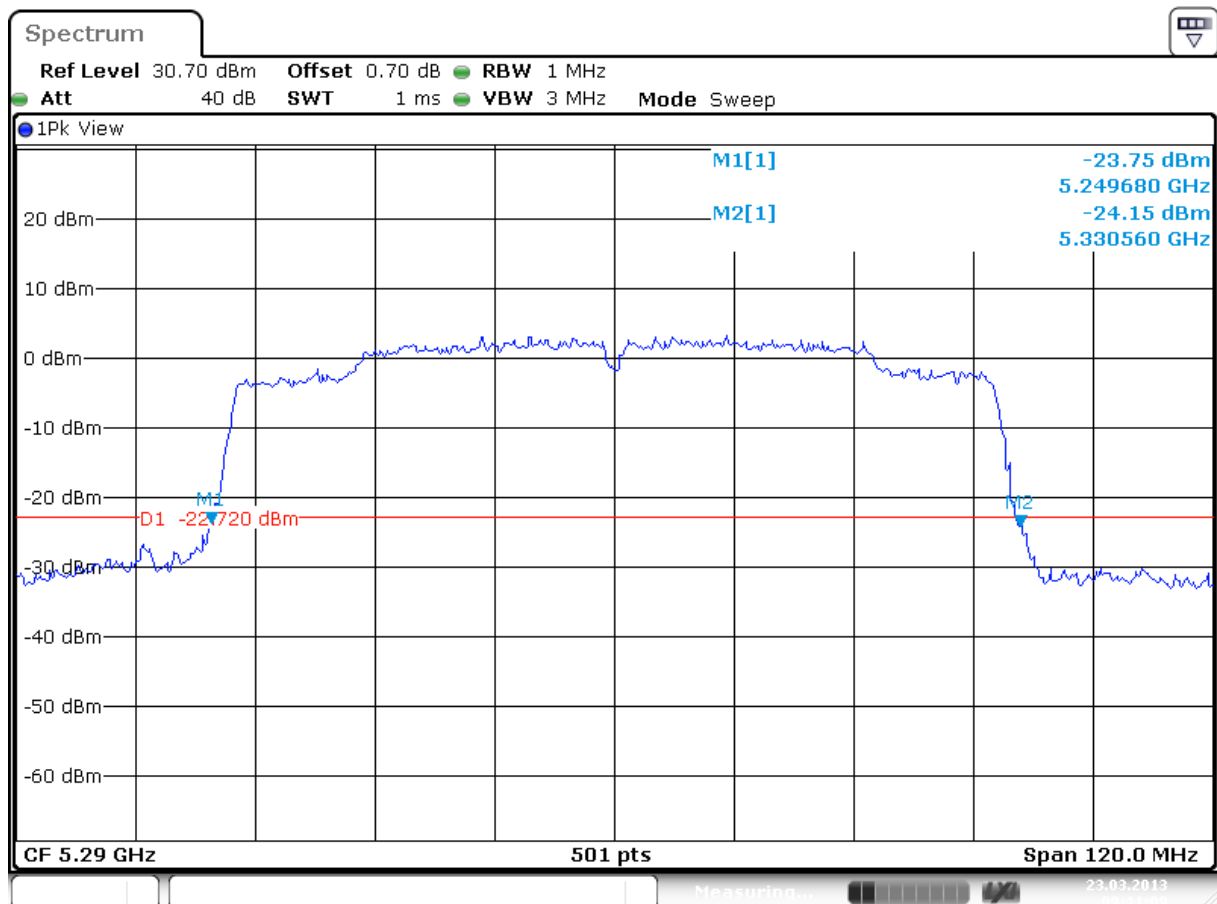
Test Report No.:

12121201.fcc03

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Operation mode: VHT6 80 MHz, Antenna 2

Operating Frequency [MHz]	99% Bandwidth [kHz]	26dB Bandwidth [kHz]	Limit [kHz]	Plot number
5290	74970	80880	Not Applicable	A



Date: 23.MAR.2013 09:11:09

Plot A

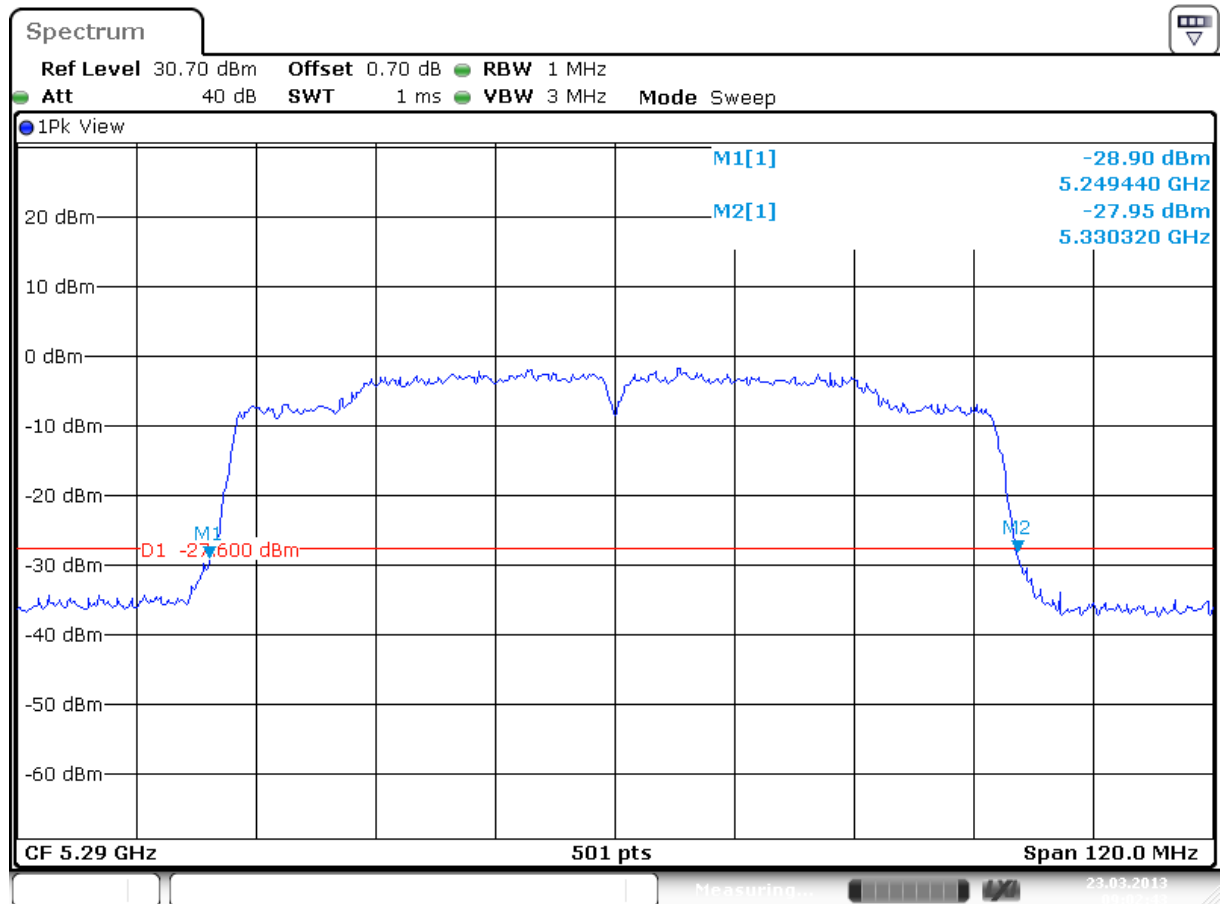
Test Report No.:

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Operation mode: VHT6 80 MHz, Antenna 1+2

Operating Frequency [MHz]	99% Bandwidth [kHz]	26dB Bandwidth [kHz]	Limit [kHz]	Plot number
5290	74970	81600	Not Applicable	A



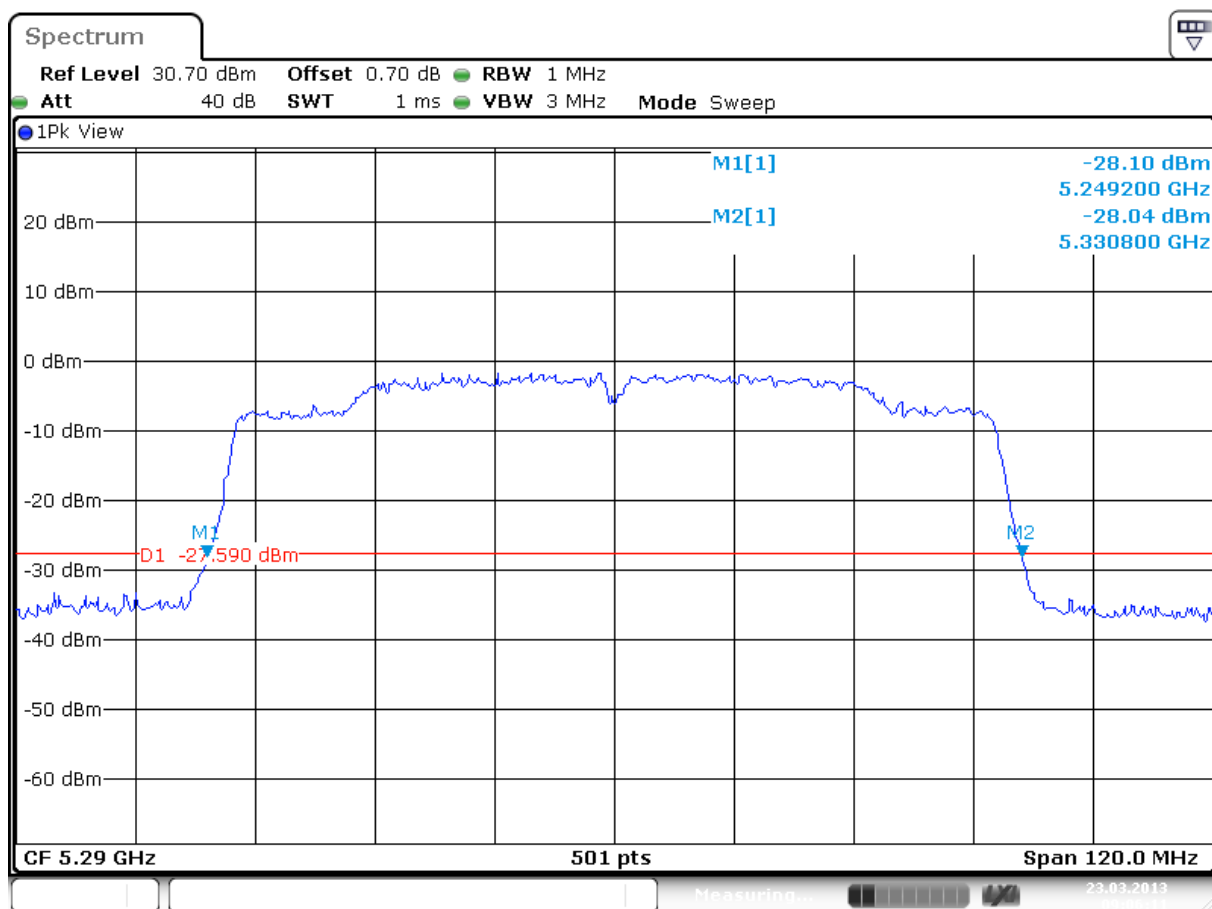
Date: 23.MAR.2013 09:02:44

Plot A1 Antenna 1

Test Report No.:

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Date: 23.MAR.2013 09:06:11

Plot A2 Antenna 2

Test Report No.:

12121201.fcc03

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6.2.3 Peak excursion ratio of the modulation envelope

RESULT: Pass

Date of testing: 2013-03-23

Requirements:

FCC 15.247(a)(6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

Test procedure:

ANSI C63.10-2009

KDB Publication No.789033 D01 v01r02 9/26/2012 .

KDB Publication No. 644545 D01 and D02.

Compliance with the peak excursion requirement of Section 15.407(a)(6) is demonstrated by confirming that the ratio of the maximum of the peak-max-hold spectrum to the maximum of the average spectrum for continuous transmission did not exceed 13 dB.

Testing each modulation mode on a single channel is sufficient to demonstrate compliance with the peak excursion requirement.

A spectrum analyzer was connected to the antenna port of the EUT. The analyzer resolution bandwidth was set to 1 MHz and the video bandwidth was set to 3MHz. The sweep time was set to auto couple and the trace was allowed to stabilize before making the final measurement. By using the Peak marker function the maximum amplitude was determined. The final measurement takes into account the loss generated by all the involved cables.

The Peak marker value is compared with the PPSD value found in section and the difference is calculated. The resulting difference may not exceed 13 dB. The limit line D1 in the plots shown on the next pages show the actual limit based on PPSD value + 13.

Peak excursion (dB) = Peak of spectrum (dBm) – PPSD(dBm)

Test Report No.:

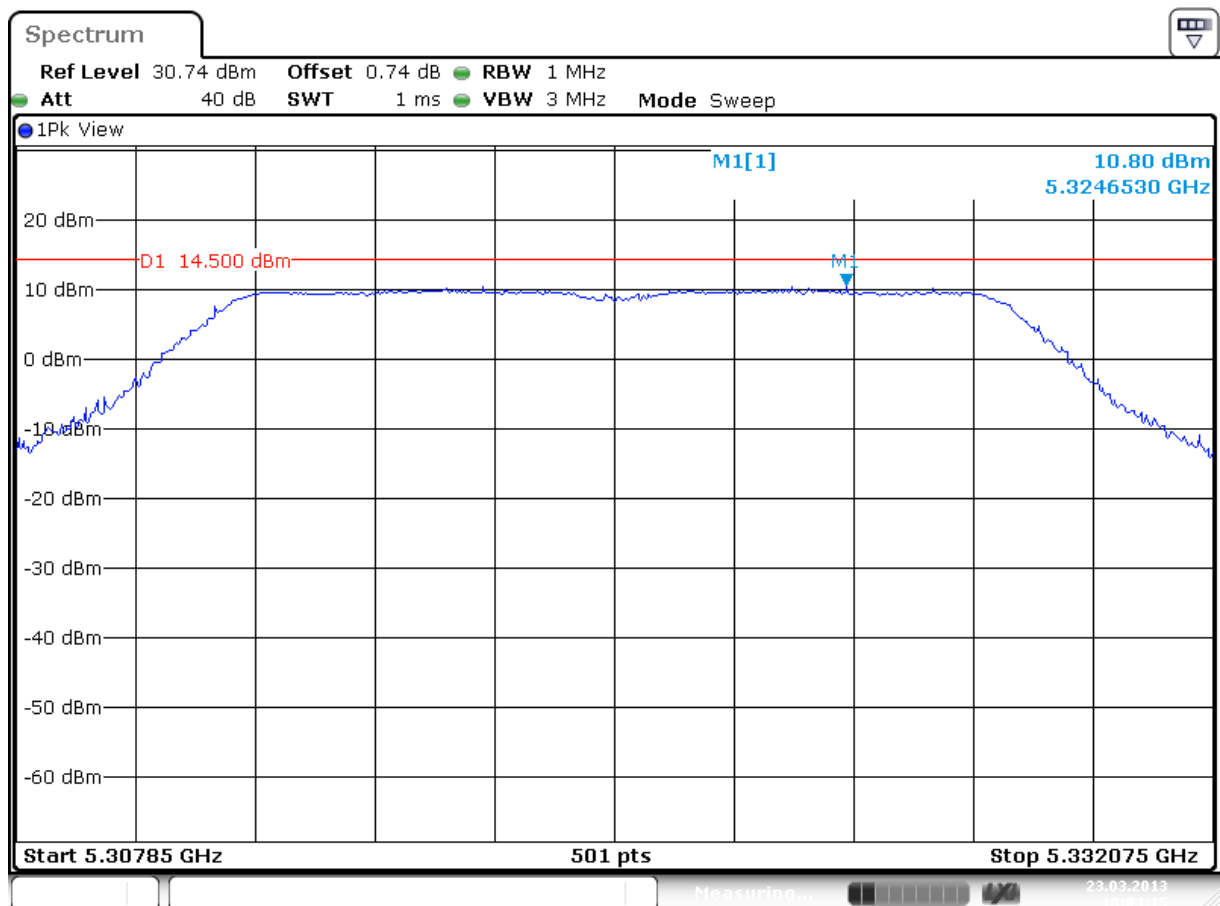
12121201.fcc03

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Peak excursion of the modulation envelope

Operation mode: 6Mb OFDM, Antenna 1

Frequency [MHz]	Peak of spectrum [dBm]	PPSD/MHz [dBm]	Peak excursion [dB]	Limit [dB]	Result
5320	10.8	1.5	9.3	13	Pass



Date: 23.MAR.2013 10:04:15

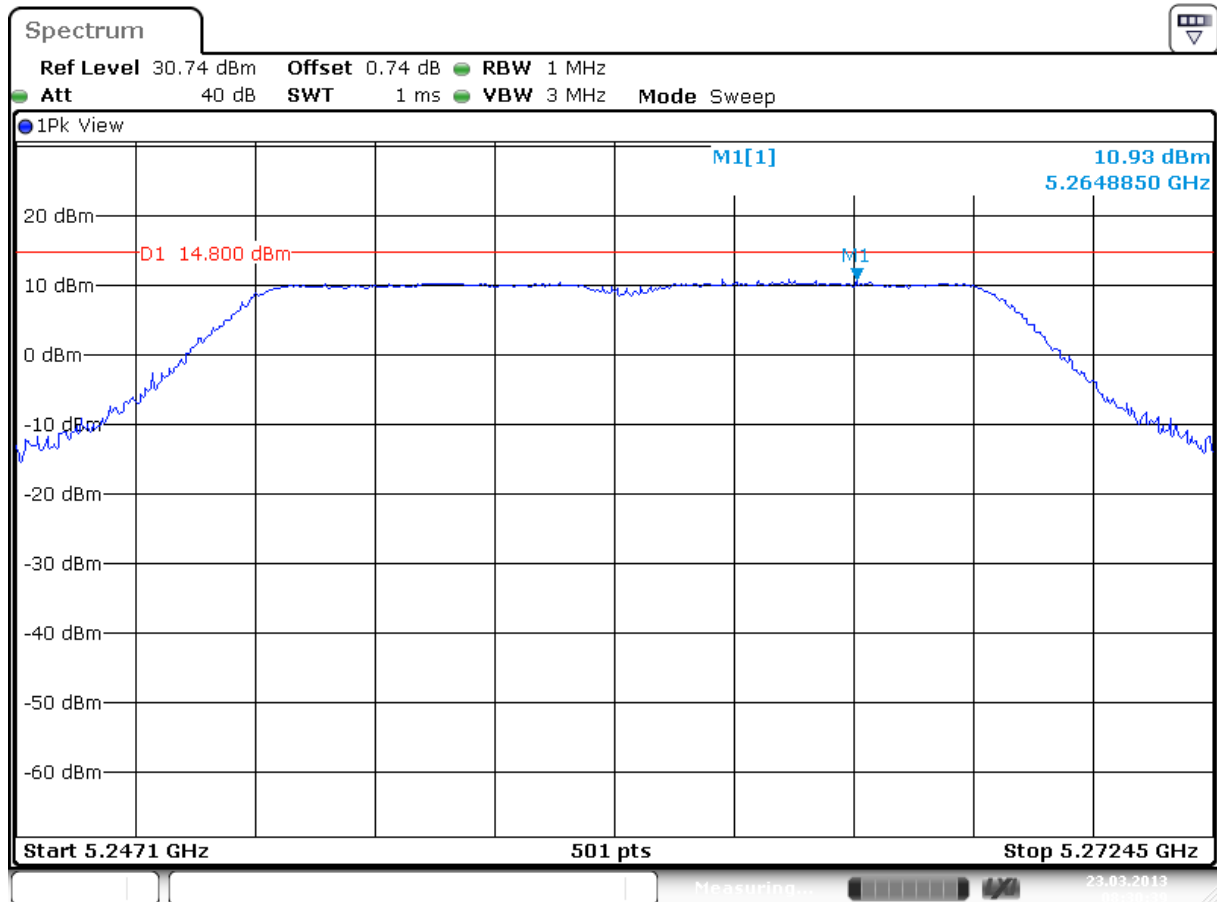
Test Report No.:

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Operation mode: 6Mb OFDM, Antenna 2

Frequency [MHz]	Peak of spectrum [dBm]	PPSD/MHz [dBm]	Peak excursion [dB]	Limit [dB]	Result
5260	10.9	1.8	9.1	13	Pass



Date: 23.MAR.2013 08:30:39

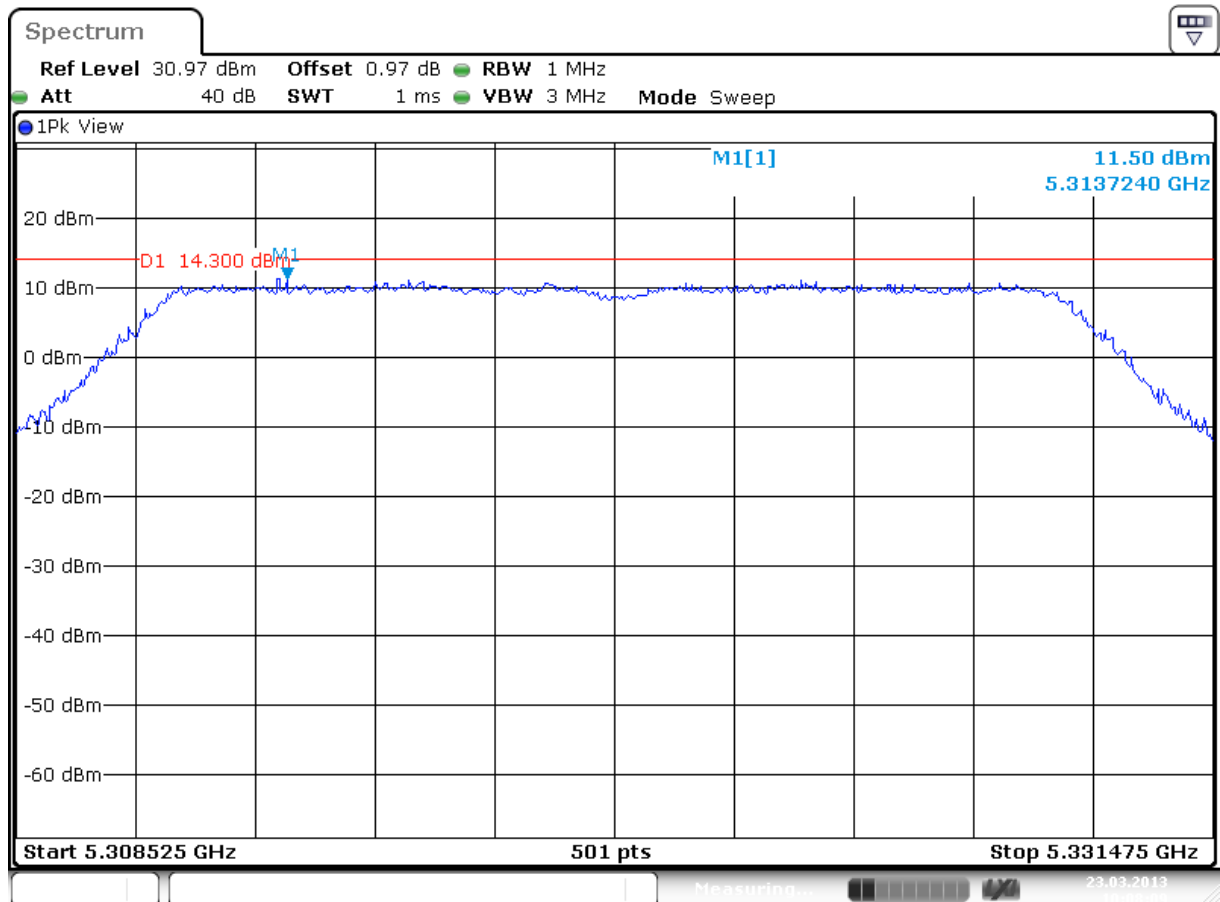
Test Report No.:

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Operation mode: HT4 20 MHz, Antenna 1

Frequency [MHz]	Peak of spectrum [dBm]	PPSD/MHz [dBm]	Peak excursion [dB]	Limit [dB]	Result
5320	11.5	1.3	10.2	13	Pass



Date: 23.MAR.2013 10:08:09

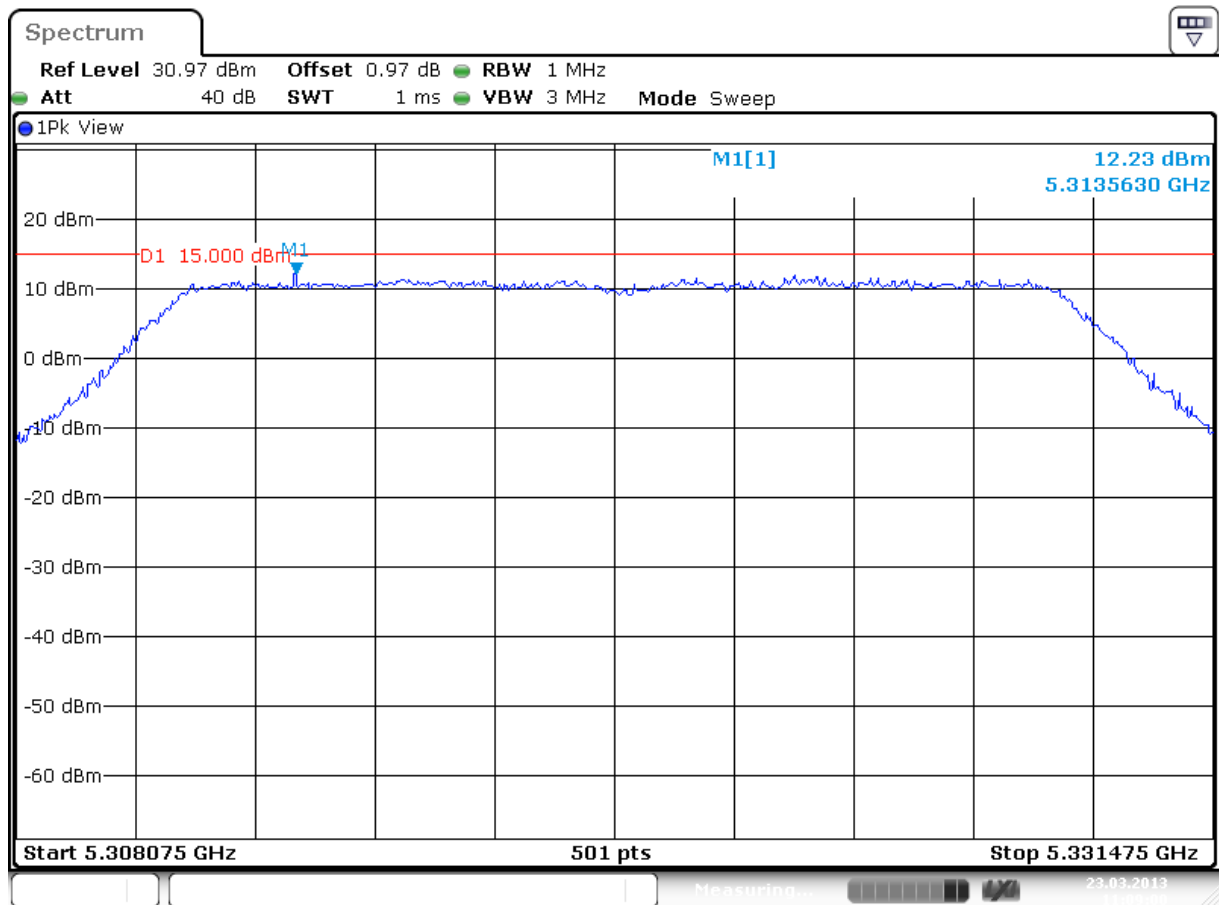
Test Report No.:

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Operation mode: HT4 20 MHz, Antenna 2

Frequency [MHz]	Peak of spectrum [dBm]	PPSD/MHz [dBm]	Peak excursion [dB]	Limit [dB]	Result
5320	12.2	2.0	10.2	13	Pass



Date: 23.MAR.2013 11:09:00

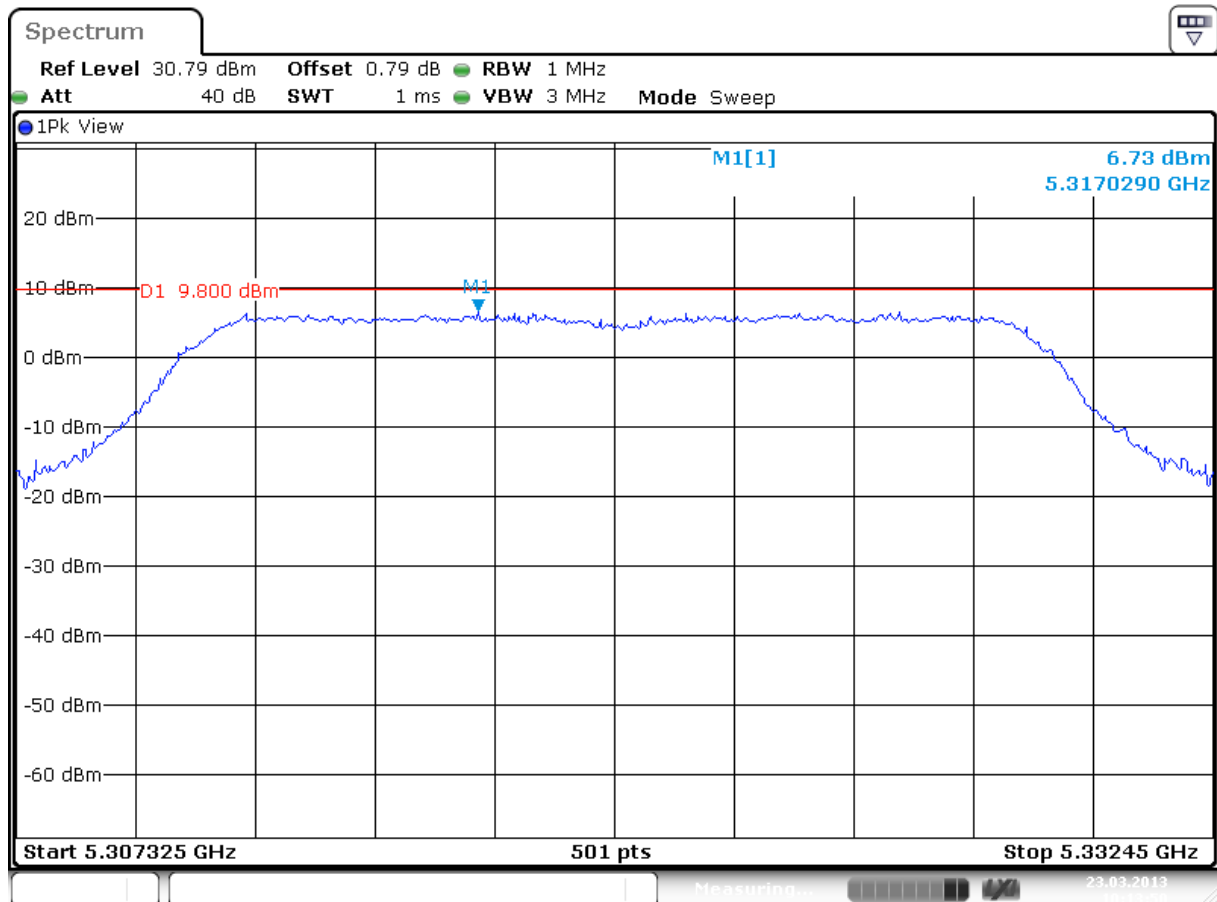
Test Report No.:

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Operation mode: HT8 20 MHz, Antenna 1+2

Frequency [MHz]	Peak of spectrum Ant1 + Ant2 [dBm]	PPSD/MHz [dBm]	Peak excursion [dB]	Limit [dB]	Result
5300	6.7 / 5.4	-0.2	9.9	13	Pass



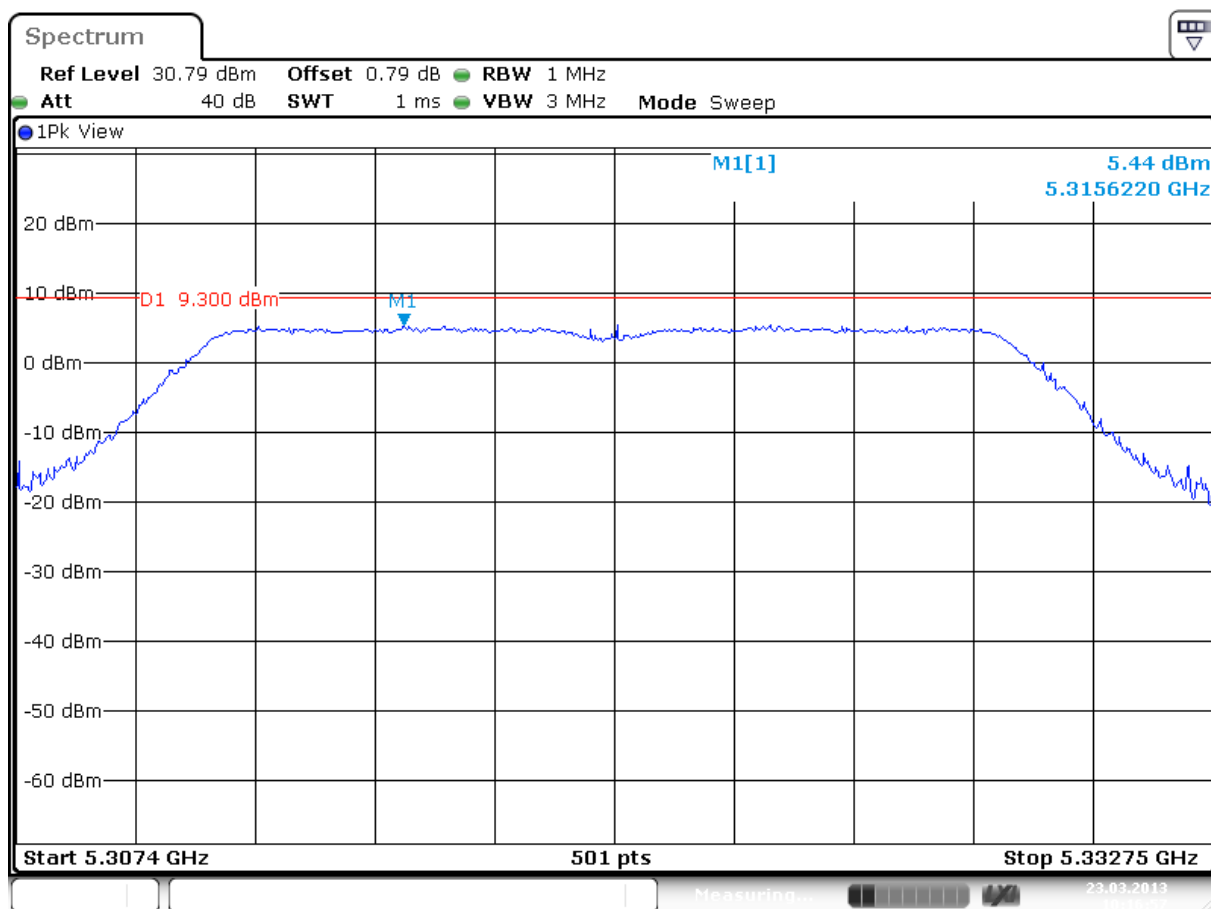
Date: 23.MAR.2013 10:13:50

Plot A Antenna 1

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Date: 23.MAR.2013 10:16:58

Plot B Antenna 2

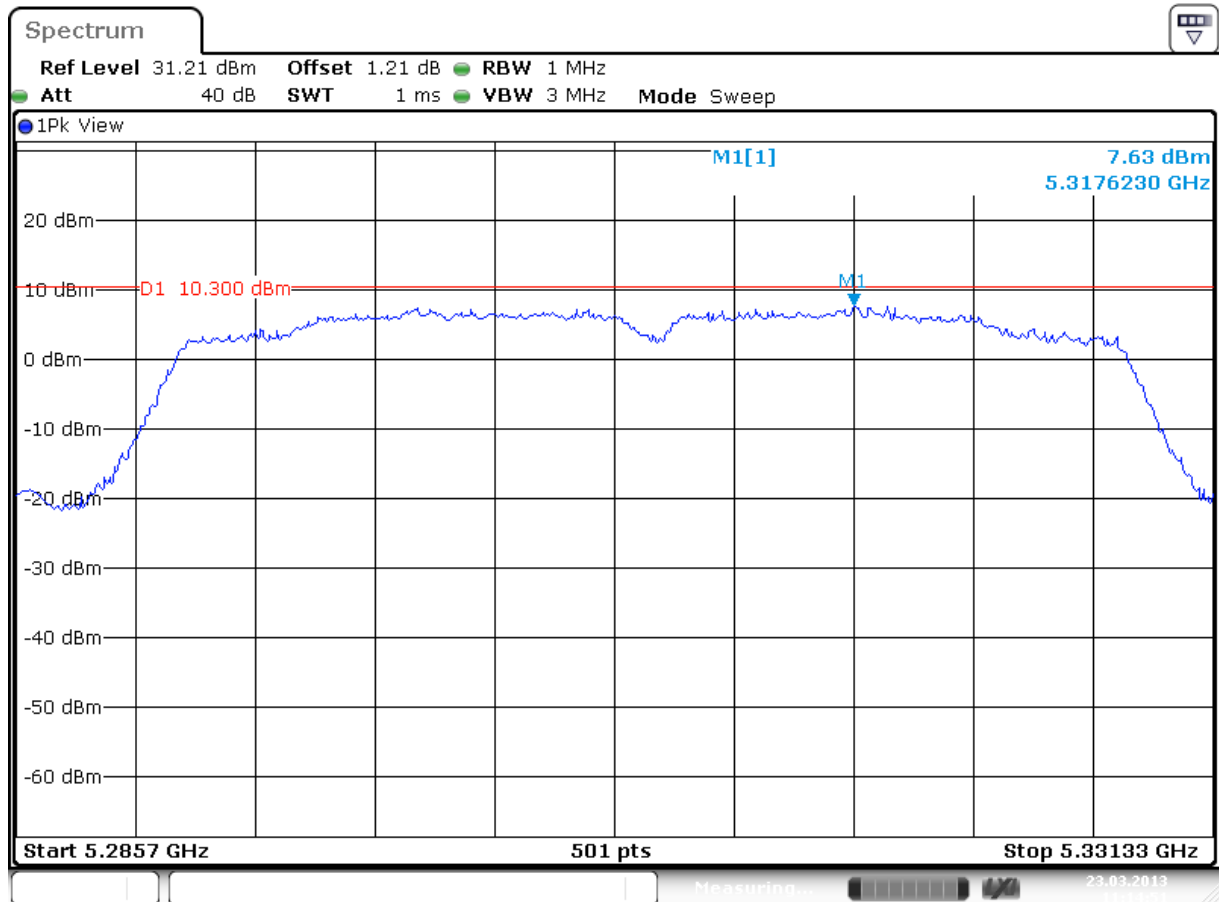
Test Report No.:

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Operation mode: HT4 40 MHz, Antenna 1

Frequency [MHz]	Peak of spectrum [dBm]	PPSD/MHz [dBm]	Peak excursion [dB]	Limit [dB]	Result
5310	7.6	-2.7	10.3	13	Pass



Date: 23.MAR.2013 11:14:52

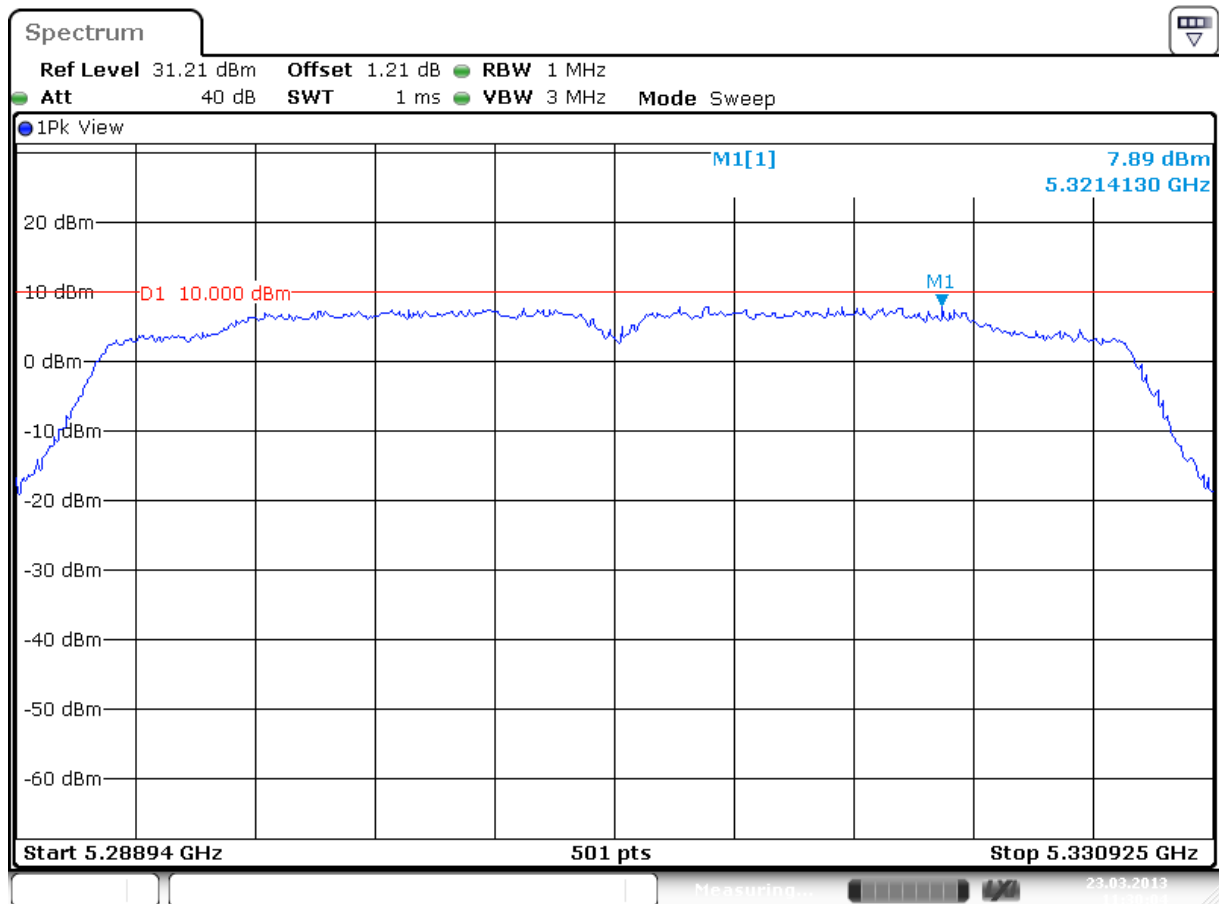
Test Report No.:

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Operation mode: HT4 40 MHz, Antenna 2

Frequency [MHz]	Peak of spectrum [dBm]	PPSD/MHz [dBm]	Peak excursion [dB]	Limit [dB]	Result
5310	7.9	-3.0	10.9	13	Pass



Date: 23.MAR.2013 11:30:04

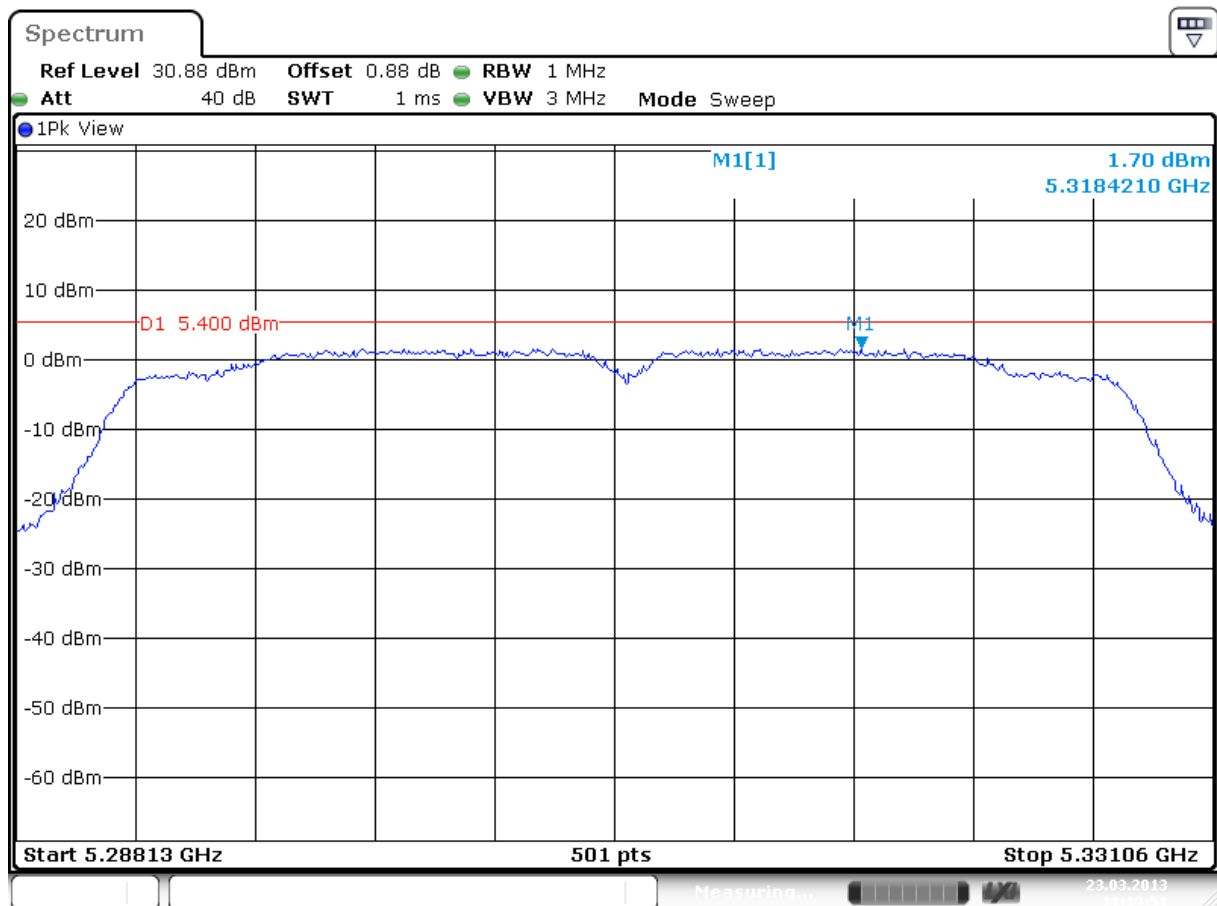
Test Report No.:

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Operation mode: HT8 40 MHz, Antenna 1+2

Frequency [MHz]	Peak of spectrum Ant1 + Ant2 [dBm]	PPSD/MHz [dBm]	Peak excursion [dB]	Limit [dB]	Result
5310	1.7 / 1.0	-4.6	9.3	13	Pass



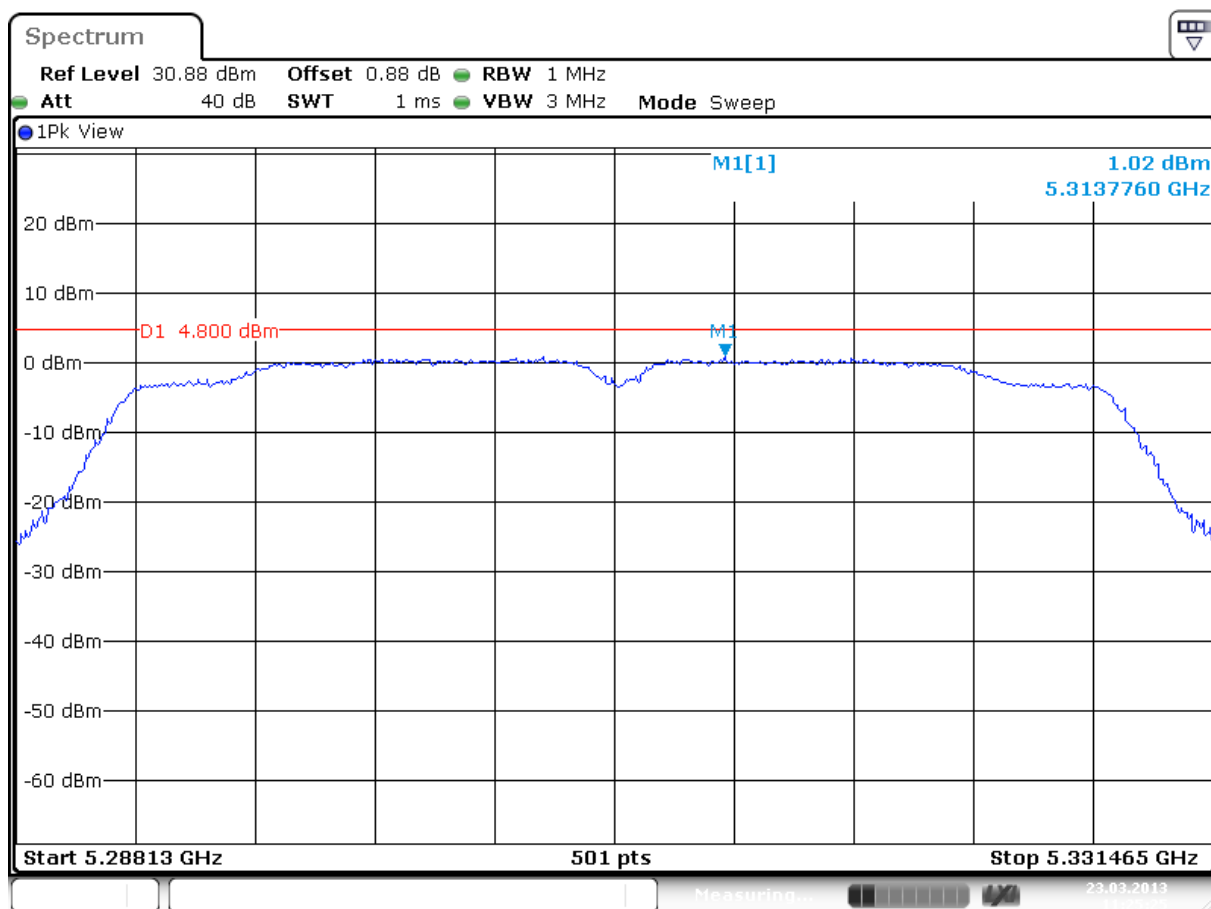
Date: 23.MAR.2013 11:19:51

Plot A Antenna 1

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Date: 23.MAR.2013 11:25:25

Plot B Antenna 2

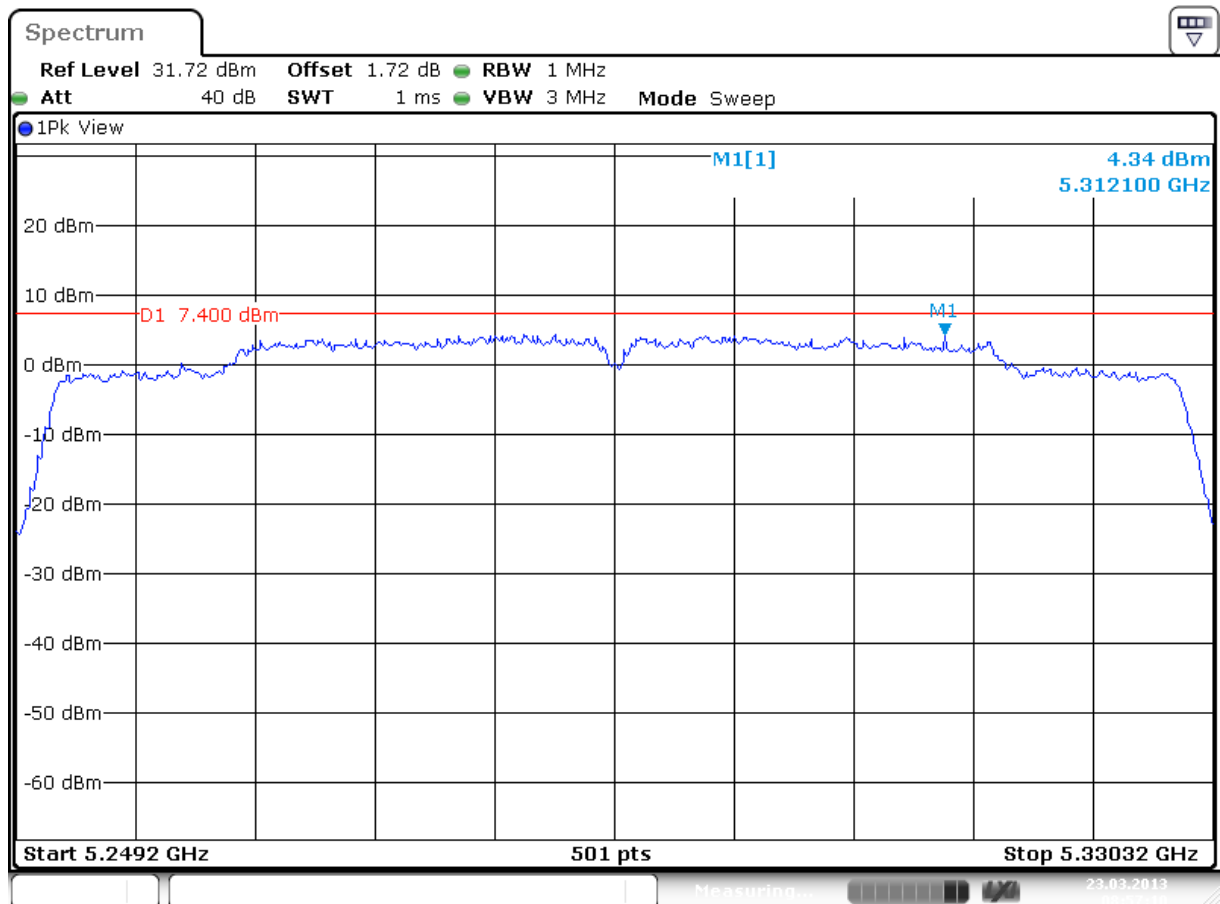
Test Report No.:

12121201.fcc03

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Operation mode: VHT6 80 MHz, Antenna 1

Frequency [MHz]	Peak of spectrum [dBm]	PPSD/MHz [dBm]	Peak excursion [dB]	Limit [dB]	Result
5290	4.3	-5.6	9.9	13	Pass



Date: 23.MAR.2013 08:57:10

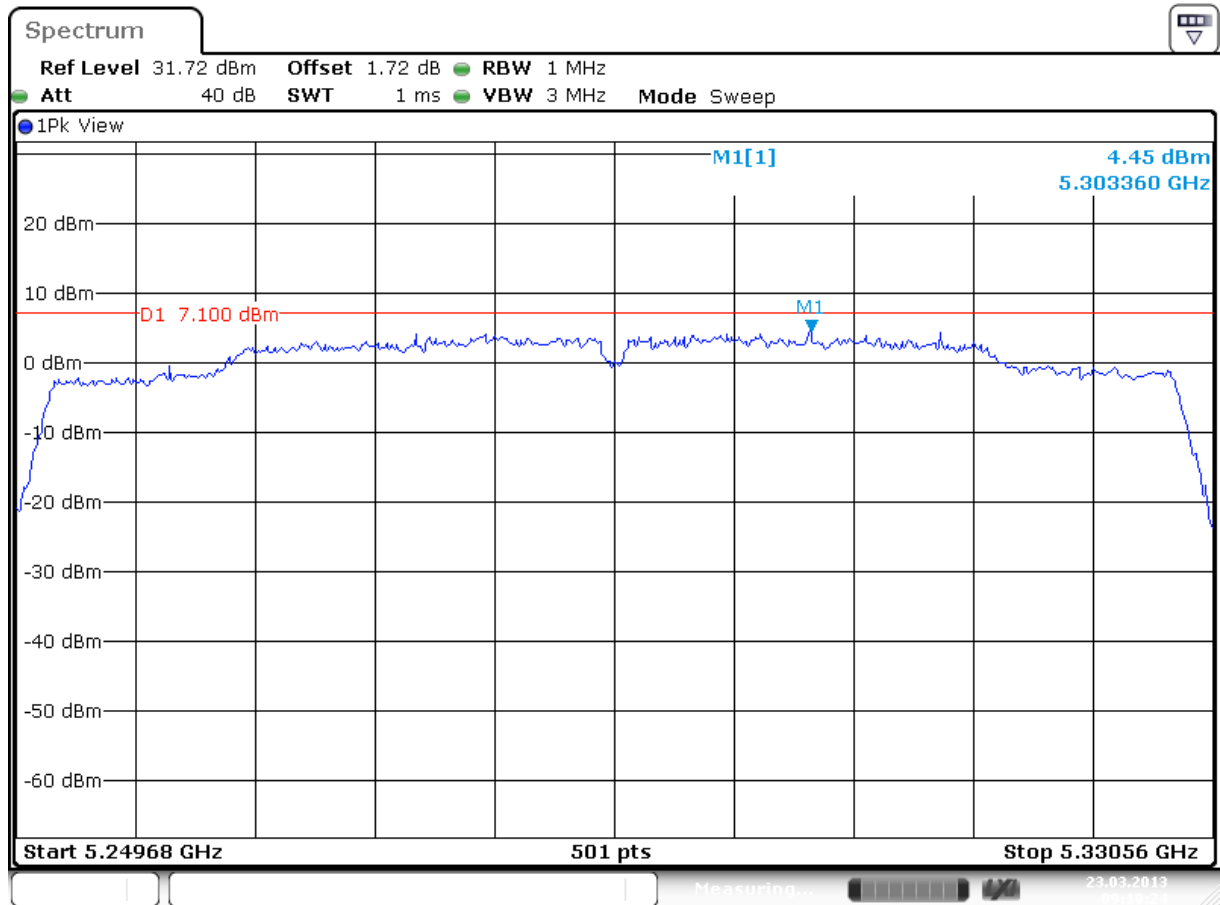
Test Report No.:

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Operation mode: VHT6 80 MHz, Antenna 1+2

Frequency [MHz]	Peak of spectrum [dBm]	PPSD/MHz [dBm]	Peak excursion [dB]	Limit [dB]	Result
5290	4.4	-5.9	10.3	13	Pass



Date: 23.MAR.2013 09:10:24

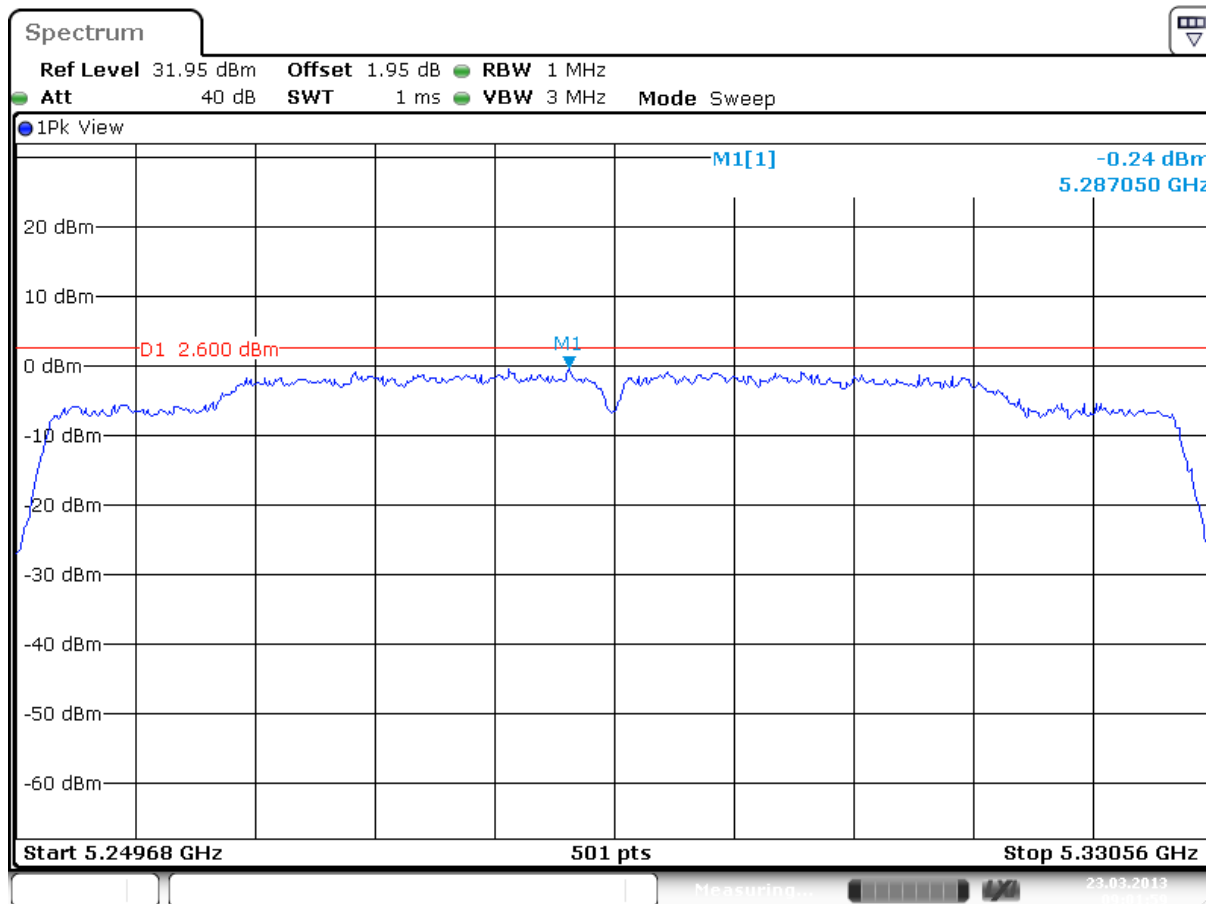
Test Report No.:

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Operation mode: VHT6 80 MHz, Antenna 1+2

Frequency [MHz]	Peak of spectrum Ant1 + Ant 2 [dBm]	PPSD/MHz [dBm]	Peak excursion [dB]	Limit [dB]	Result
5290	-0.24 / 0.06	-7.1	10.2	13	Pass



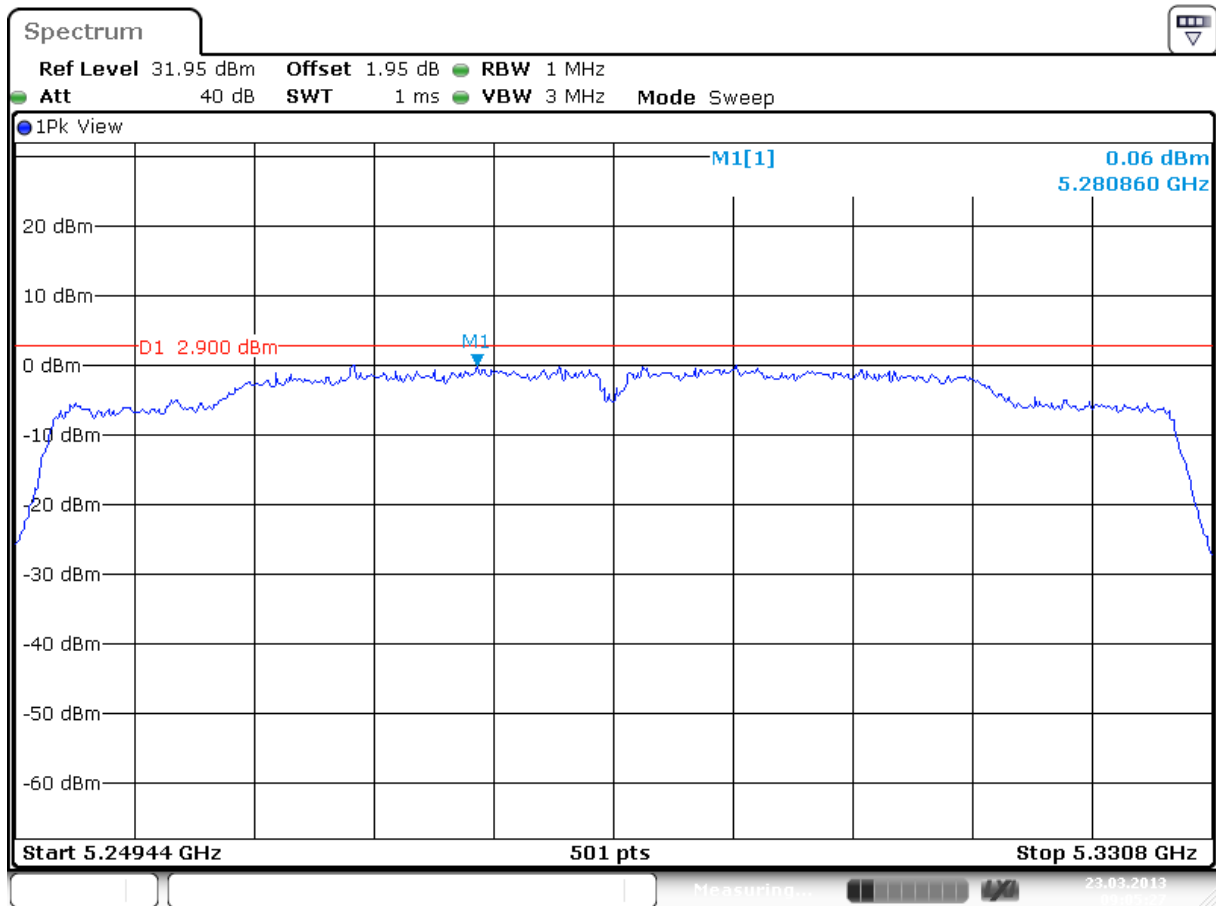
Date: 23.MAR.2013 09:01:59

Plot A Antenna 1

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Date: 23.MAR.2013 09:05:27

Plot B Antenna 2

Test Report No.:

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6.2.4 Undesirable Emissions

RESULT: Pass

Date of testing:

2013-03-23

Requirements:

Section 15.407 Subclause (b) (1) / RSS-210 A.9.2. (1).

For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz (68.23 dBμV/m at 3 m distance). 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)):

Frequency Range (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Detector	Measurement distance (m)
0.009-0.490	2400/F(kHz)	43.5 > 13.8	Average	300
0.490-1.705	24000/F(kHz)	33.8 > 22.9	Average	300
1.705 - 30.0	30	29.5	Quasi peak	30
30 - 88	100	40.0	Quasi peak	3
88 - 216	150	43.5	Quasi peak	3
216 - 960	200	46.0	Quasi peak	3
960 - 40000	500	54.0	Average	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

Test procedure:

ANSI C63.10-2009

KDB Publication No.789033 D01 v01r02 9/26/2012 .

KDB Publication No. 644545 D01 and D02.

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Before final measurements of radiated emissions were performed, the EUT was scanned to determine its emission spectrum profile. The physical arrangement of the test system, the associated cabling and the EUT orientation (X, Y, Z) were varied in order to ensure that maximum emission amplitudes were attained.

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The situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° to find the maximum radiated emission. Measurements were made in both horizontal and vertical planes of polarization. All tests were performed in a semi-anechoic chamber at a distance of 3m for the frequency range 1 GHz-40 GHz. The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

The equipment transmits continuously in the selected channel so it is not necessary a duty cycle correction factor. Measurements were performed using a spectrum analyzer with a suitable span and using the following settings: RBW = 1MHz, VBW = 3MHz (smaller if required for near band edge measurements).

The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

Results:

See the tables on the following pages.

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Frequency range 30 MHz-1 GHz

The spurious signals detected do not depend on either the operating channel or the modulation mode.

Freq. [MHz]	Antenna Orientation	Level QP [dB μ V/m]	Limit [dB μ V/m]	Margin QP [dB]
66.86	Vertical	20.5	40.0	19.5
111.48	Vertical	25.0	43.5	18.5
253.10	Vertical	27.9	46.0	18.1
774.96	Vertical	39.5	46.0	6.5
844.80	Vertical	41.4	46.0	4.6
922.40	Vertical	43.0	46.0	3.0

Notes:

1. Field strength values of radiated emissions at frequencies not listed in the table above are more than 20 dB below the applicable limit.
2. Measurement uncertainty is ± 5.0 dB.
3. The EUT was varied in three positions, the measuring antenna was varied in horizontal and vertical orientations and also around its axis and height. The reported value is the worst case found at the reported frequency.
4. Preliminary measurements indicated that the radiated emissions from EUT were not affected by the EUT's operating frequency or mode.
5. Tested with EUT in operation modes as described in section 4.2, worst case values noted.
6. A Quasi-peak detector was used with a bandwidth of 120 kHz.

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Frequency range 1 GHz-40 GHz

The results in the next tables show the maximum measured levels in the 1-40 GHz range including the band 5.15-5.25 GHz. For OFDM modulation modes (802.11g, 802.11n20, 802.11n40 and 802.11ac80), a preliminary measurement in the central channel in the range 1-18 GHz was performed to determine the worst case.

The lowest and highest channels were measured for out-of-band emissions for the worst case (802.11a). The field strength at the band edges was evaluated for each mode and on each chain individually on the lowest and highest channels at the rated power for the channel under test. Where the power at the edge channels was lower than the power at the center channels additional measurements were made at the adjacent channels. Single transmission at each chain and simultaneous transmission at both chains modes were fully evaluated.

Spurious signals with peak levels above the average limit (68.23 dB μ V/m at 3 m) are measured with average detector for checking compliance with the average limit, where applicable.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
6 Mb OFDM – Antenna 1 at 5260 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10520	Vertical	Pk	47.00	68.23
15780	Horizontal	Pk	43.30	68.23
18476	Vertical	Pk	35.79	68.23
20346	Vertical	Pk	36.30	68.23
22182	Vertical	Pk	40.41	68.23
23746	Vertical	Pk	42.58	68.23

Note: - Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
6 Mb OFDM – Antenna 2 at 5260 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10520	Vertical	Pk	47.12	68.23
15780	Horizontal	Pk	42.90	68.23
18595	Vertical	Pk	35.83	68.23
20499	Vertical	Pk	36.19	68.23
24052	Vertical	Pk	43.99	68.23
25871	Vertical	Pk	41.49	68.23

Note: - Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
6 Mb OFDM – Antenna 1 at 5300 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10600	Vertical	Pk	43.00	68.23
15900	Vertical	Pk	45.91	68.23
18612	Vertical	Pk	35.83	68.23
20380	Vertical	Pk	36.00	68.23
23491	Vertical	Pk	41.19	68.23
23984	Vertical	Pk	43.78	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
6 Mb OFDM – Antenna 2 at 5300 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10600	Vertical	Pk	42.75	68.23
15900	Vertical	Pk	45.50	68.23
18527	Vertical	Pk	35.44	68.23
20397	Vertical	Pk	36.29	68.23
23916	Vertical	Pk	43.52	68.23
25752	Vertical	Pk	42.28	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
6 Mb OFDM – Antenna 1 at 5320 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10640	Vertical	Pk	43.00	68.23
15960	Horizontal	Pk	45.90	68.23
18595	Vertical	Pk	35.92	68.23
20210	Vertical	Pk	35.42	68.23
23712	Vertical	Pk	42.54	68.23
24171	Vertical	Pk	43.17	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
6 Mb OFDM – Antenna 2 at 5320 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10640	Vertical	Pk	42.60	68.23
15960	Horizontal	Pk	45.40	68.23
18765	Vertical	Pk	35.75	68.23
21995	Vertical	Pk	40.67	68.23
23865	Vertical	Pk	43.24	68.23
25395	Vertical	Pk	40.14	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
HT4 20 MHz – Antenna 1 at 5260 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10520	Vertical	Pk	47.50	68.23
15780	Vertical	Pk	40.00	68.23
18731	Vertical	Pk	37.14	68.23
21995	Vertical	Pk	40.67	68.23
24035	Vertical	Pk	43.84	68.23
25531	Vertical	Pk	41.61	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
HT4 20 MHz – Antenna 2 at 5260 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10520	Vertical	Pk	46.80	68.23
15780	Vertical	Pk	38.65	68.23
18595	Vertical	Pk	36.20	68.23
21910	Vertical	Pk	40.45	68.23
23355	Vertical	Pk	40.67	68.23
25684	Vertical	Pk	42.73	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
HT4 20 MHz – Antenna 1 at 5300 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10600	Vertical	Pk	47.70	68.23
15900	Horizontal	Pk	42.80	68.23
18765	Vertical	Pk	35.68	68.23
20448	Vertical	Pk	36.83	68.23
23661	Vertical	Pk	42.38	68.23
25735	Vertical	Pk	42.70	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
HT4 20 MHz – Antenna 2 at 5300 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10600	Vertical	Pk	47.60	68.23
15900	Horizontal	Pk	42.80	68.23
18633	Vertical	Pk	36.09	68.23
22593	Vertical	Pk	38.09	68.23
23094	Vertical	Pk	39.63	68.23
25327	Vertical	Pk	40.26	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
HT4 20 MHz – Antenna 1 at 5320 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10640	Vertical	Pk	47.20	68.23
15960	Horizontal	Pk	42.60	68.23
19275	Vertical	Pk	36.09	68.23
21910	Vertical	Pk	38.09	68.23
24052	Vertical	Pk	39.63	68.23
25497	Vertical	Pk	40.26	68.23

Note: - Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
HT4 20 MHz – Antenna 2 at 5320 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10640	Vertical	Pk	45.90	68.23
15960	Horizontal	Pk	42.10	68.23
19275	Vertical	Pk	34.11	68.23
21910	Vertical	Pk	41.31	68.23
24052	Vertical	Pk	43.70	68.23
25497	Vertical	Pk	41.82	68.23

Note: - Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
HT8 20 MHz – Antenna 1+2 at 5260 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10520	Vertical	Pk	45.50	68.23
15780	Vertical	Pk	37.75	68.23
18731	Vertical	Pk	35.50	68.23
21995	Vertical	Pk	40.00	68.23
24035	Vertical	Pk	40.50	68.23
25531	Vertical	Pk	42.50	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
HT8 20 MHz – Antenna 1+2 at 5260 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10520	Vertical	Pk	46.50	68.23
15780	Vertical	Pk	39.00	68.23
18595	Vertical	Pk	37.00	68.23
21910	Vertical	Pk	41.25	68.23
23355	Vertical	Pk	41.25	68.23
25684	Vertical	Pk	42.50	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
HT8 20 MHz – Antenna 1+2 at 5300 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10600	Vertical	Pk	45.50	68.23
15900	Horizontal	Pk	42.00	68.23
18765	Vertical	Pk	35.50	68.23
20448	Vertical	Pk	37.75	68.23
23661	Vertical	Pk	38.20	68.23
25735	Vertical	Pk	40.50	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
HT8 20 MHz – Antenna 1+2 at 5300 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10600	Vertical	Pk	48.10	68.23
15900	Horizontal	Pk	44.50	68.23
18633	Vertical	Pk	37.44	68.23
22593	Vertical	Pk	39.25	68.23
23094	Vertical	Pk	40.50	68.23
25327	Vertical	Pk	42.50	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
HT8 20 MHz – Antenna 1+2 at 5320 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10640	Vertical	Pk	43.50	68.23
15960	Horizontal	Pk	42.25	68.23
19275	Vertical	Pk	33.30	68.23
21910	Vertical	Pk	40.50	68.23
24052	Vertical	Pk	42.50	68.23
25497	Vertical	Pk	41.50	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
HT8 20 MHz – Antenna 1+2 at 5320 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10640	Vertical	Pk	45.50	68.23
15960	Horizontal	Pk	43.25	68.23
19275	Vertical	Pk	35.50	68.23
21910	Vertical	Pk	41.00	68.23
24052	Vertical	Pk	44.25	68.23
25497	Vertical	Pk	42.50	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
HT4 40 MHz – Antenna 1 at 5270 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10540	Vertical	Pk	44.90	68.23
15810	Vertical	Pk	38.10	68.23
19751	Vertical	Pk	32.42	68.23
22029	Vertical	Pk	40.71	68.23
23627	Vertical	Pk	42.34	68.23
25599	Vertical	Pk	42.43	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
HT4 40 MHz – Antenna 2 at 5270 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10540	Vertical	Pk	44.20	68.23
15810	Vertical	Pk	36.50	68.23
18748	Vertical	Pk	35.75	68.23
22250	Vertical	Pk	40.41	68.23
24137	Vertical	Pk	42.20	68.23
25514	Vertical	Pk	42.87	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
HT4 40 MHz – Antenna 1 at 5310 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10620	Vertical	Pk	44.00	68.23
15930	Horizontal	Pk	39.60	68.23
19105	Vertical	Pk	34.41	68.23
21893	Vertical	Pk	39.88	68.23
23474	Vertical	Pk	41.58	68.23
25497	Vertical	Pk	41.66	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
HT4 40 MHz – Antenna 2 at 5310 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dBµV/m]	Limit [dBµV/m]
10620	Vertical	Pk	42.70	68.23
15930	Horizontal	Pk	38.75	68.23
18697	Vertical	Pk	35.75	68.23
21944	Vertical	Pk	40.41	68.23
24307	Vertical	Pk	42.20	68.23
25769	Vertical	Pk	42.87	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.

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**Radiated Emission, 1 - 40GHz, Horizontal and Vertical Antenna Orientations,
HT8 40 MHz – Antenna 1+2 at 5270 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dB μ V/m]	Limit [dB μ V/m]
10540	Vertical	Pk	42.50	68.23
15810	Vertical	Pk	35.25	68.23
19751	Vertical	Pk	32.75	68.23
22029	Vertical	Pk	39.50	68.23
23627	Vertical	Pk	41.50	68.23
25599	Vertical	Pk	42.50	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak values also noted as Av value to show compliance with Av limit.
- Peak detector used with a bandwidth of 1 MHz.

**Radiated Emission, 1 – 40 GHz, Horizontal and Vertical Antenna Orientations,
HT8 40 MHz – Antenna 1+2 at 5270 MHz.**

Freq. [MHz]	Antenna Orientation	Detector	Level [dB μ V/m]	Limit [dB μ V/m]
10540	Vertical	Pk	44.50	68.23
15810	Vertical	Pk	37.25	68.23
18748	Vertical	Pk	35.00	68.23
22250	Vertical	Pk	41.25	68.23
24137	Vertical	Pk	42.25	68.23
25514	Vertical	Pk	42.50	68.23

Note:

- Peak (Pk) value already within Average (Av) limits, therefor Av not retested.
- Peak detector used with a bandwidth of 1 MHz.