

Test Report



INTENTIONAL RADIATOR TESTS ACCORDING TO FCC PART 15 C and INDUSTRY CANADA REQUIREMENTS

Equipment Under Test: Wireless System-on-Module (WiFi)

Type/ Model: APx4

Manufacturer: BlueGiga Technologies Oy
PO. BOX 120
FI-02631 ESPOO
FINLAND

Customer: BlueGiga Technologies Oy
PO. BOX 120
FI-02631 ESPOO
FINLAND

FCC Rule Part: 15.247: 2012
IC Rule Part: RSS-210, Issue 8, 2010
RSS-GEN Issue 3, 2010

KDB: Guidance for Performing Compliance
Measurements on Digital Transmission Systems
(DTS) Operating Under §15.247 (April 9, 2013)

Date: June 26, 2013

Issued by:

A handwritten signature in blue ink, appearing to read "R. Repo".

Rauno Repo
Testing Engineer

Date: June 26, 2013

Checked by:

A handwritten signature in blue ink, appearing to read "A. Honkala".

Ari Honkala
Product Line Manager

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Equipment Under Test (EUT)

Wireless System-on-Module

Type/ Model: APx4

Serial Number: -

APx4 is a Wireless System-on-Module that supports Wi-Fi, Classic Bluetooth and Low Energy Bluetooth. This report contains the Wi-Fi test results.

Two samples were used in tests. The first sample had an integrated antenna and the other sample had an external antenna. Both modules were connected to their own evaluation boards.

Conducted measurements were made with the sample having an external antenna. Measurements were made from the antenna connector (SMA).

Classification of the device

Fixed device	<input type="checkbox"/>
Mobile Device (Human body distance > 20cm)	<input checked="" type="checkbox"/>
Portable Device (Human body distance < 20cm)	<input type="checkbox"/>

Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing

Ratings and declarations

WLAN (802.11 b/g/n):

Operating Frequency Range (OFR):	2412 – 2462 MHz
Channels:	11
Channel separation:	5 MHz
Channel bandwidth:	20 MHz (802.11b-mode) 22 MHz (802.11g/n-mode)
Conducted power:	+15.31 dBm
Transmission technique:	DSSS/OFDM
Modulation:	CCK/OFDM
Transmission rate:	1-72.2 Mbps
Integrated antenna gain:	4 dBi max
External antenna gain:	2.14 dBi

Power Supply

The following wall charger was used during the tests (supplied with 115 V/ 60 Hz).

Charger:

Manufacturer:	PHIHONG
Model:	PSMR11R-120
Serial number:	P73206336A1
Input voltage:	100-240 VAC
Rated current:	0.3A max
Rated frequency:	50-60 Hz
Output voltage:	12 V DC
Output current:	0.84A MAX

Disclaimer

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SUMMARY OF TESTING

Test Specification	Description of Test	Result
§15.207(a) / RSS-GEN 7.2.2	Conducted Emissions on Power Supply Lines	PASS
§15.247(b)(3) / RSS-210 8.4	Maximum Peak Conducted Output Power	PASS
§15.247(a)(2) / RSS-210 A8.2	6 dB Bandwidth	PASS
§15.247(e) / RSS-210 A8.2	Power Spectral Density	PASS
RSS-GEN 4.6.1	99 % Occupied Bandwidth	PASS
§15.247(d) / RSS-210 A8.5	100 kHz Bandwidth of Frequency Band Edges and Conducted Spurious Emissions	PASS
§15.209(a), §15.247(d) / RSS-210 A8.5	Radiated Emissions Within The Restricted Bands	PASS
§15.209 / RSS-GEN 7.2.3.2	Unintentional Radiated Emissions	PASS

EUT Test Conditions during Testing

The EUT was configured into the wanted channel and was in continuous transmit mode during all the tests. Measurements were done with 802.11 b-mode and with 1 Mbps data rate because this will give the highest peak power level. The band edges were also measured with 54 Mbps data rate (wide signal).

Following channels were used during the tests:

WLAN:

Channel	Frequency/ MHz
LOW	2412
MID	2437
HIGH	2462

Test Facility

<input type="checkbox"/>	Testing Location / address: FCC registration number: 90598	SGS Fimko Ltd Särkiniementie 3 FI-00210, HELSINKI FINLAND
<input checked="" type="checkbox"/>	Testing Location / address: FCC registration number: 178986 Industry Canada registration number: 8708A-2	SGS Fimko Ltd Karakaarenkuja 4 FI-02610, ESPOO FINLAND

Conducted Emissions In The Frequency Range 150 kHz - 30 MHz.

Standard: ANSI C63.10 (2009)
Tested by: JJM
Date: 23.4.2013
Temperature: 20 °C
Humidity: 21 % RH
Barometric pressure: 1004 hPa
Measurement uncertainty: ± 2.9 dB

Level of confidence 95 % (k = 2)

FCC Rule: 15.207 (a)

Conducted disturbance voltage was measured with an artificial main network from 150 kHz to 30 MHz with 4.5 kHz steps and a resolution bandwidth of 9 kHz. Measurements were carried out with peak and average detectors.

During the test the EUT was powered from the separate power supply (115VAC / 60 Hz) through the LISN.

Frequency of emission (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

Conducted Emission Mains FCC Part 15 Class B with ESH3-Z5 8019

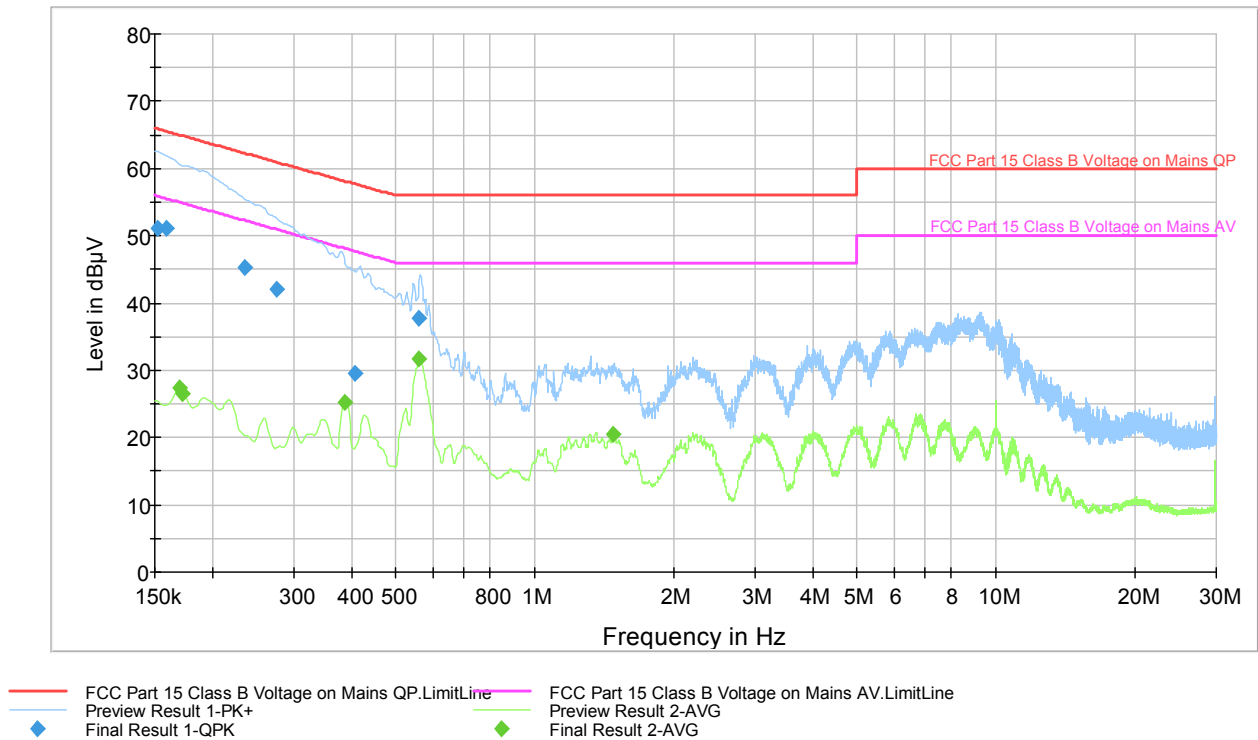


Figure 1. The measured curves with peak- and average detector.

Table 1. Final measurement results with Quasi peak detector.

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time 15x(ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.152250	51.1	1000.0	9.000	GND	L1	10.7	14.8	65.9	
0.159000	51.1	1000.0	9.000	GND	N	10.8	14.5	65.5	
0.235500	45.3	1000.0	9.000	GND	L1	10.9	17.0	62.3	
0.276000	42.0	1000.0	9.000	GND	N	10.7	18.9	60.9	
0.408750	29.5	1000.0	9.000	GND	N	10.2	28.2	57.7	
0.561750	37.7	1000.0	9.000	GND	N	10.1	18.3	56.0	

Table 2. Final measurement results with Average detector.

Frequency (MHz)	Average (dBµV)	Meas. Time 15x(ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.170250	27.4	1000.0	9.000	GND	N	10.9	27.5	54.9	
0.172500	26.6	1000.0	9.000	GND	N	10.9	28.2	54.8	
0.386250	25.2	1000.0	9.000	GND	N	10.3	23.0	48.1	
0.561750	31.7	1000.0	9.000	GND	N	10.1	14.3	46.0	
1.481500	20.4	1000.0	9.000	GND	N	10.2	25.6	46.0	

6 dB Bandwidth

Standard: ANSI C63.10 (2009)
Tested by: RRE
Date: 2.5.2013
Temperature: 22 °C
Humidity: 22 % RH

FCC Rule: 15.247 (a) (2)

System using digital modulation techniques may operate in the 2400 – 2483.5 MHz band. The minimum 6 dB bandwidth shall be at least 500 Hz.

6 dB Bandwidth		
Low channel	Mid channel	High channel
10.072 MHz	10.072 MHz	10.101 MHz



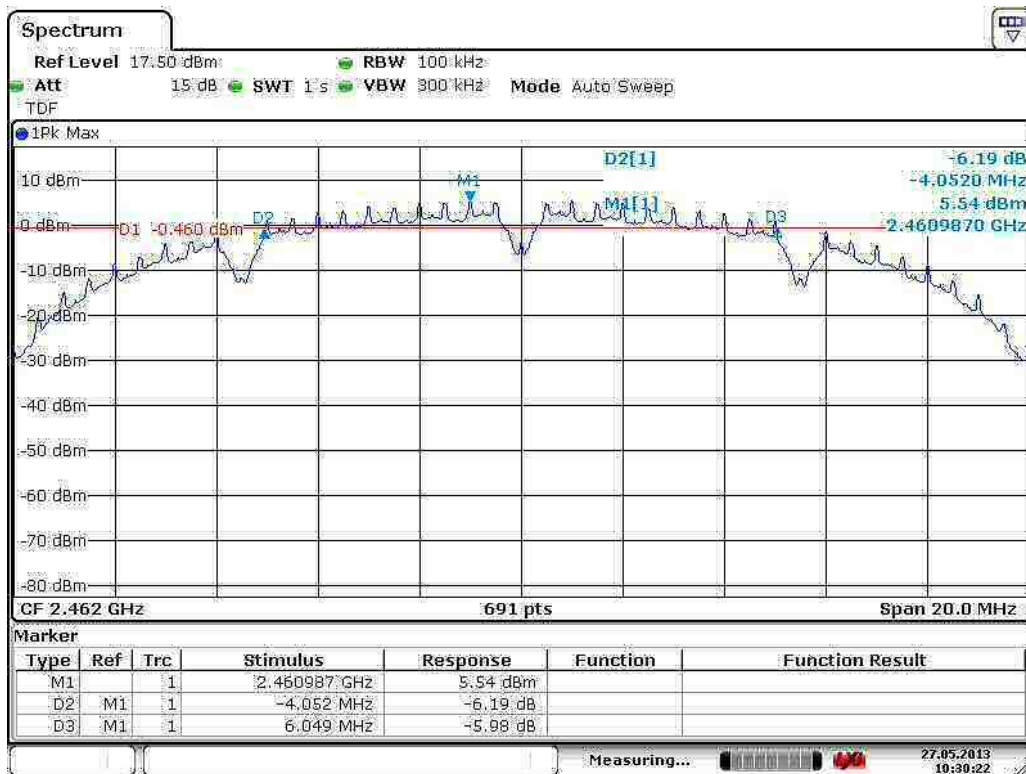
Date: 27.MAY.2013 10:05:30

Figure 2. Low channel 6 dB bandwidth.



Date: 27.MAY.2013 10:05:30

Figure 3. Mid channel 6 dB bandwidth.



Date: 27.MAY.2013 10:30:21

Figure 4. High channel 6 dB bandwidth.

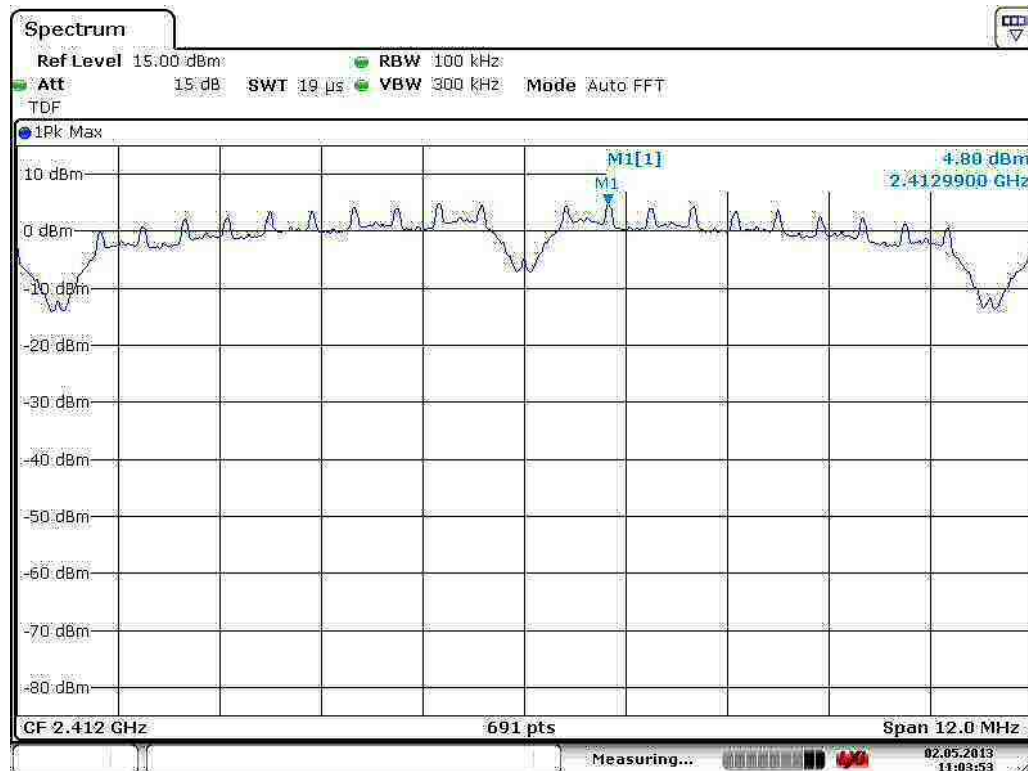
Power Spectral Density

Standard: ANSI C63.10 (2009)
Tested by: RRE
Date: 2.5.2013
Temperature: 22 °C
Humidity: 22 % RH

FCC Rule: 15.247 (e)

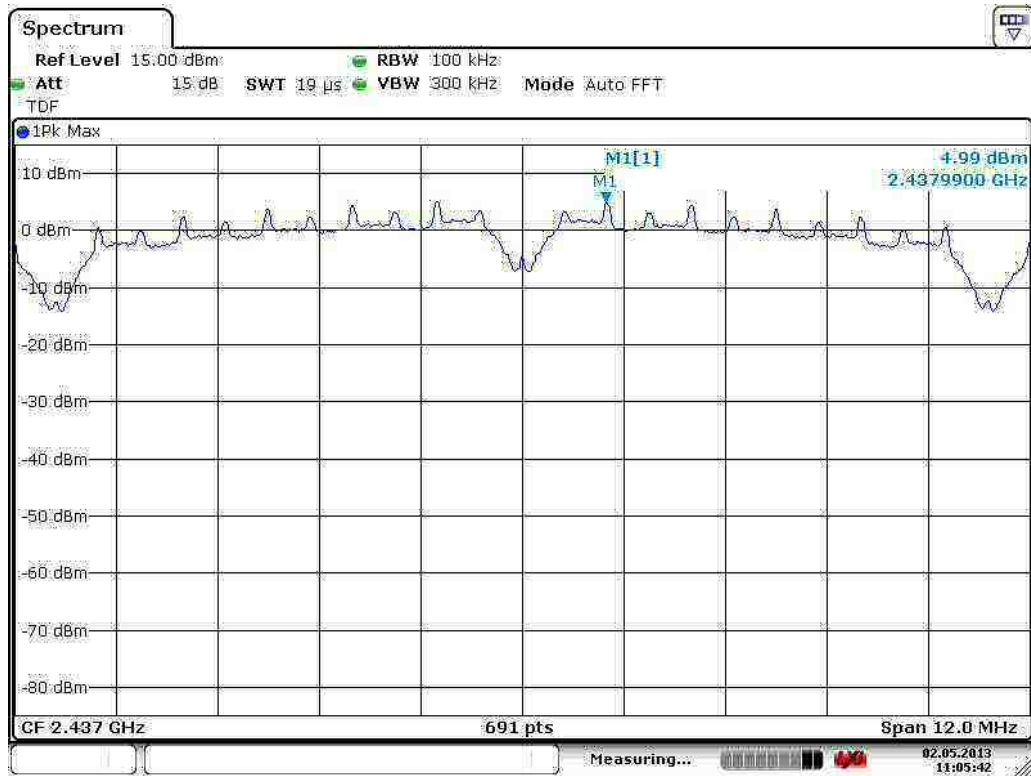
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of section 15.247. The same method determining the conducted output power shall be used to determine the power spectral density.

Channel	RF Power Density [dBm] with 100 kHz RBW	Limit [dBm]	Result
Low	4.80	8	PASS
Mid	4.99	8	PASS
High	5.49	8	PASS



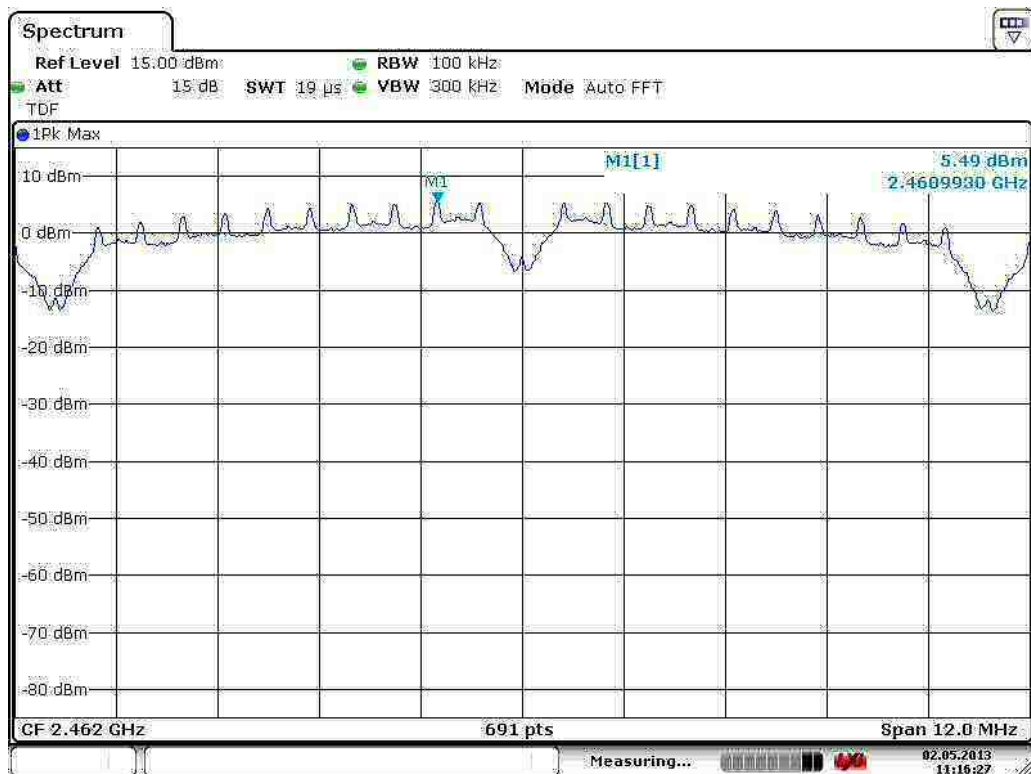
Date: 2.MAY.2013 11:03:53

Figure 5. Low channel power spectral density.



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Figure 6. Mid channel power spectral density.



Date: 2.MAY.2013 11:16:27

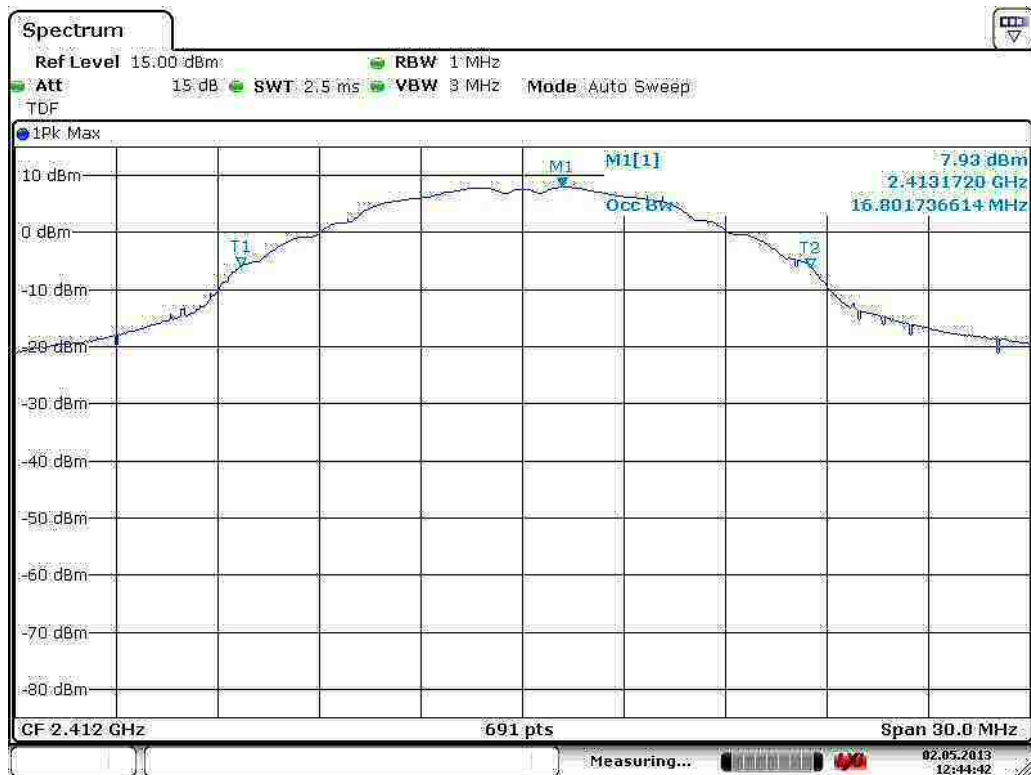
Figure 7. High channel power spectral density

99% Occupied Power Bandwidth

Standard: RSS-GEN (2010)
 Tested by: RRE
 Date: 2.5.2013
 Temperature: 22 °C
 Humidity: 22 % RH

RSS-GEN 4.7.

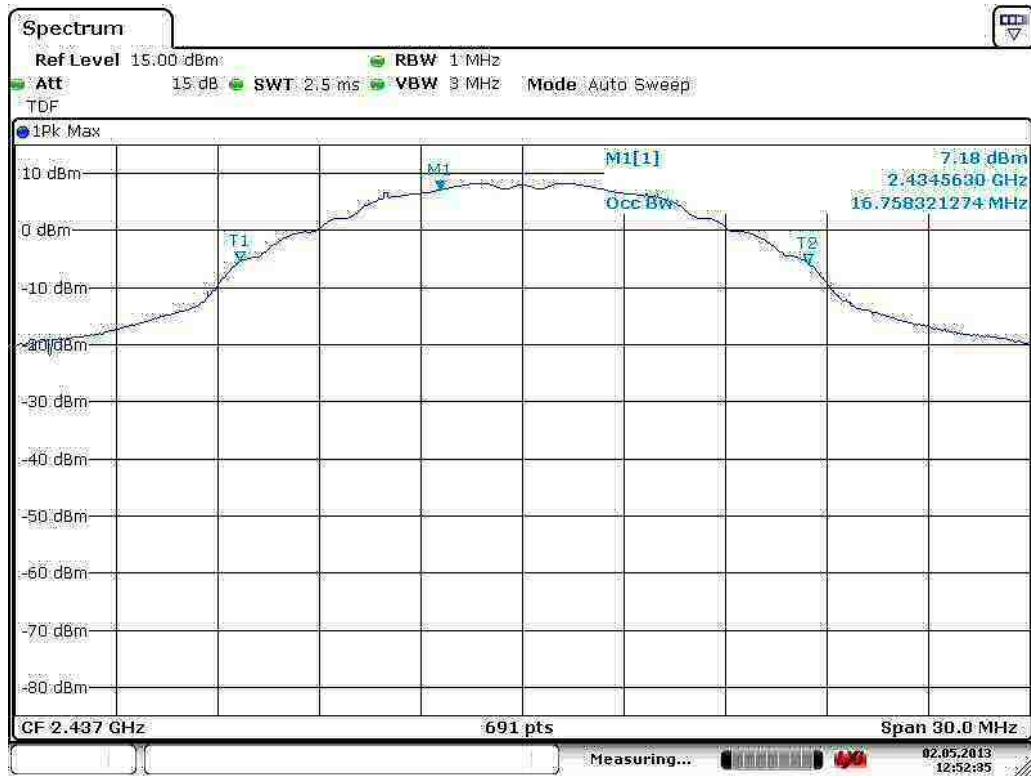
Channel	99% BW [MHz]	Limit	Result
Low	16.801736614	-	PASS
Mid	16.758321274	-	PASS
High	16.714905933	-	PASS



Date: 2.MAY.2013 12:44:42

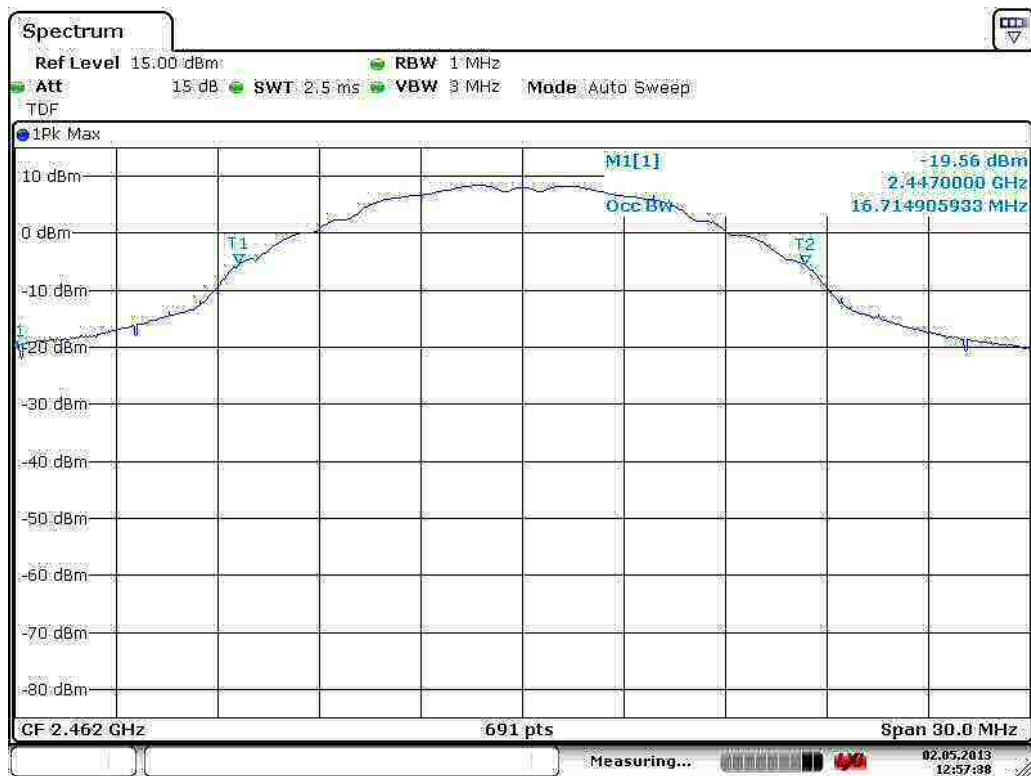
Figure 8. Low channel 99% Occupied Power Bandwidth.

99% Occupied Power Bandwidth



Date: 2.MAY.2013 12:52:35

Figure 9. Mid channel 99% Occupied Power Bandwidth.



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Figure 10. Mid channel 99% Occupied Power Bandwidth.

Maximum Peak Conducted Output Power Measurement

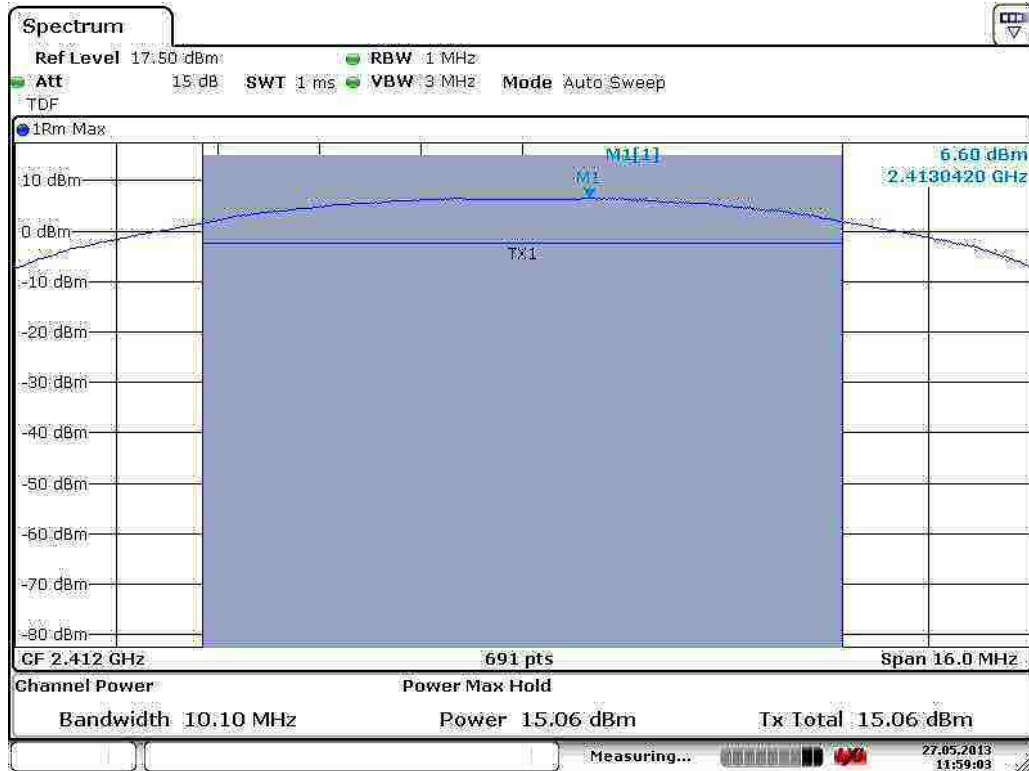
Maximum Peak Conducted Output Power Measurement

Standard: ANSI C63.10 (2009)
 Tested by: RRE
 Date: 2.5.2013
 Temperature: 22 °C
 Humidity: 22 % RH

FCC Rule: 15.247 (b) (3)

For systems using digital modulation in the 2400-2483.5 MHz band: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the *maximum conducted output power* is the highest total transmit power occurring in any mode.

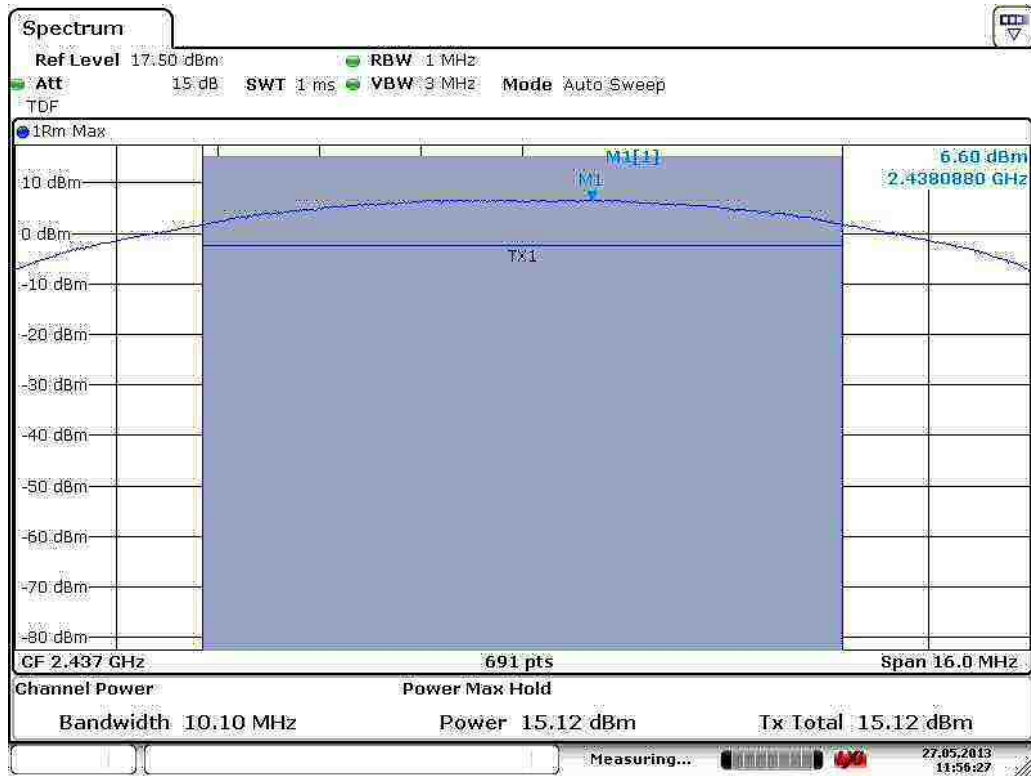
Channel	Conducted Power [dBm]	Limit [dBm]	Margin [dBm]	Result
Low	15.06	30	14.94	PASS
Mid	15.12	30	14.88	PASS
High	15.30	30	14.70	PASS



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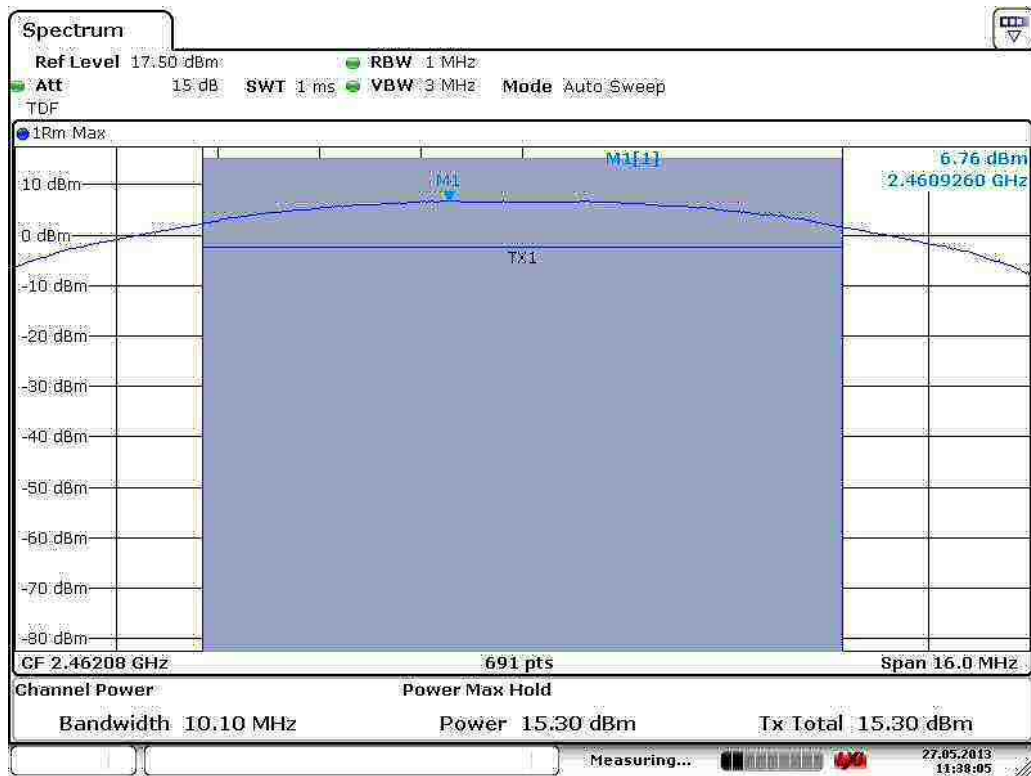
Figure 11. Low channel.

Maximum Peak Conducted Output Power Measurement



Date: 27.MAY.2013 11:56:26

Figure 12. Mid channel.



Date: 27.MAY.2013 11:38:05

Figure 13. High channel..

Transmitter Radiated Emissions 30 – 26 500 MHz and Band Edge

Standard:	ANSI C63.10	(2009)
Tested by:	RRE	
Date:	31.1 – 8.2.2013	
Temperature:	18 – 19 °C	
Humidity:	21 – 30 % RH	
Measurement uncertainty:	± 4.51 dB	Level of confidence 95 % (k = 2)

FCC Rule: 15.247(d), 15.209(a)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

The correction factor in the final result table contains the sum of the transducers (antenna + amplifier + cables). The QuasiPeak value is the measured value corrected with the correction factor.

Measurements are done with 1 Mbps data rate. The band edges were also measured with 54 Mbps data rate.

Test results with integrated antenna

FCC Part 15 Class B Spurious Emission 30-1000MHz 3m

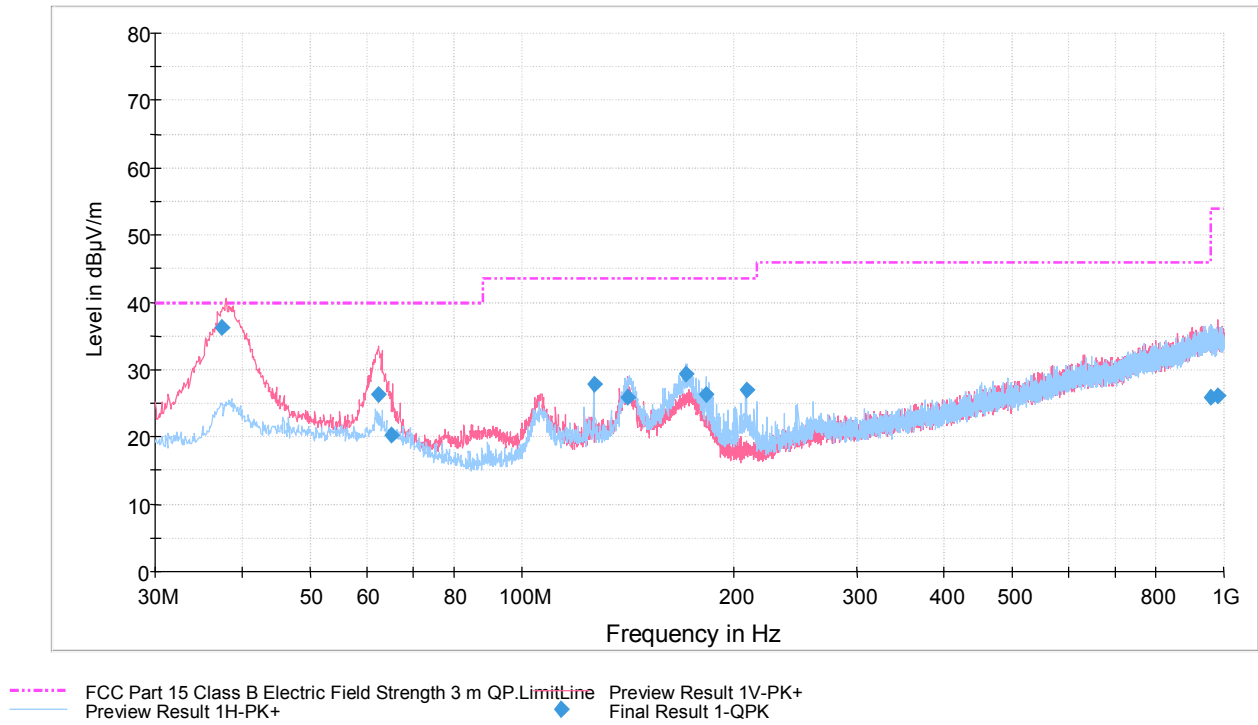


Figure 14. Measured curves with peak-detector (low channel).

Table 3. Final measurements from the worst frequencies.

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time 15x(ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
37.297000	36.3	1000.0	120.000	100.0	V	79.0	14.9	3.7	40.0	
62.558000	26.3	1000.0	120.000	100.0	V	279.0	14.1	13.7	40.0	
65.005000	20.4	1000.0	120.000	100.0	V	281.0	14.2	19.6	40.0	
126.612000	27.8	1000.0	120.000	228.0	H	262.0	13.4	15.7	43.5	
141.541000	26.0	1000.0	120.000	212.0	H	260.0	15.2	17.6	43.5	
171.278000	29.3	1000.0	120.000	188.0	H	84.0	14.3	14.2	43.5	
182.989000	26.2	1000.0	120.000	172.0	H	85.0	13.1	17.3	43.5	
208.540000	26.9	1000.0	120.000	150.0	H	111.0	11.6	16.6	43.5	
957.071000	25.9	1000.0	120.000	264.0	V	221.0	27.1	20.1	46.0	
982.420000	26.1	1000.0	120.000	115.0	V	113.0	27.1	27.8	53.9	

Spurious and Band Edge Radiated Emissions

FCC Part 15 Class B Spurious Emission 30-1000MHz 3m

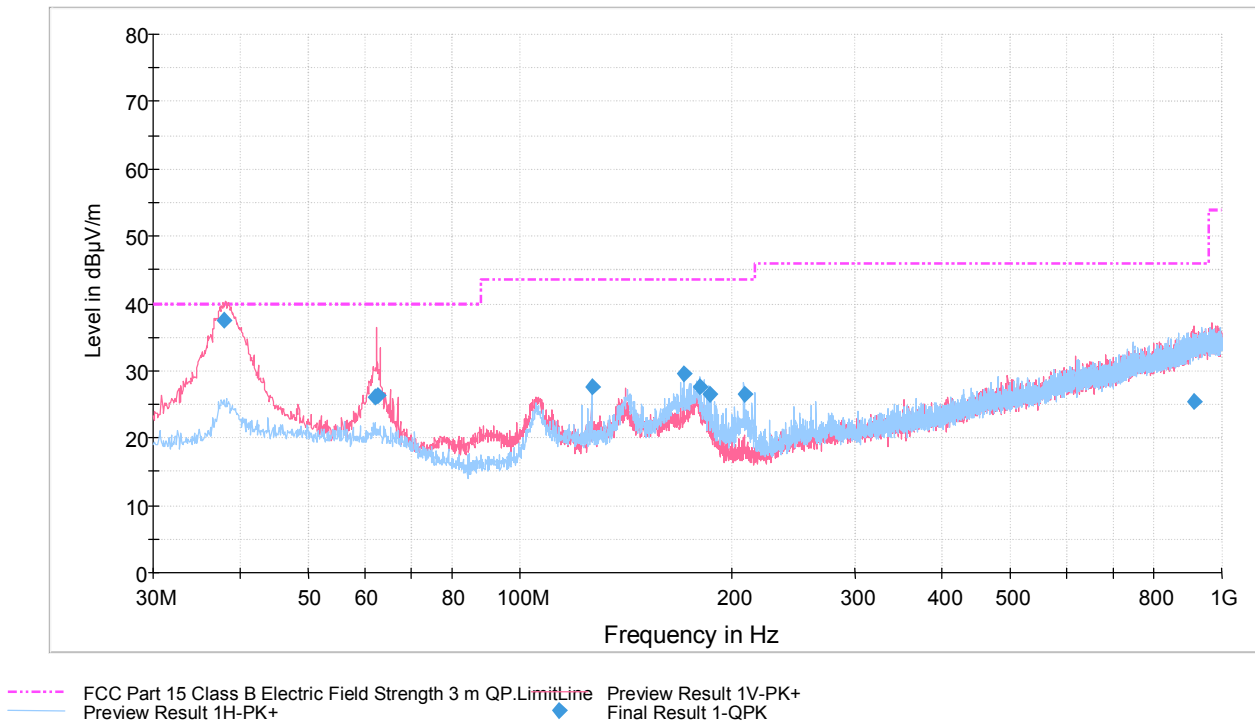


Figure 15. Measured curve with peak-detector (middle channel).

Table 4. Final measurements from the worst frequencies.

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time 15x(ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
37.951000	37.6	1000.0	120.000	100.0	V	60.0	15.0	2.4	40.0	
62.058000	26.2	1000.0	120.000	116.0	V	188.0	14.1	13.8	40.0	
62.711000	26.2	1000.0	120.000	116.0	V	270.0	14.1	13.8	40.0	
126.612000	27.6	1000.0	120.000	221.0	H	253.0	13.4	15.9	43.5	
171.329000	29.5	1000.0	120.000	222.0	H	98.0	14.3	14.0	43.5	
180.002000	27.6	1000.0	120.000	164.0	H	116.0	13.5	15.9	43.5	
186.216000	26.5	1000.0	120.000	116.0	H	107.0	12.7	17.0	43.5	
208.540000	26.5	1000.0	120.000	133.0	H	93.0	11.6	17.0	43.5	
913.043000	25.4	1000.0	120.000	349.0	V	312.0	26.7	20.6	46.0	

Spurious and Band Edge Radiated Emissions

FCC Part 15 Class B Spurious Emission 30-1000MHz 3m

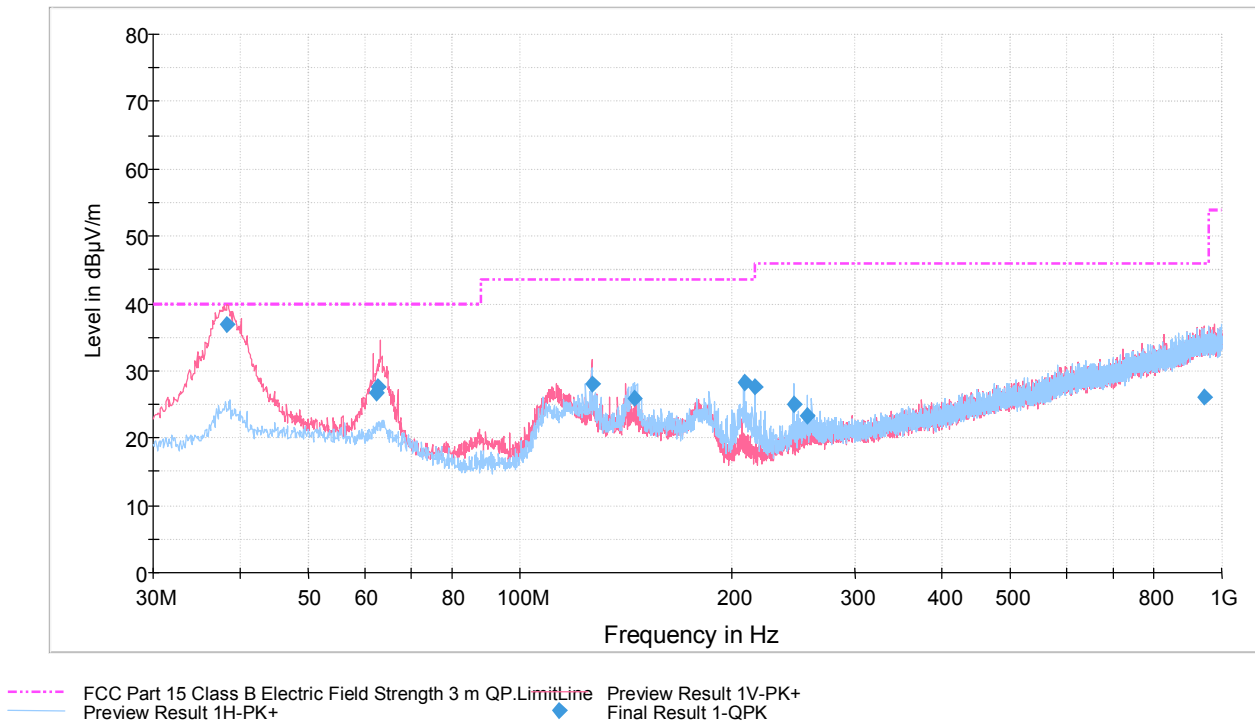


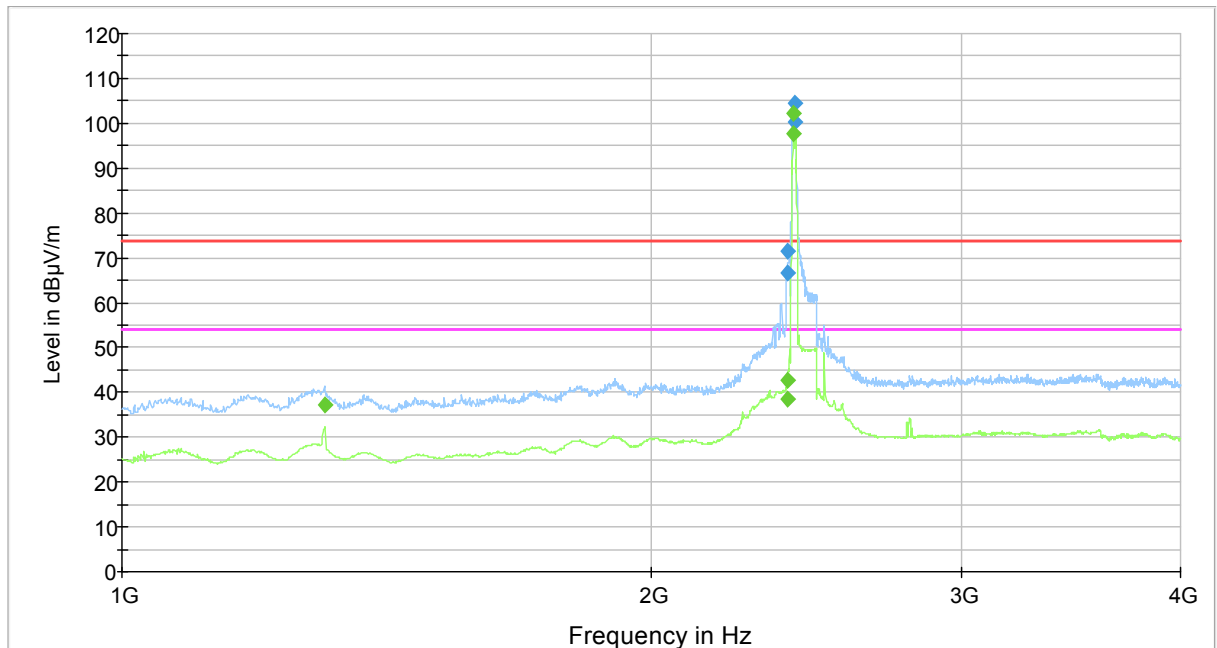
Figure 16. Measured curve with peak-detector (high channel).

Table 5. Final measurements from the worst frequencies

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time 15x(ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
38.245000	36.8	1000.0	120.000	100.0	V	40.0	15.0	3.2	40.0	
62.356000	26.8	1000.0	120.000	110.0	V	231.0	14.1	13.2	40.0	
62.711000	27.5	1000.0	120.000	100.0	V	216.0	14.1	12.5	40.0	
126.612000	27.9	1000.0	120.000	100.0	V	244.0	13.4	15.6	43.5	
145.247000	25.8	1000.0	120.000	192.0	H	270.0	15.5	17.7	43.5	
208.540000	28.3	1000.0	120.000	165.0	H	98.0	11.6	15.2	43.5	
216.009000	27.6	1000.0	120.000	144.0	H	100.0	11.8	18.4	46.0	
245.808000	25.0	1000.0	120.000	110.0	H	130.0	13.4	21.0	46.0	
256.940000	23.3	1000.0	120.000	121.0	H	238.0	13.7	22.7	46.0	
944.744000	26.1	1000.0	120.000	100.0	V	260.0	27.1	19.9	46.0	

Spurious and Band Edge Radiated Emissions

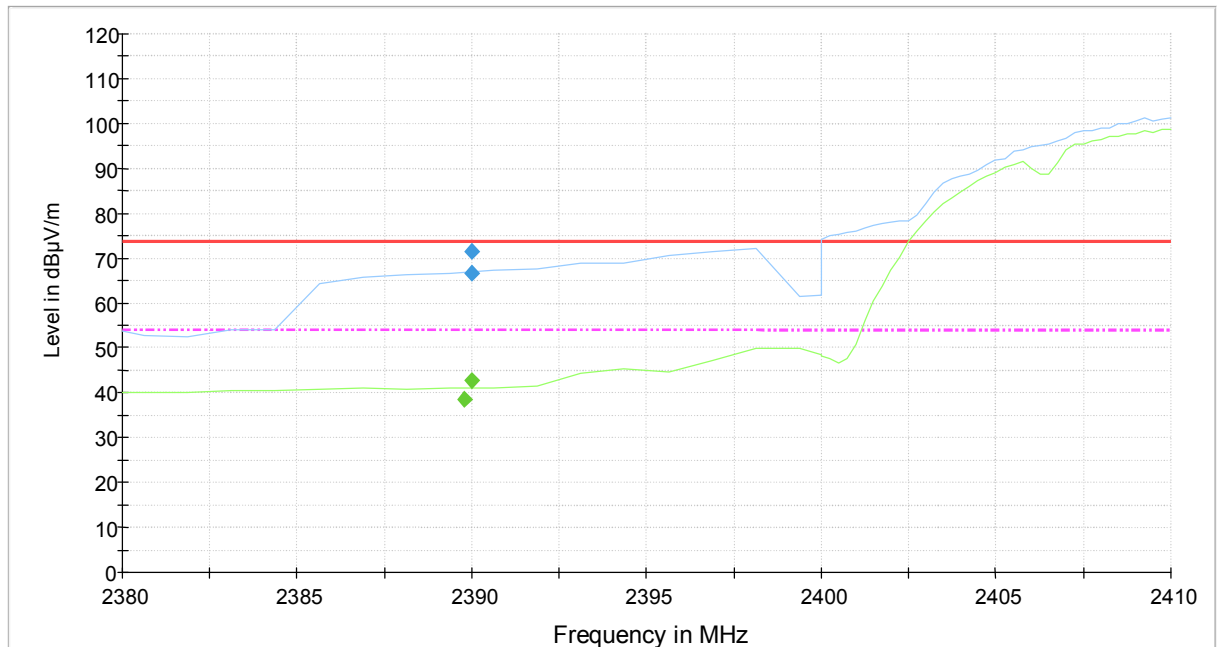
FCC Part 15 Class B Spurious Emission 1-4GHz 3m (optimized 2.4 GHz TX)



— FCC Part 15 Class B Electric Field Strength 3 m PK.LimitLine — FCC Part 15 Class B Electric Field Strength 3 m AV.LimitLine
— Preview Result 1-PK+ — Preview Result 2-AVG
◆ Final Result 1-PK+ ◆ Final Result 2-AVG

Figure 17. Measured curve with peak- and average detector (low channel, 1 Mbps).

FCC Part 15 Class B Spurious Emission 1-4GHz 3m (optimized 2.4 GHz TX)

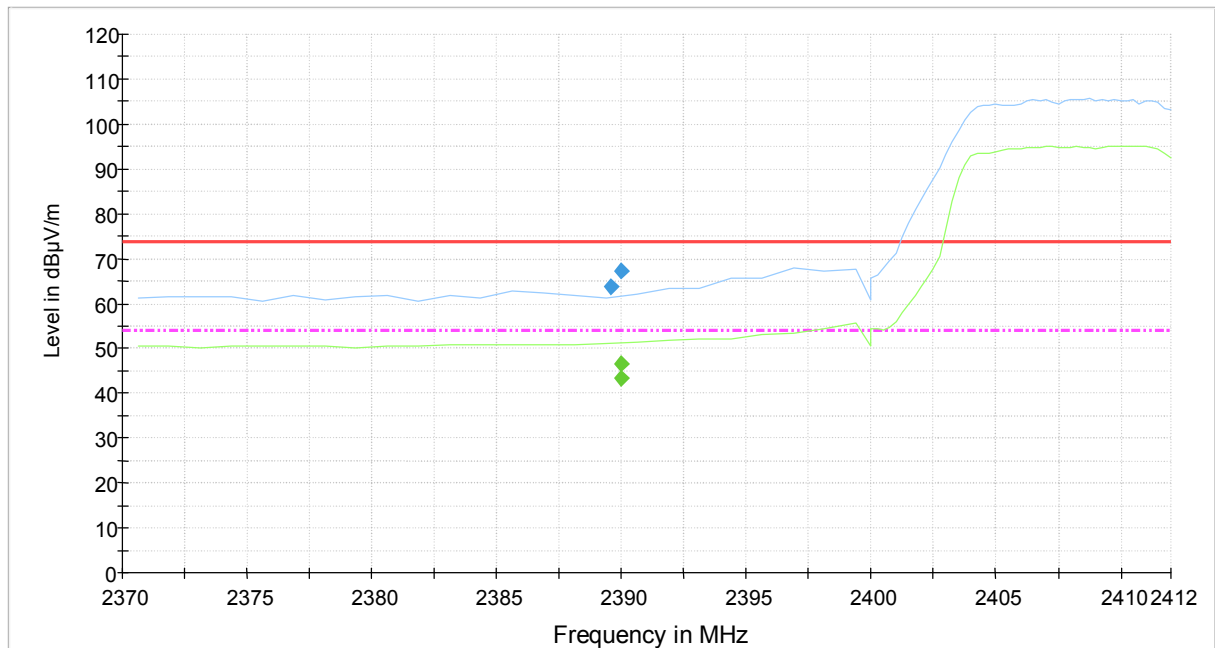


— FCC Part 15 Class B Electric Field Strength 3 m PK.LimitLine — FCC Part 15 Class B Electric Field Strength 3 m AV.LimitLine
— Preview Result 1-PK+ — Preview Result 2-AVG
◆ Final Result 1-PK+ ◆ Final Result 2-AVG

Figure 18. Low channel band edge, 1 Mbps.

Spurious and Band Edge Radiated Emissions

FCC Part 15 Class B Spurious Emission 1-4GHz 3m (optimized 2.4 GHz TX)



— FCC Part 15 Class B Electric Field Strength 3 m PK.LimitLine
— Preview Result 1-PK+
— FCC Part 15 Class B Electric Field Strength 3 m AV.LimitLine
— Preview Result 2-AVG
◆ Final Result 1-PK+
◆ Final Result 2-AVG

Figure 19. Low channel band edge, 54 Mbps.

Final measurements from the worst frequencies

Table 6. Final Max Peak results.

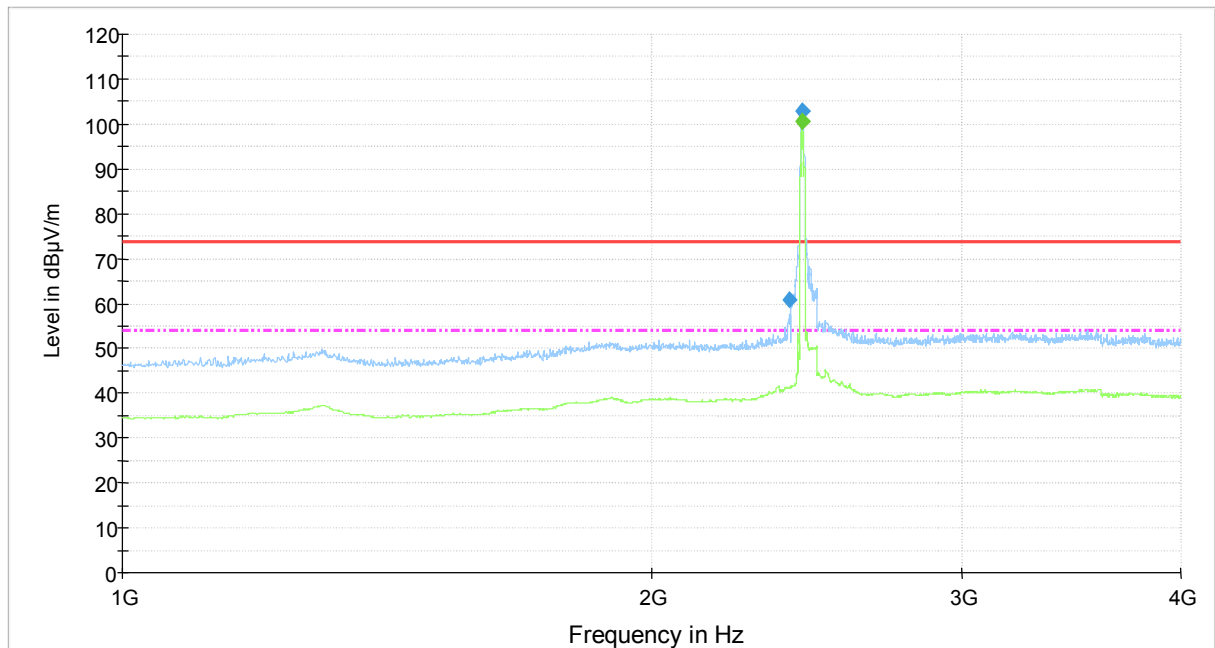
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time 15x(ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
2389.600000	63.6	1000.0	1000.000	189.0	V	161.0	4.3	10.3	73.9	54 Mbps
2390.000000	67.2	1000.0	1000.000	100.0	H	146.0	4.3	6.7	73.9	54 Mbps
2390.000000	71.6	1000.0	1000.000	162.0	H	165.0	4.3	2.3	73.9	1 Mbps
2390.000000	66.5	1000.0	1000.000	267.0	V	176.0	4.3	7.4	73.9	1 Mbps
2412.800000	104.4	1000.0	1000.000	163.0	H	158.0	4.3	-	-	Carrier
2412.800000	100.3	1000.0	1000.000	302.0	V	181.0	4.3	-	-	Carrier

Table 7. Final Average results.

Frequency (MHz)	Average (dBµV/m)	Meas. Time 15x(ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
1304.225000	37.1	1000.0	1000.000	163.0	H	158.0	-0.8	16.8	53.9	1 Mbps
2389.800000	38.6	1000.0	1000.000	224.0	V	176.0	4.3	15.3	53.9	1 Mbps
2390.000000	42.7	1000.0	1000.000	100.0	H	159.0	4.3	11.2	53.9	1 Mbps
2390.000000	46.5	1000.0	1000.000	165.0	H	143.0	4.3	7.4	53.9	54 Mbps
2390.000000	43.2	1000.0	1000.000	164.0	V	165.0	4.3	10.7	53.9	54 Mbps
2411.250000	102.1	1000.0	1000.000	162.0	H	162.0	4.3	-	-	Carrier
2411.250000	97.7	1000.0	1000.000	226.0	V	176.0	4.3	-	-	Carrier

Spurious and Band Edge Radiated Emissions

FCC Part 15 Class B Spurious Emission 1-4GHz 3m (optimized 2.4 GHz TX)



— FCC Part 15 Class B Electric Field Strength 3 m PK.LimitLine
— Preview Result 1-PK+ - - - FCC Part 15 Class B Electric Field Strength 3 m AV.LimitLine
◆ Final Result 1-PK+ — Preview Result 2-AVG
◆ Final Result 2-AVG

Figure 20. Measured curve with peak- and average detector (middle channel).

Final measurements from the worst frequencies

Table 8. Final Max Peak results.

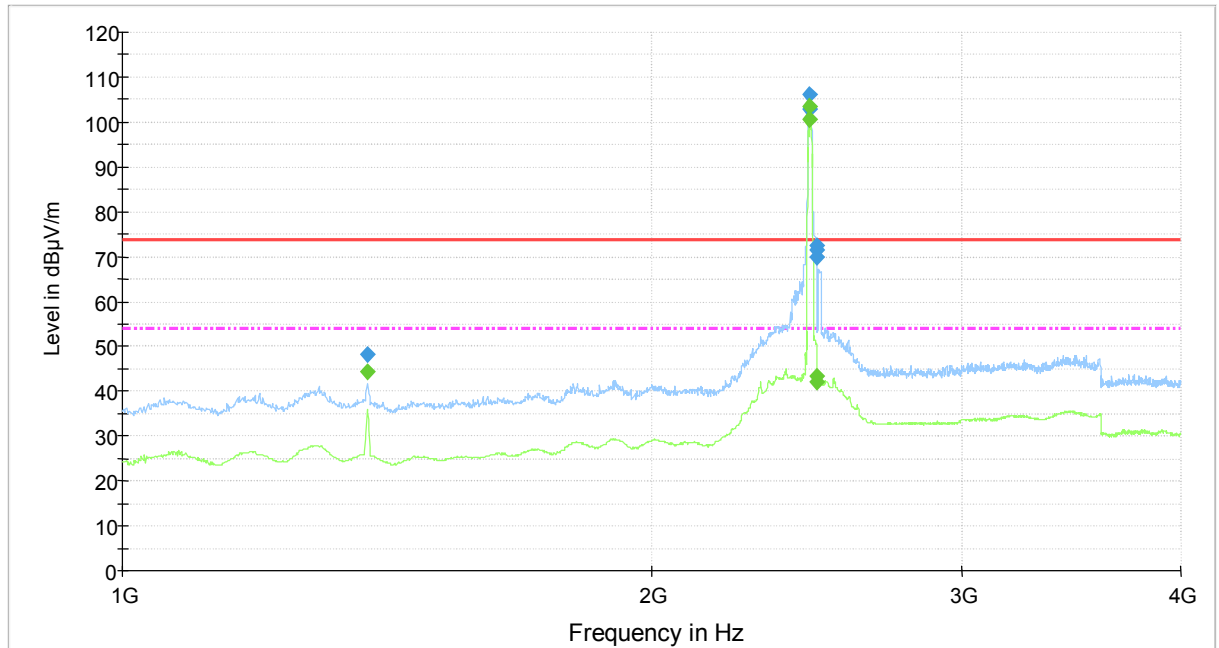
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time 15x(ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
2396.075000	61.0	1000.0	1000.000	122.0	H	206.0	14.4	12.9	73.9	
2437.800000	102.8	1000.0	1000.000	157.0	H	218.0	14.1	-	-	Carrier

Table 9. Final Average results.

Frequency (MHz)	Average (dBµV/m)	Meas. Time 15x(ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
2437.750000	100.5	1000.0	1000.000	147.0	H	225.0	14.1	-	-	Carrier

Spurious and Band Edge Radiated Emissions

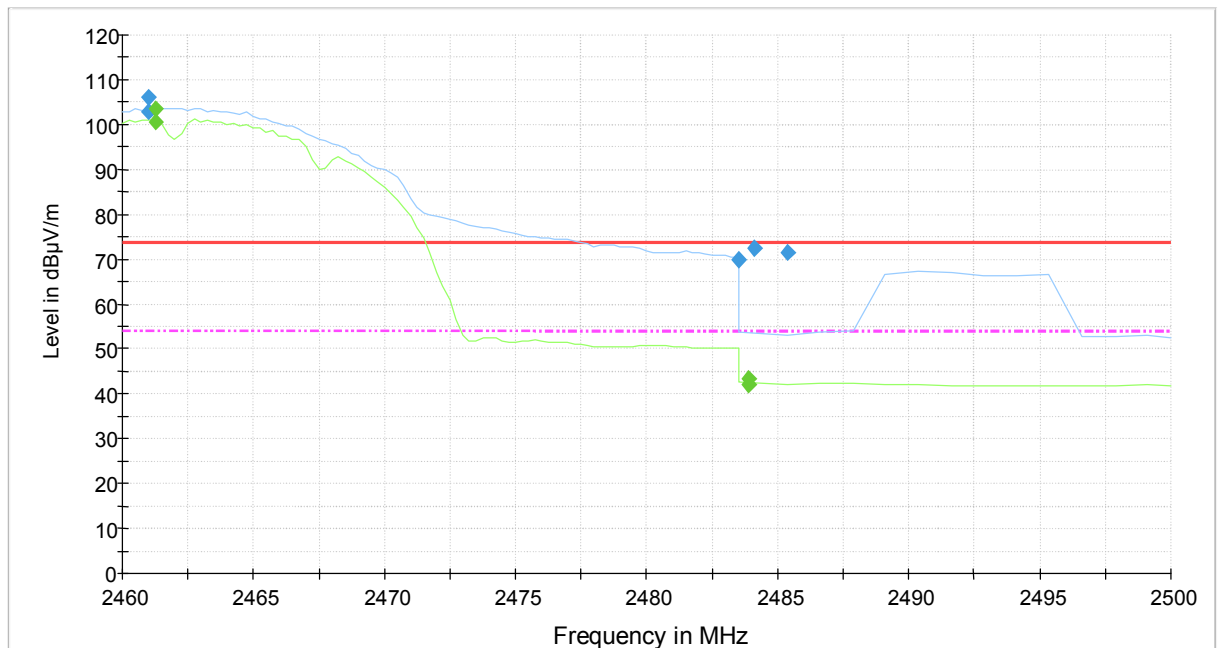
FCC Part 15 Class B Spurious Emission 1-4GHz 3m (optimized 2.4 GHz TX)



— FCC Part 15 Class B Electric Field Strength 3 m PK.LimitLine - - - FCC Part 15 Class B Electric Field Strength 3 m AV.LimitLine
— Preview Result 1-PK+ — Preview Result 2-AVG
◆ Final Result 1-PK+ ◆ Final Result 2-AVG

Figure 21. Measured curve with peak- and average detector (high channel).

FCC Part 15 Class B Spurious Emission 1-4GHz 3m (optimized 2.4 GHz TX)



— FCC Part 15 Class B Electric Field Strength 3 m PK.LimitLine - - - FCC Part 15 Class B Electric Field Strength 3 m AV.LimitLine
— Preview Result 1-PK+ — Preview Result 2-AVG
◆ Final Result 1-PK+ ◆ Final Result 2-AVG

Figure 22. High channel band edge, 1 Mbps.

Spurious and Band Edge Radiated Emissions

FCC Part 15 Class B Spurious Emission 1-4GHz 3m (optimized 2.4 GHz TX)

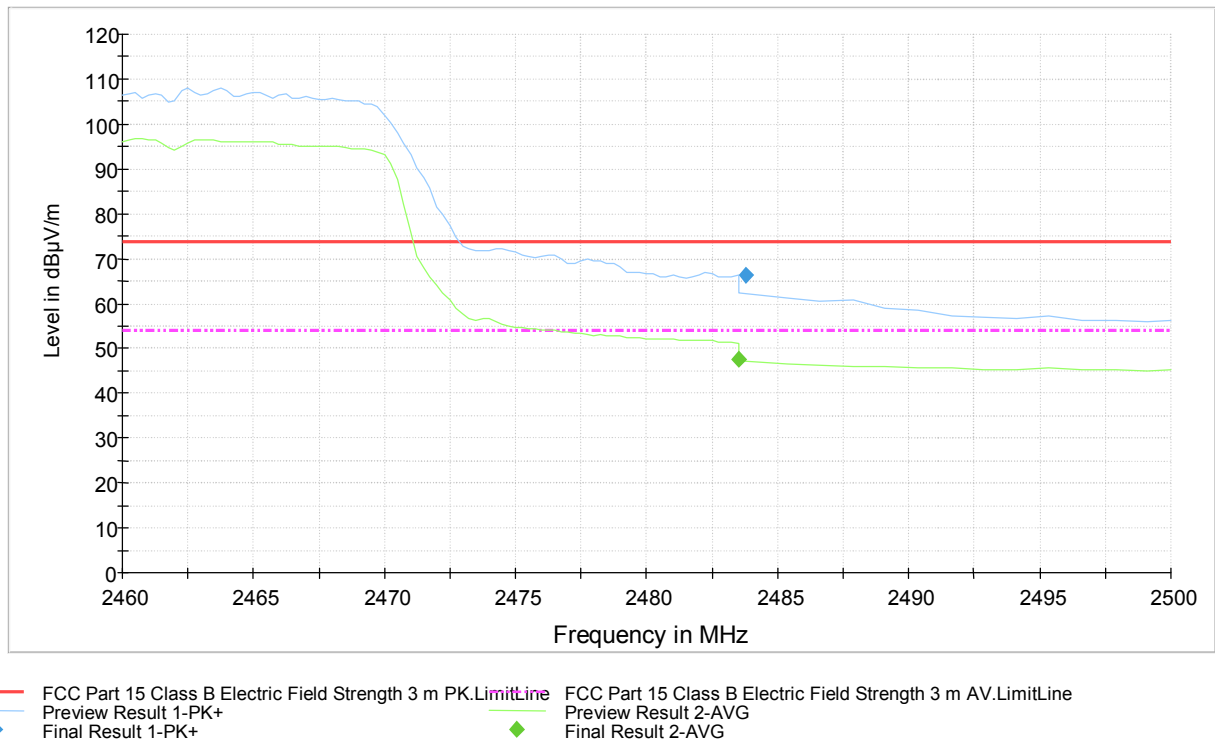


Figure 23. High channel band edge, 54 Mbps.

Final measurements from the worst frequencies

Table 10. Final Max Peak results.

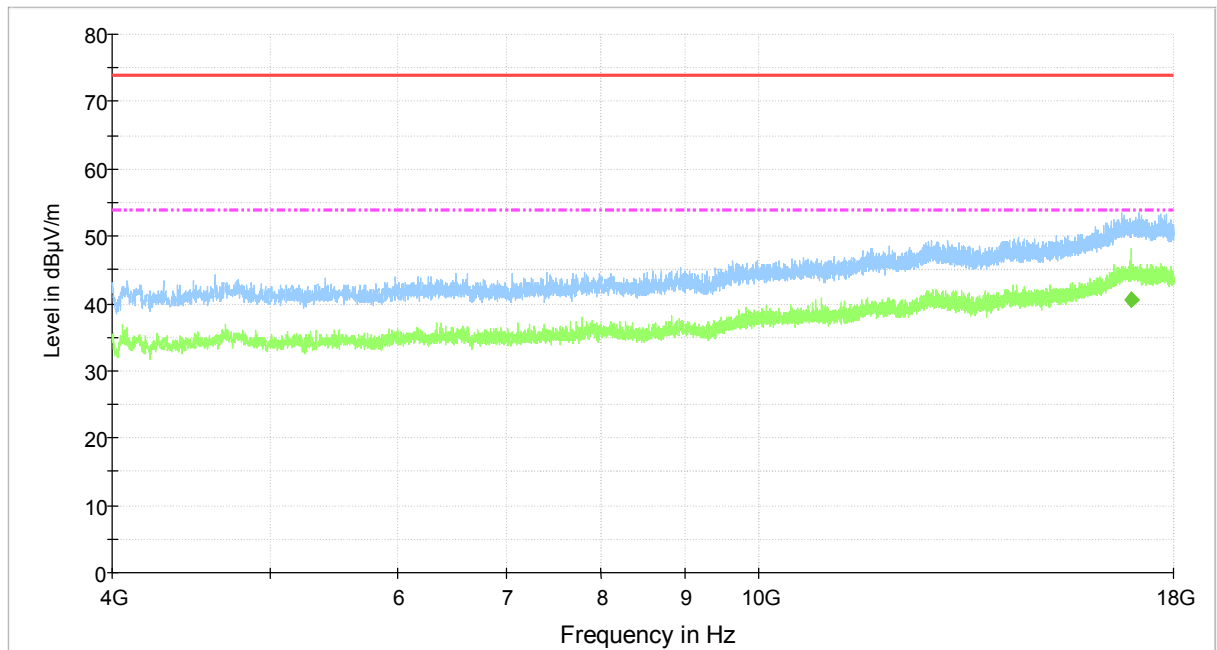
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
1379.125000	48.2	1000.0	1000.000	154.0	H	146.0	-2.6	25.7	73.9	1 Mbps
2461.000000	106.0	1000.0	1000.000	155.0	H	146.0	4.1	-	-	Carrier
2461.000000	102.8	1000.0	1000.000	251.0	V	165.0	4.1	-	-	Carrier
2483.500000	69.8	1000.0	1000.000	283.0	V	176.0	4.4	4.1	73.9	1 Mbps
2483.800000	66.5	1000.0	1000.000	122.0	H	142.0	4.4	7.4	73.9	54 Mbps
2484.100000	72.3	1000.0	1000.000	151.0	H	146.0	4.4	1.6	73.9	1 Mbps
2485.375000	71.3	1000.0	1000.000	154.0	H	212.0	4.4	2.6	73.9	1 Mbps

Table 11. Final Average results.

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
1378.325000	44.3	1000.0	1000.000	154.0	H	146.0	-2.6	9.6	53.9	1 Mbps
2461.250000	103.5	1000.0	1000.000	154.0	H	146.0	4.1	-	-	Carrier
2461.250000	100.7	1000.0	1000.000	249.0	V	165.0	4.1	-	-	Carrier
2483.500000	47.4	1000.0	1000.000	146.0	H	146.0	4.4	6.5	53.9	54 Mbps
2483.900000	43.5	1000.0	1000.000	146.0	H	147.0	4.4	10.4	53.9	1 Mbps
2483.900000	42.1	1000.0	1000.000	284.0	V	171.0	4.4	11.8	53.9	1 Mbps

Spurious and Band Edge Radiated Emissions

FCC Part 15 Class B Spurious Emission 4-18GHz 3m



— FCC Part 15 Class B Electric Field Strength 3 m PK.LimitLine
 - - - FCC Part 15 Class B Electric Field Strength 3 m AV.LimitLine
— Preview Result 1-PK+
 — Preview Result 2-AVG
◆ Final Result 2-AVG

Figure 24. Measured curve with peak- and average detector (low channel).

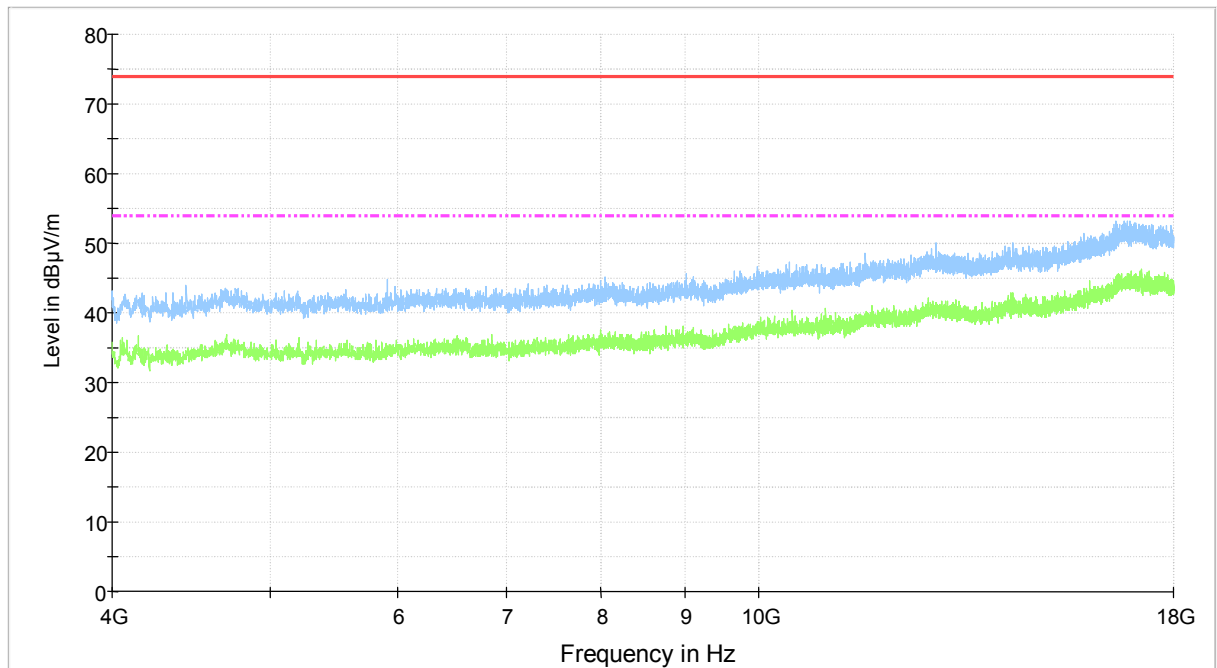
Final measurements from the worst frequencies

Table 12. Final Average results.

Frequency (MHz)	Average (dBµV/m)	Meas. Time 15x(ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
16970.600000	40.6	1000.0	1000.000	327.0	H	248.0	25.4	13.3	53.9	

Spurious and Band Edge Radiated Emissions

FCC Part 15 Class B Spurious Emission 4-18GHz 3m



— FCC Part 15 Class B Electric Field Strength 3 m PK.LimitLine
 - - - FCC Part 15 Class B Electric Field Strength 3 m AV.LimitLine
— Preview Result 1-PK+
 — Preview Result 2-AVG

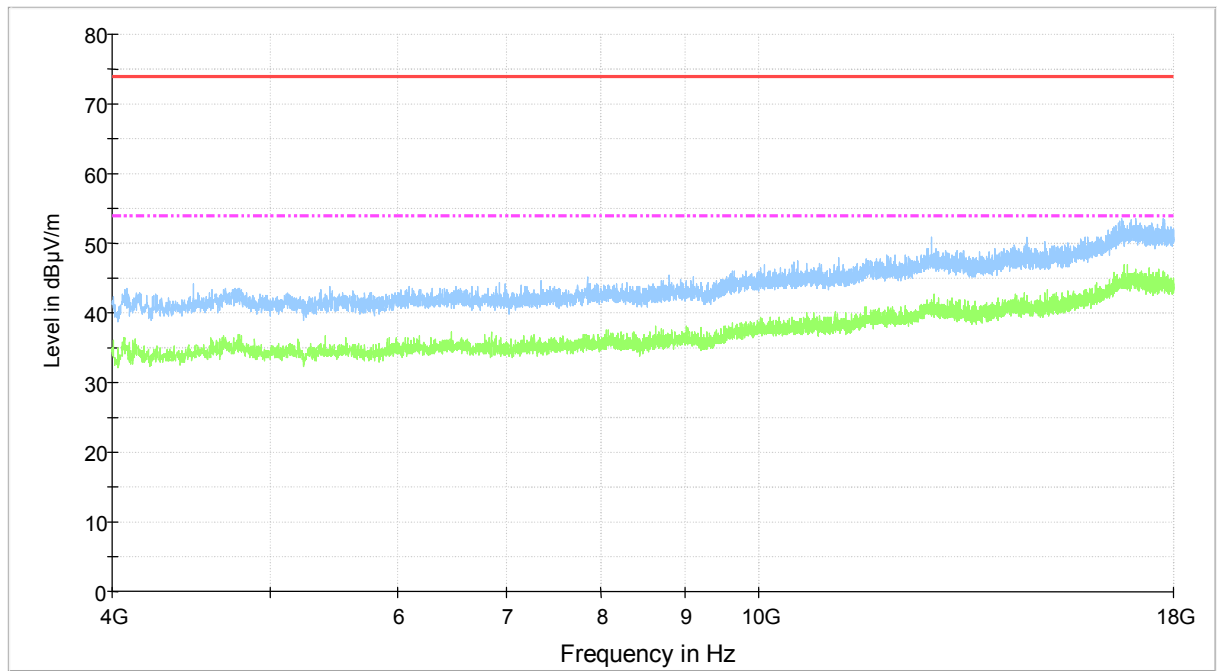
Figure 25. Measured curve with peak- and average detector (middle channel).

Final measurements from the worst frequencies

Due to the low emission level no final measurements were made.

Spurious and Band Edge Radiated Emissions

FCC Part 15 Class B Spurious Emission 4-18GHz 3m



— FCC Part 15 Class B Electric Field Strength 3 m PK.LimitLine
 - - - FCC Part 15 Class B Electric Field Strength 3 m AV.LimitLine
— Preview Result 1-PK+
 — Preview Result 2-AVG

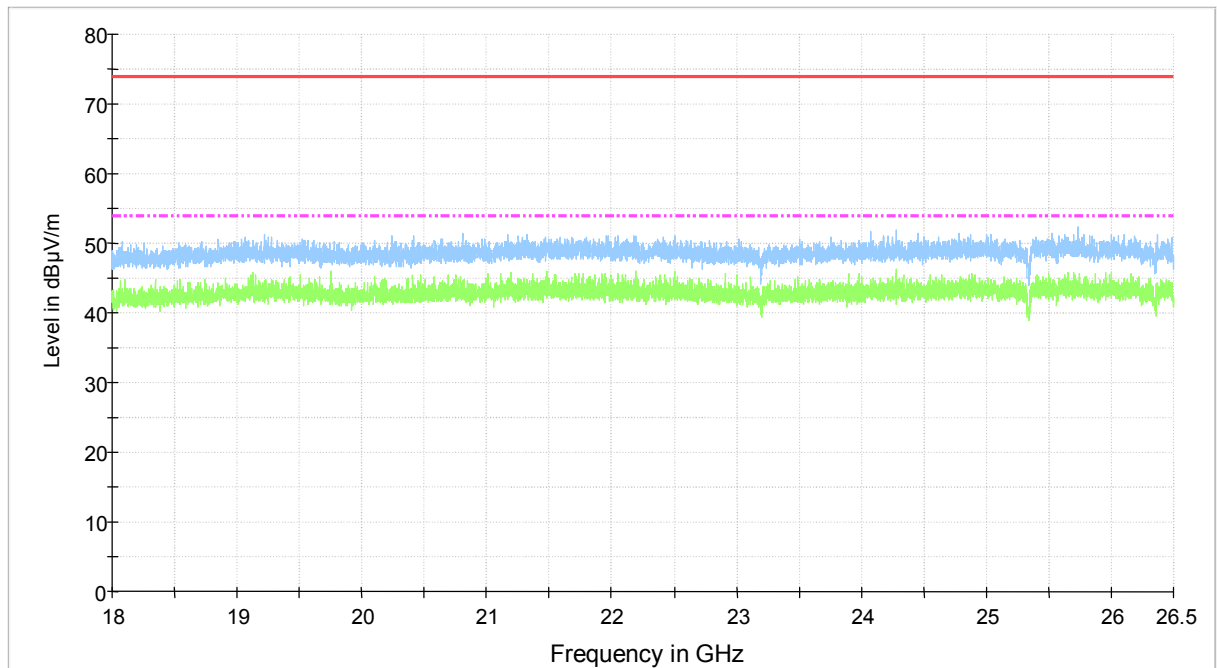
Figure 26. Measured curve with peak- and average detector (high channel).

Final measurements from the worst frequencies

Due to the low emission level no final measurements were made.

Spurious and Band Edge Radiated Emissions

FCC Part 15 Class B Spurious Emission 18-26.5GHz 3m



— FCC Part 15 Class B Electric Field Strength 3 m PK.LimitLine
 - - - FCC Part 15 Class B Electric Field Strength 3 m AV.LimitLine
— Preview Result 1-PK+
 — Preview Result 2-AVG

Figure 27. Measured curve with peak- and average detector (low channel).

Final measurements from the worst frequencies

Due to the low emission level no final measurements were made.