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FCC TEST REPORT

FCC 47 CFR Part 15C

Digital transmission systems operating within the 2400 – 2483.5 MHz band

Report Reference No.....:	G0M-1505-4730-TFC247ZB-V01
Testing Laboratory.....:	Eurofins Product Service GmbH
Address.....:	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation.....:	 A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Filed Test Laboratory, Reg.-No.: 96970
Applicant's name.....:	Atmel Automotive GmbH
Address.....:	Koenigsbruecker Str. 61 01099 Dresden GERMANY
Test specification:	
Standard.....:	47 CFR Part 15C KDB Publication No. 558074 D01 v03r02 ANSI C63.4:2009
Test scope……..…….....:	complete Radio compliance test
Equipment under test (EUT):	
Product description	ATSAMR21 Smart Connect Module with solder mount footprint
Model No.	ATSAMR21G18-MR210UA
Additional Model(s)	None
Brand Name(s)	ATMEL
Hardware version	1.0
Firmware / Software version	Test FW REV2755
	FCC-ID: VNR-ATSAMR210UA-0
Test result	**Passed**

Possible test case verdicts:		
- neither assessed nor tested ..... :	N/N	
- required by standard but not appl. to test object..... :	N/A	
- required by standard but not tested..... :	N/T	
- not required by standard for the test object ..... :	N/R	
- test object does meet the requirement..... :	P (Pass)	
- test object does not meet the requirement..... :	F (Fail)	
Testing:		
Test Lab Temperature..... :	20 – 23 °C	
Test Lab Humidity ..... :	32 – 38 %	
Date of receipt of test item ..... :	2015-05-08	
Date (s) of performance of tests ..... :	2015-05-11 - 20158-05-27	
Compiled by ..... :	Matthias Handrik	
Tested by (+ signature)..... : (Responsible for Test)	Wilfried Treffke	W. Treffke
Approved by (+ signature) ..... :	Christian Weber	C. Weber
Date of issue ..... :	2015-07-24	
Total number of pages ..... :	210	

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

Additional comments:

Version History

Version	Issue Date	Remarks	Revised by
01	2015-07-24	Initial Release	

REPORT INDEX

1 Equipment (Test item) Description

Description	ATSAMR21 Smart Connect Module with solder mount footprint	
Model	ATSAMR21G18-MR210UA	
Additional Model(s)	None	
Brand Name(s)	ATMEL	
Serial number	None	
Hardware version	1.0	
Software / Firmware version	Test FW REV2755	
FCC-ID	VNR-ATSAMR210UA-0	
Equipment type	Radio module	
Radio type	Transceiver	
Radio technology	IEEE 802.15.4	
Operating frequency range	2405 - 2480 MHz	
Assigned frequency band	2400 - 2483.5 MHz	
Main test frequencies	F_{LOW}	2405 MHz
	F_{MID}	2450 MHz
	F_{HIGH}	2480 MHz
Spreading	DSSS	
Modulations	O-QPSK	
Number of channels	16 (11-26)	
Channel spacing	5 MHz	
Number of antennas	2 (diversity operation)	
Antenna “Stub”	Type	external dedicated
	Model	ANT-24G-S21P
	Manufacturer	RF-Solution
	Gain	0.0 dBi (manufacturer declaration)
Antenna “Quarter-Wave”	Type	external dedicated
	Model	M07-FL
	Manufacturer	TekFun
	Gain	5.0 dBi (manufacturer declaration)
Manufacturer	Atmel Automotive GmbH Koenigsbruecker Str. 61 01099 Dresden GERMANY	

Power supply	V_{NOM}	5 VDC
	V_{MIN}	4.5 VDC
	V_{MAX}	5.5 VDC
AC/DC-Adaptor	Model	N/A
	Vendor	N/A
	Input	N/A
	Output	N/A

1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
AE	Laptop	DELL	Latitude D620	
AE : Auxiliary/Associated Equipment				

1.5 Test Modes

Mode #	Description	
OQPSK250	General conditions:	EUT powered via USB and controlled by test-software
	Radio conditions:	Mode = standalone TX Spreading = DSSS Modulation = O-QPSK Power setting for channel “low”, “mid” = 4 Power setting for channel “high” = -9 Antenna “Stub” / -13 Antenna “Quarter-Wave”
OQPSK2000	General conditions:	EUT powered via USB and controlled by test-software
	Radio conditions:	Mode = standalone TX Spreading = None Modulation = O-QPSK Power setting for channel “low”, “mid” = 4 Power setting for channel “high” = -9 Antenna “Stub” / -13 Antenna “Quarter-Wave”
AC-Powerline	General conditions:	EUT powered via USB (laptop)
	Radio conditions:	Mode = standalone transmit Spreading = DSSS Power level = Maximum

1.6 Test Equipment Used During Testing

Measurement Software			
Description	Manufacturer	Name	Version
EMC Test Software	Dare Instruments	Radimation	2014.1.15

6dB Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2015-03	2016-03

Maximum peak conducted power					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2015-03	2016-03

Power spectral density					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2015-03	2016-03

Band edge compliance					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2015-03	2016-03

Conducted spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSW 43	EF00896	2015-03	2016-03

Radiated spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 1	EF00062	-	-
Spectrum Analyzer	R&S	FSIQ26	EF00242	2015-04	2016-04
Biconical Antenna	R&S	HK 116	EF00012	2013-02	2016-02
LPD Antenna	R&S	HL 223	EF00187	2014-03	2017-03
LPD Antenna	R&S	HL 025	EF00327	2013-02	2016-02

AC powerline conducted emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
AMN	R&S	ESH2-Z5	EF00182	2014-11	2016-11
EMI Test Receiver	R&S	ESCS 30	EF00295	2014-10	2015-10

1.7 Sample emission level calculation

The following is a description of terms and a sample calculation, as appears in the radiated emissions data table. The numbers used in the calculation are for example only. There is no direct correlation to the specific data taken for the product described in this document:

Reading:

This is the reading obtained on the spectrum analyzer in dBµV. Any external preamplifiers used are taken into account through internal analyzer settings.

A.F.:

This is the antenna factor for the receiving antenna. It is a conversion factor, which converts electric fields strengths to voltages, which can be measured directly on the spectrum analyzer. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

Reading on Analyzer (dBµV) + A.F. (dB) = Net field strength (dBµV/m)

Net:

This is the net field strength measurement (as shown above).

Limit:

This is the FCC Class B radiated emission limit (in units of dBµV/m). The FCC limits are given in units of µV/m. The following formula is used to convert the units of µV/m to dBµV/m:

Limit (dBµV/m) = 20*log (µV/m)

Margin:

This is the margin of compliance below the FCC limit. The units are given in dB. A negative margin indicates the emission was below the limit. A positive margin indicates that the emission exceeds the limit.

Example only:

Reading	+	AF	=	Net Reading	:	Net reading - FCC limit	= Margin
21.5 dBµV	+	26 dB	=	47.5 dBµV/m	:	47.5 dBµV/m - 57.0 dBµV/m	= -9.5 dB

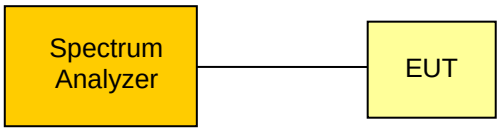
2 Result Summary

FCC 47 CFR Part 15C				
Product Specific Standard Section	**Requirement – Test**	**Reference Method**	**Result**	**Remarks**
FCC § 15.247(a)(2)	6dB Bandwidth	KDB Publication No. 558074	PASS	
FCC § 15.247(b)(3)	Maximum peak conducted power	KDB Publication No. 558074	PASS	
FCC § 15.247(e)	Power spectral density	KDB Publication No. 558074	PASS	
47 CFR 15.207	AC power line conducted emissions	KDB Publication No. 558074 / ANSI C63.4	PASS	
FCC § 15.247(d)	Band edge compliance	KDB Publication No. 558074	PASS	
FCC § 15.247(d)	Conducted spurious emissions	KDB Publication No. 558074	PASS	
FCC § 15.247(d) FCC § 15.209	Transmitter radiated spurious emissions	KDB Publication No. 558074 / ANSI C 63.4	PASS	
Remarks:				

3 Test Conditions and Results

3.1 Test Conditions and Results – 6 dB Bandwidth

6dB Bandwidth acc. to FCC 15.247 / IC RSS-210	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.247(a)(2)
Test according to measurement reference	Reference Method
	FCC KDB Publication No. 558074
Test frequency range	Tested frequencies
	F_{LOW} / F_{MID} / F_{HIGH}
Limits	
≥ 500kHz	
Test setup	



Test procedure

1. EUT set to test mode
2. Span set to at least twice the emission spectrum
3. Detector set to peak and max hold and RBW is set to 100 kHz
4. Envelope peak value of emission spectrum is selected
5. Marker on envelope of spectrum is set to level of -6 dB to the left of the peak
6. Marker on envelope of spectrum is set to level of -6 dB to the right of the peak
7. 6 dB Bandwidth is determined by marker frequency separation

Test results 250kbps

Channel	Frequency [MHz]	Mode	6 dB Bandwidth [kHz]	Limit [kHz]	Result
F_{LOW}	2405	OQPSK250	1434.1	500	PASS
F_{MID}	2450	OQPSK250	1491.1	500	PASS
F_{HIGH}	2480	OQPSK250	1554.0	500	PASS

Test results 2000kbps

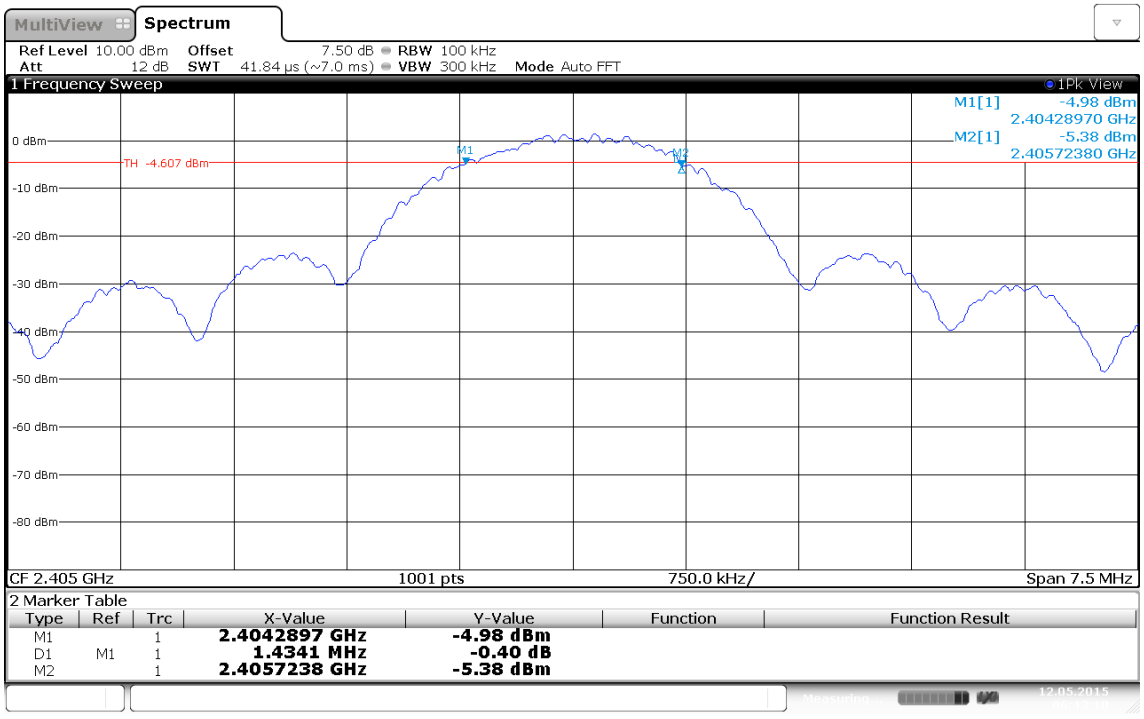
Channel	Frequency [MHz]	Mode	6 dB Bandwidth [kHz]	Limit [kHz]	Result
F_{LOW}	2405	OQPSK2000	1465.7	500	PASS
F_{MID}	2450	OQPSK2000	1443.1	500	PASS
F_{HIGH}	2480	OQPSK2000	1583.9	500	PASS

6 dB Bandwidth – ZIGBEE F_{LOW}

Minimum 6 dB Bandwidth acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2405 MHz, PRBS, 250kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	Procedure 8.1 DTS (558074 D01 Meas Guidance)
Note 2:	Minimum 6 dB Bandwidth conducted



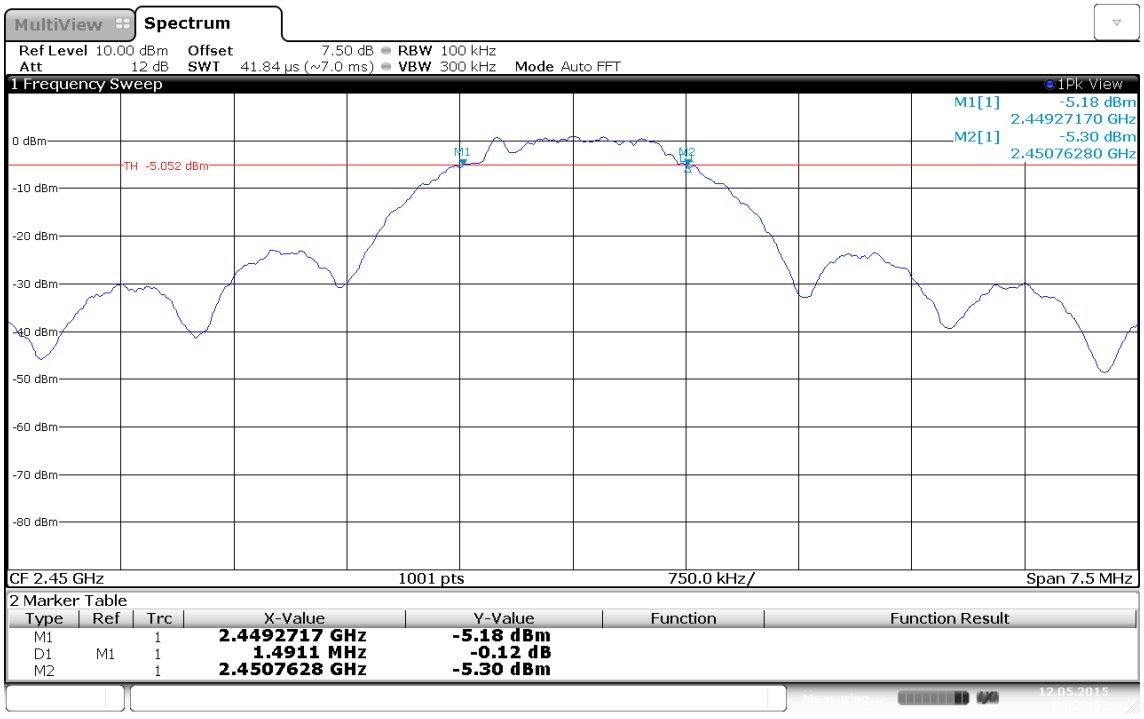
6 dB bandwidth: 1434.1 KHz > 500 KHz
Date: 12.MAY.2015 06:43:11

6 dB Bandwidth – ZIGBEE F_{MID}

Minimum 6 dB Bandwidth acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2450 MHz, PRBS, 250kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	Procedure 8.1 DTS (558074 D01 Meas Guidance)
Note 2:	Minimum 6 dB Bandwidth conducted



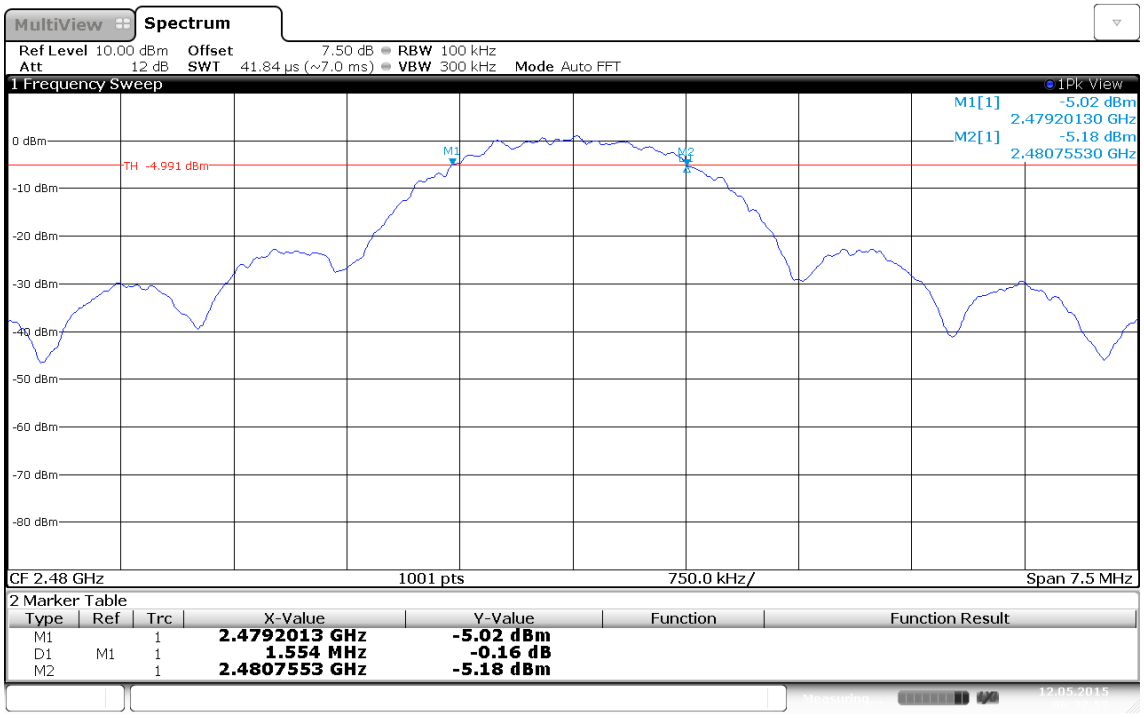
6 dB bandwidth: 1491.1 KHz > 500 KHz
Date: 12.MAY.2015 06:29:52

6 dB Bandwidth – ZIGBEE F_{HIGH}

Minimum 6 dB Bandwidth acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2480 MHz, PRBS, 250kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	Procedure 8.1 DTS (558074 D01 Meas Guidance)
Note 2:	Minimum 6 dB Bandwidth conducted



6 dB bandwidth: 1554 KHz > 500 KHz

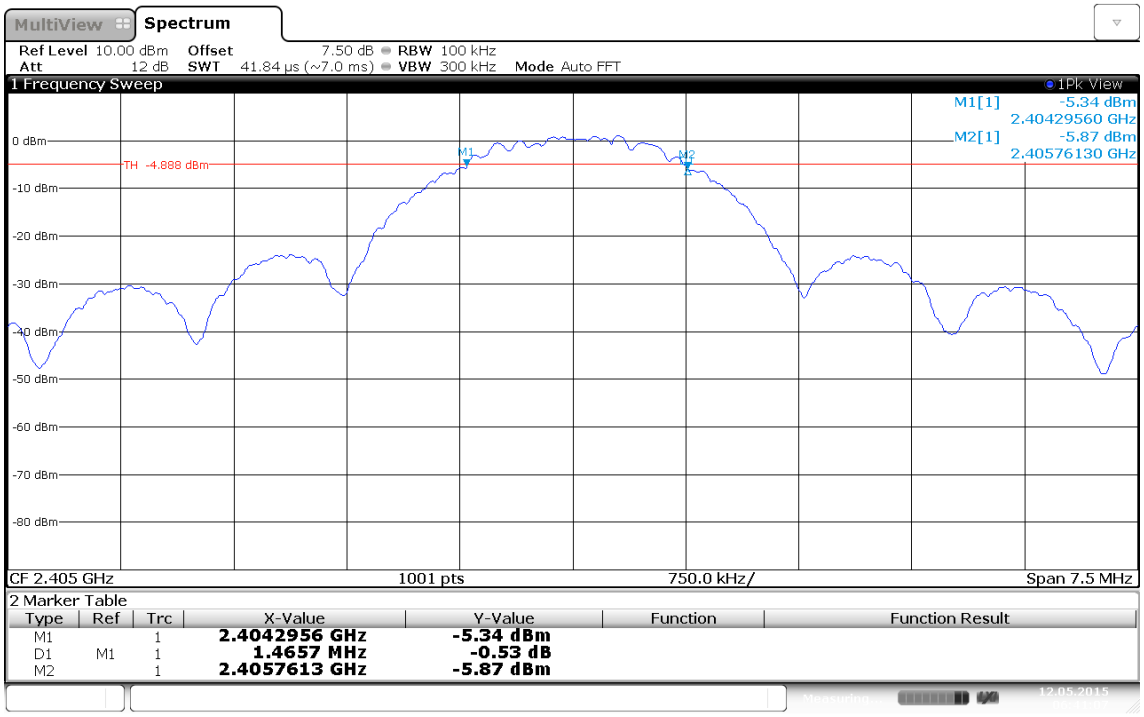
Date: 12.MAY.2015 06:32:52

6 dB Bandwidth – ZIGBEE F_{LOW}

Minimum 6 dB Bandwidth acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2405 MHz, PRBS, 2000kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	Procedure 8.1 DTS (558074 D01 Meas Guidance)
Note 2:	Minimum 6 dB Bandwidth conducted



6 dB bandwidth: 1465.7 KHz > 500 KHz

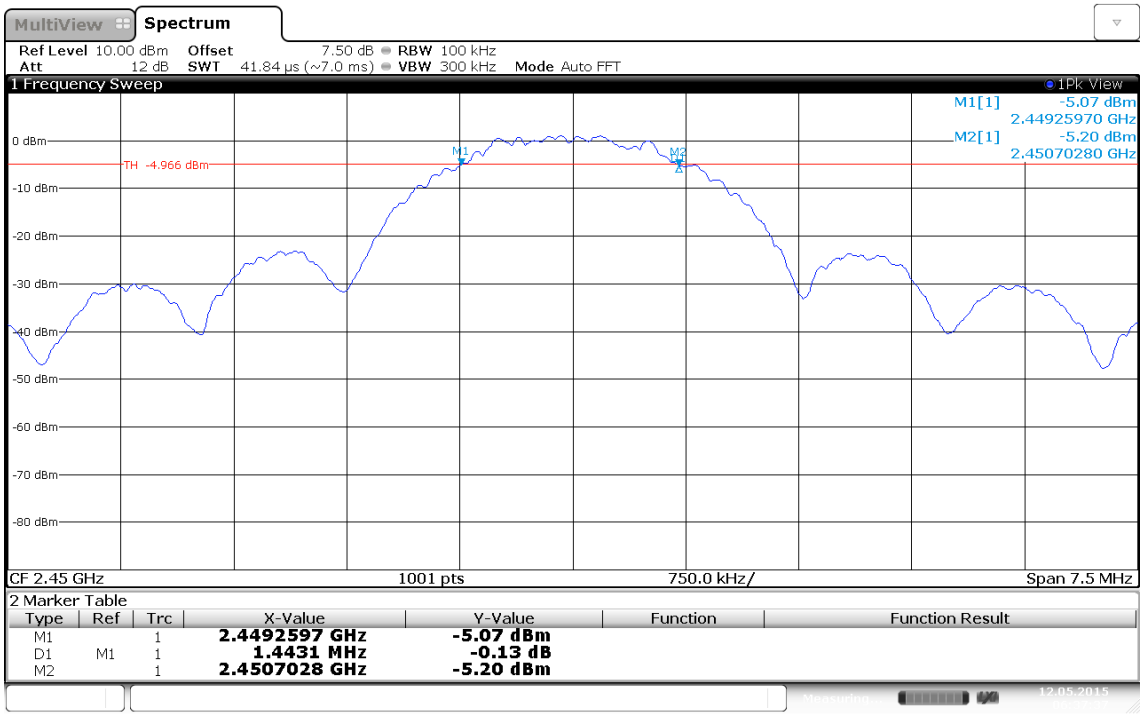
Date: 12.MAY.2015 06:41:07

6 dB Bandwidth – ZIGBEE F_{MID}

Minimum 6 dB Bandwidth acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2450 MHz, PRBS, 20000kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	Procedure 8.1 DTS (558074 D01 Meas Guidance)
Note 2:	Minimum 6 dB Bandwidth conducted



6 dB bandwidth: 1443.1 KHz > 500 KHz

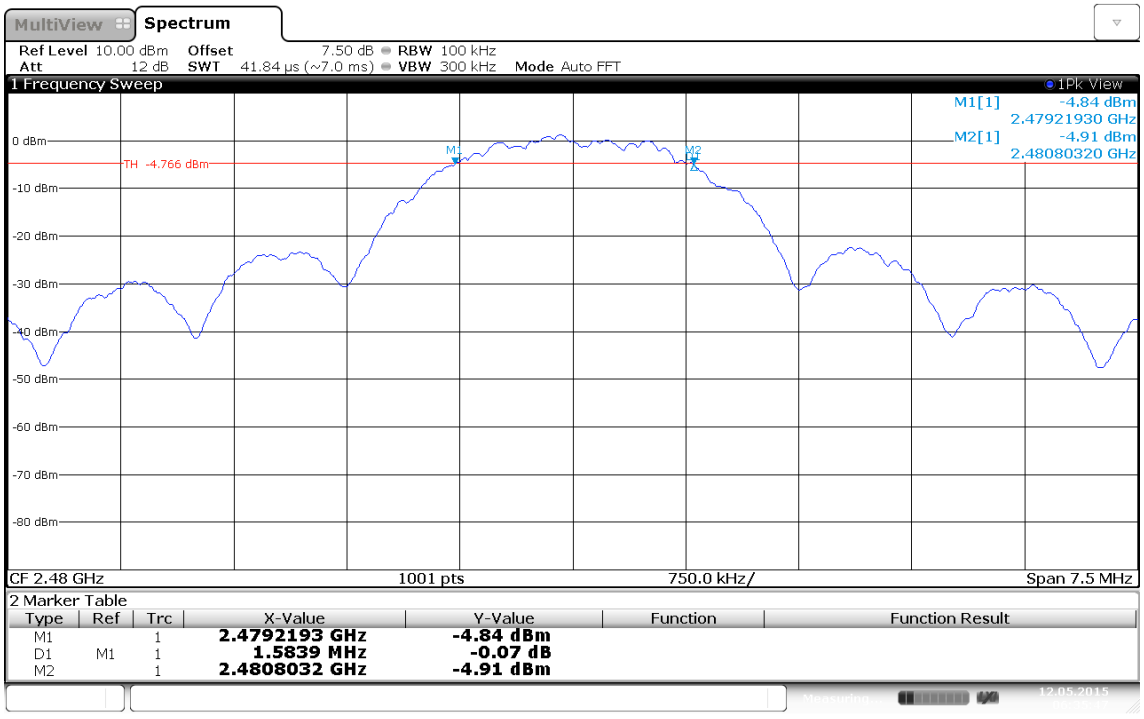
Date: 12.MAY.2015 06:37:37

6 dB Bandwidth – ZIGBEE F_{HIGH}

Minimum 6 dB Bandwidth acc. to FCC 15.247

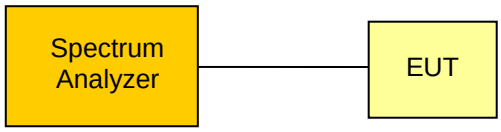
Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2480 MHz, PRBS, 2000kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	Procedure 8.1 DTS (558074 D01 Meas Guidance)
Note 2:	Minimum 6 dB Bandwidth conducted



6 dB bandwidth: 1583.9 KHz > 500 KHz
Date: 12.MAY.2015 06:35:48

3.2 Test Conditions and Results – Maximum peak conducted power

Maximum peak conducted power acc. to FCC 15.247	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.247(b)(3)
Test according to measurement reference	Reference Method
	FCC KDB Publication No. 558074
Test frequency range	Tested frequencies
	F_{LOW} / F_{MID} / F_{HIGH}
Measurement mode	Peak
Maximum antenna gain	5 dBi ⇒ Limit correction = 0 dB
Limits	
1 W (30 dBm)	
The conducted output power limit specified above is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in the table, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
Test setup	
	
Test procedure	
1. EUT set to test mode (Communication tester is used if needed) 2. Center frequency set to test channel center frequency 3. Span set to twice the 20 dB bandwidth and detector to peak and max hold 4. Resolution bandwidth is set to 3 MHz 5. Peak conducted power is determined from peak of spectrum envelope	

Test results 250kbps							
Channel	Frequency [MHz]	Voltage [VDC]	Mode	Peak power [dbm]	Peak power [W]	Limit [dBm]	Margin [dB]
F_{LOW}	2405	V_{NOM} = 5	OQPSK250	3.75	0.0024	30	-26.25
F_{MID}	2450	V_{NOM} = 5	OQPSK250	3.75	0.0024	30	-26.25
F_{HIGH}	2480	V_{NOM} = 5	OQPSK250	-8.40	0.0001	30	-38.40
Test results 2000kbps							
Channel	Frequency [MHz]	Voltage [VDC]	Mode	Peak power [dbm]	Peak power [W]	Limit [dBm]	Margin [dB]
F_{LOW}	2405	V_{NOM} = 5	OQPSK2000	3.75	0.0024	30	-26.25
F_{MID}	2450	V_{NOM} = 5	OQPSK2000	3.72	0.0024	30	-26.28
F_{HIGH}	2480	V_{NOM} = 5	OQPSK2000	-8.43	0.0001	30	-38.43
Comments:							

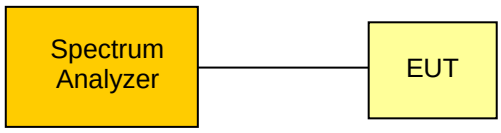
3.3 Test Conditions and Results – Power spectral density

Power spectral density acc. to FCC 15.247	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.247(e)
Test according to measurement reference	Reference Method
	FCC KDB Publication No. 558074
Test frequency range	Tested frequencies
	F_{LOW} / F_{MID} / F_{HIGH}
Measurement mode	Peak

Limits

8 dBm / 3 kHz

Test setup



Test procedure

1. EUT set to test mode (Communication tester is used if needed)
2. Center frequency set to test channel center frequency
3. Span is set large enough to capture maximum emissions in passband, RBW is set to 3kHz
4. Peak power density is determined from peak emission of envelope

Test results 250kbps

Channel	Frequency [MHz]	Test mode	Peak frequency [MHz]	Peak power density [dBm]	Limit [dBm/3kHz]	Margin [dB]
F_{LOW}	2405	OQPSK250	2404.985	1.01	8.0	-06.99
F_{MID}	2450	OQPSK250	2450.000	0.92	8.0	-07.08
F_{HIGH}	2480	OQPSK250	2480.292	-11.81	8.0	-19.81

Test results 2000kbps

Channel	Frequency [MHz]	Test mode	Peak frequency [MHz]	Peak power density [dBm]	Limit [dBm/3kHz]	Margin [dB]
F_{LOW}	2405	OQPSK2000	2405.067	0.93	8.0	-07.07
F_{MID}	2450	OQPSK2000	2450.075	0.69	8.0	-07.31
F_{HIGH}	2480	OQPSK2000	2479.843	-11.66	8.0	-19.66

3.4 Test Conditions and Results – AC power line conducted emissions

Power line conducted emissions acc. to FCC 47 CFR 15.207				**Verdict: PASS**
Test according referenced standards	Reference Method			
	ANSI C63.4			
Fully configured sample scanned over the following frequency range	Frequency range			
	0.15 MHz to 30 MHz			
Points of Application	Application Interface			
AC Mains	LISN			
EUT test mode	AC-Powerline			
Limits and results				
Frequency [MHz]	Quasi-Peak [dBµV]	Result	Average [dBµV]	Result
0.15 to 5	66 to 56*	PASS	56 to 46*	PASS
0.5 to 5	56	PASS	46	PASS
5 to 30	60	PASS	50	PASS
Comments: * Limit decreases linearly with the logarithm of the frequency.				

Conducted Emissions

EMI voltage test in the ac-mains according to FCC 15B

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Unom: 120 V AC
LISN:	ESH2-Z5 N
Mode:	2450 MHz, "Stub" ant.: diversity
Test Date:	2015-05-27
Note:	

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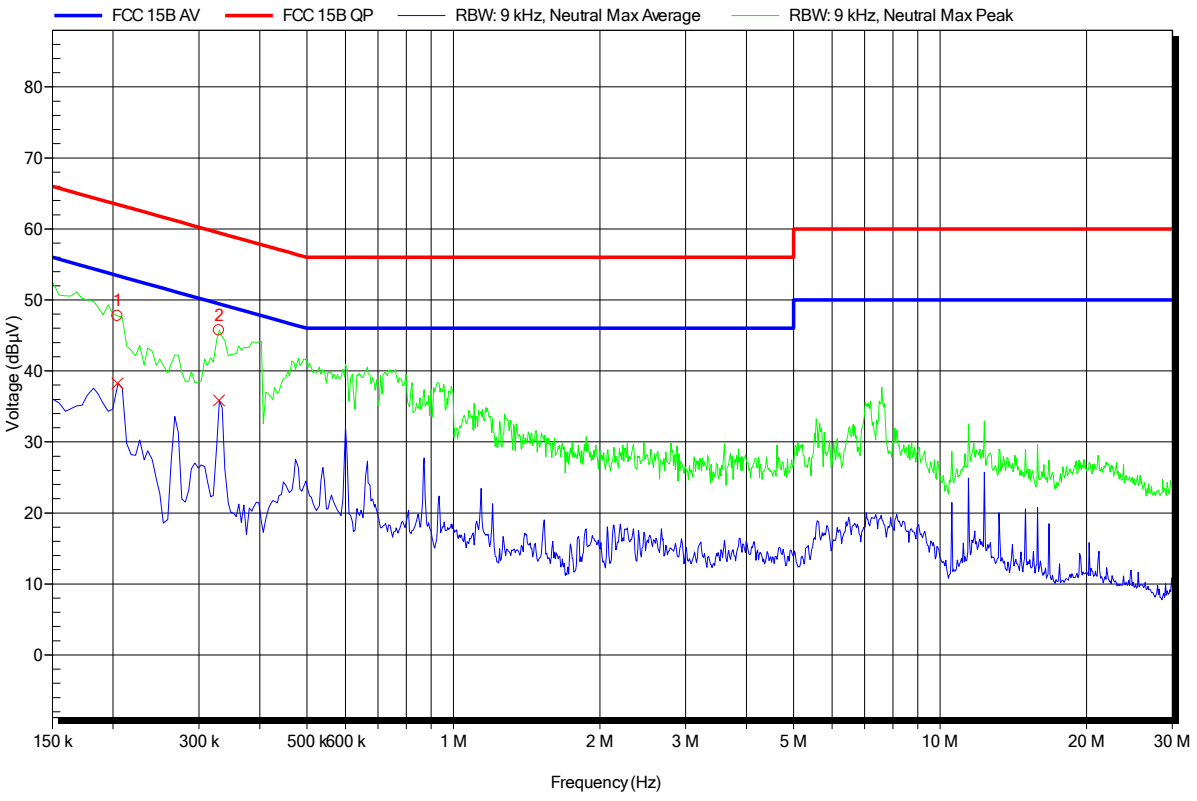

Conducted Emissions

EMI voltage test in the ac-mains according to FCC 15B

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Unom: 120 V AC
LISN:	ESH2-Z5 L
Mode:	2450 MHz, "Stub" ant.: diversity
Test Date:	2015-05-27
Note:	

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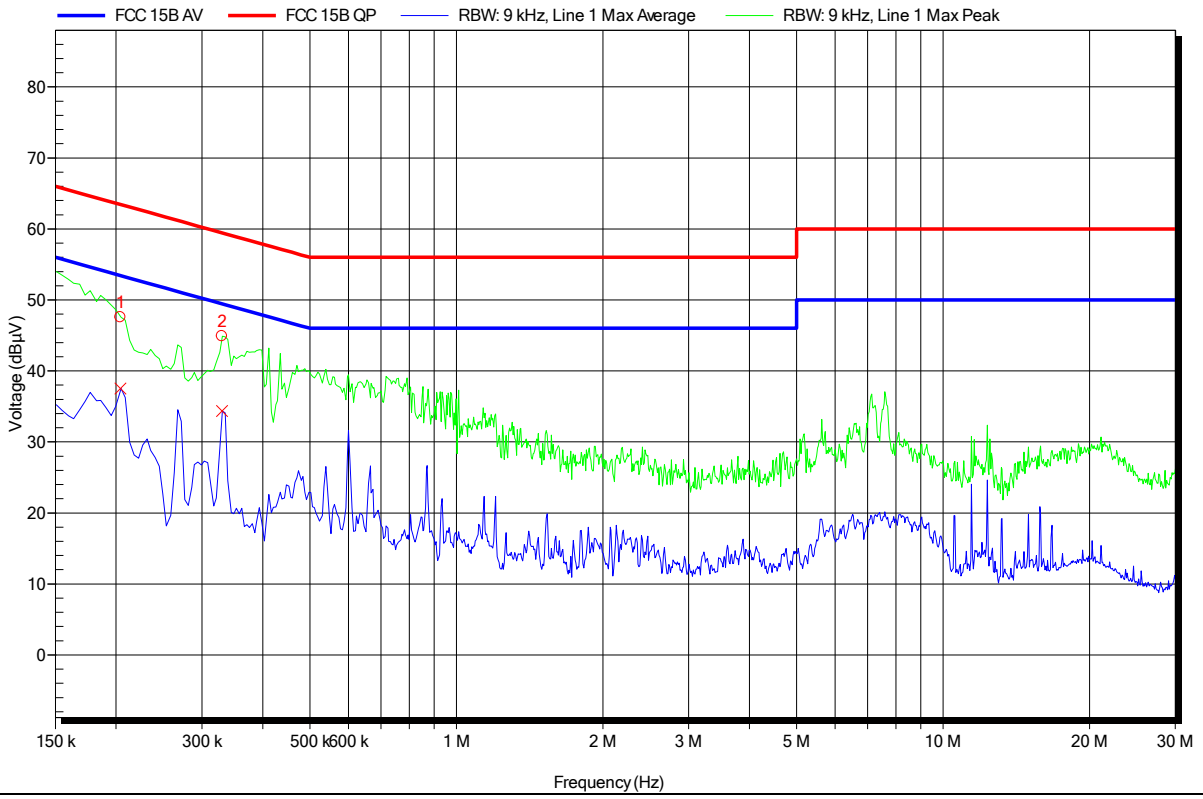

Conducted Emissions

EMI voltage test in the ac-mains according to FCC 15B

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Unom: 120 V AC
LISN:	ESH2-Z5 N
Mode:	2450 MHz, "Quarter-Wave" ant.: diversity
Test Date:	2015-05-27
Note:	

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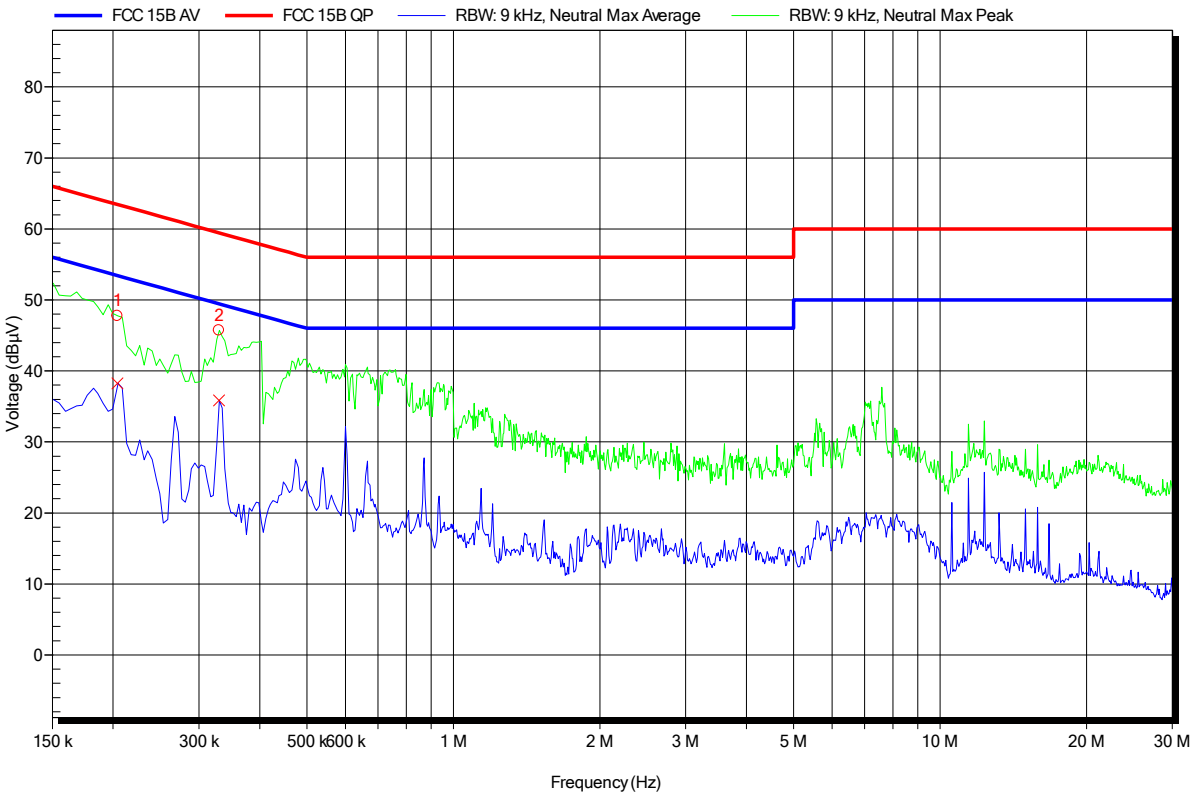

Conducted Emissions

EMI voltage test in the ac-mains according to FCC 15B

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Unom: 120 V AC
LISN:	ESH2-Z5 L
Mode:	2450 MHz, "Quarter-Wave" ant.: diversity
Test Date:	2015-05-27
Note:	

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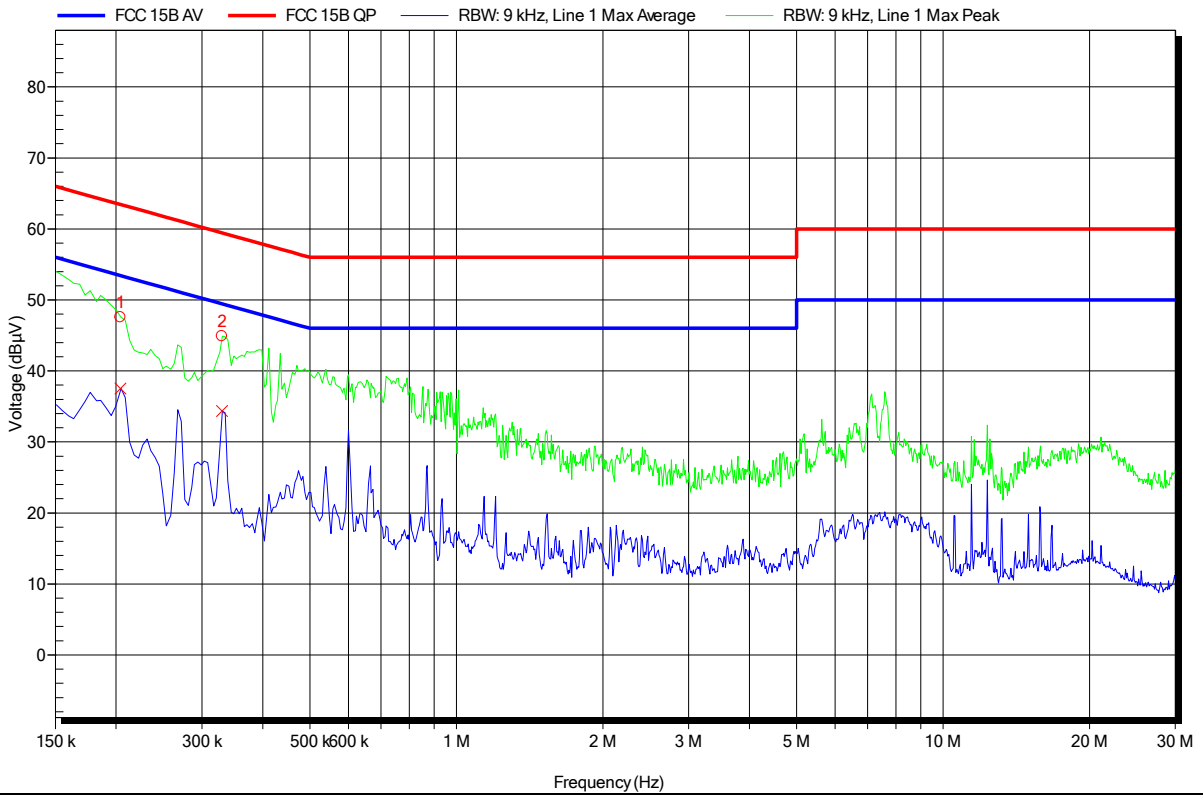


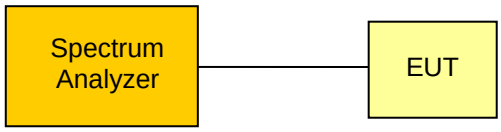
3.5 Test Conditions and Results – Band edge compliance

Band-edge compliance acc. to FCC 15.247 / IC RSS-210	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.247(d)
Test according to measurement reference	Reference Method
	FCC KDB Publication No. 558074
Test frequency range	Tested frequencies
	F_{LOW} / F_{HIGH}
Measurement mode	Peak

Limits

Limit	Condition
≤ -20 dB / 100 kHz	Peak power measurement detector = Peak
≤ -30 dB / 100 kHz	Peak power measurement detector = RMS

Test setup



Test procedure

1. EUT set to test mode (Communication tester is used if needed)
2. Span set around lower band edge and detector is set to peak and max hold
3. Resolution bandwidth is set to 100 kHz
4. Markers are set to peak emission levels within frequency band and outside frequency band
5. Band edge attenuation is determined from level difference

Test results 250kbps

Channel	Frequency [MHz]	Mode	Level [dBc]	Limit [dBc]	Margin [dB]
F_{LOW}	2405	OQPSK250	-41.07	-20	-21.07
F_{HIGH}	2480	OQPSK250	-35.87	-20	-15.87

Test results 2000kbps

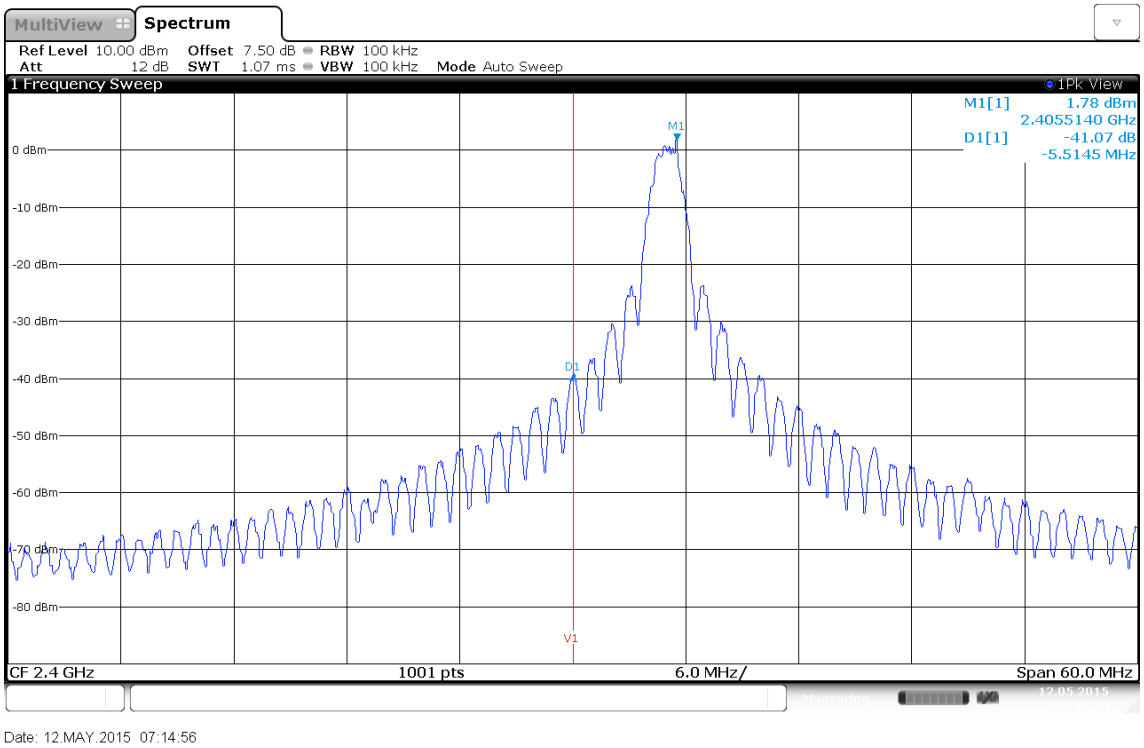
Channel	Frequency [MHz]	Mode	Level [dBc]	Limit [dBc]	Margin [dB]
F_{LOW}	2405	OQPSK2000	-40.50	-20	-20.50
F_{HIGH}	2480	OQPSK2000	-35.54	-20	-15.54

Band-edge compliance – ZIGBEE F_{LOW}

Band-edge compliance acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2405 MHz, PRBS, 250kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	20 dB down method (558074 D01 Meas Guidance)
Note 2:	lower Band-edge, conducted measurement



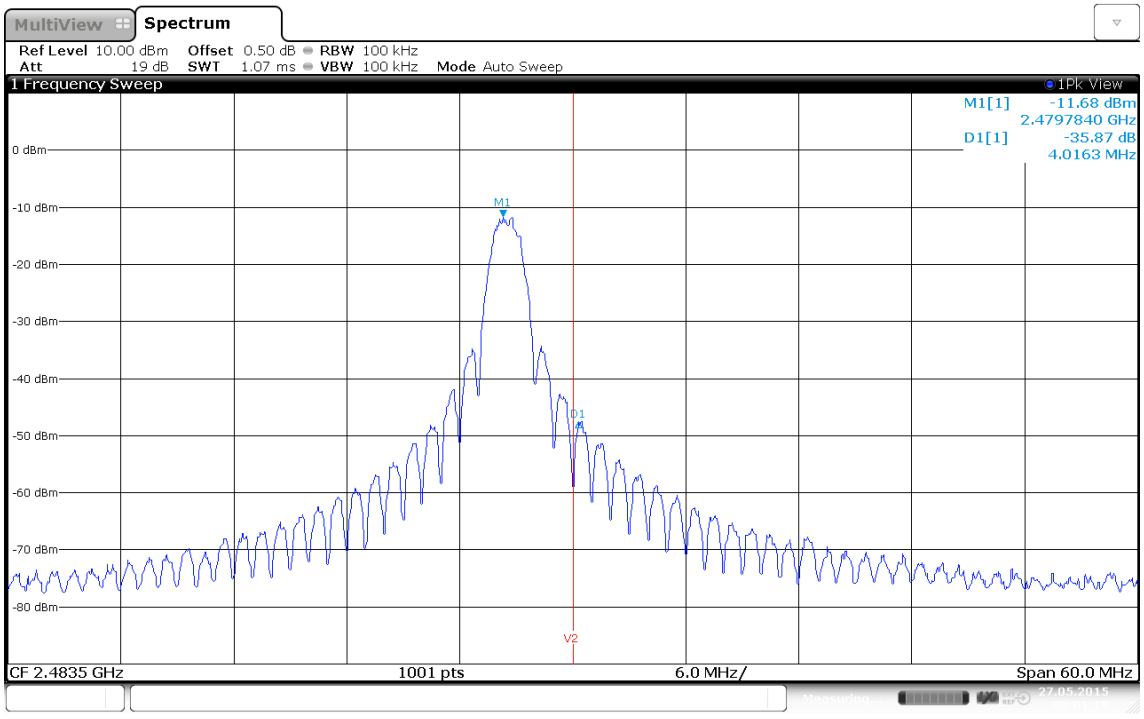
Date: 12.MAY.2015 07:14:56

Band-edge compliance – ZIGBEE F_{HIGH}

Band-edge compliance acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2480 MHz, PRBS, 250kbps
Test Date:	2015-05-27
Verdict:	PASS
Note 1:	20 dB down method (558074 D01 Meas Guidance)
Note 2:	lower Band-edge, conducted measurement



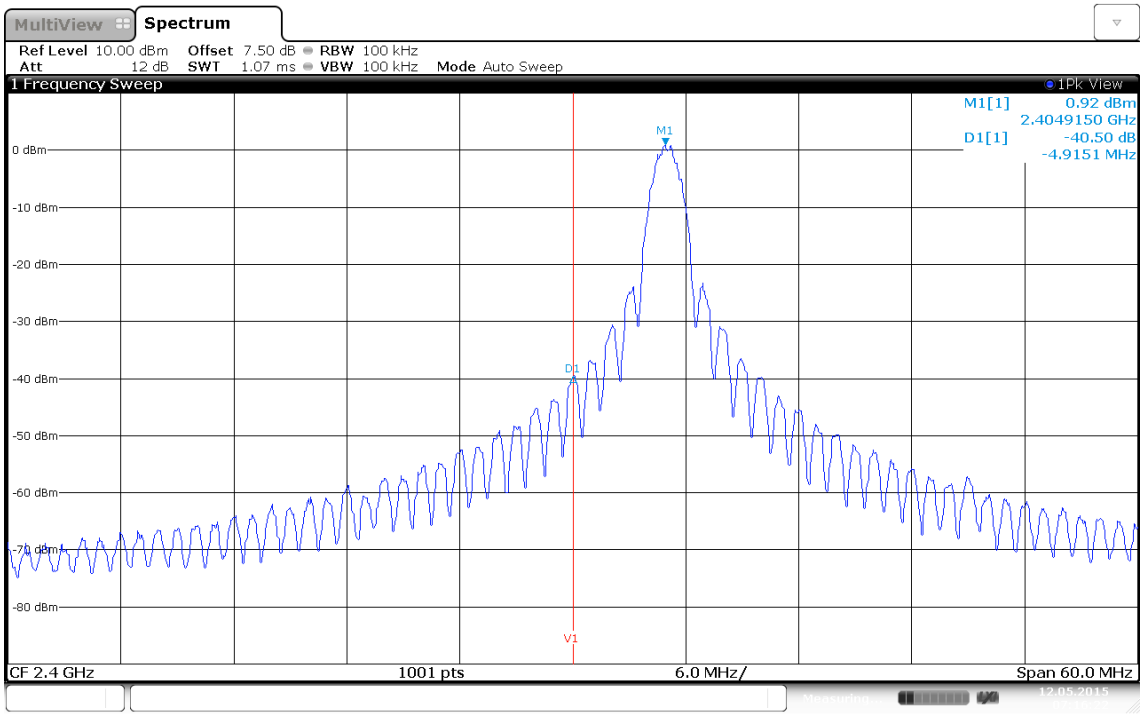
Limit: Marker Delta value >20 dB; Result: PASS
Date: 27.MAY.2015 08:01:19

Band-edge compliance – ZIGBEE F_{LOW}

Band-edge compliance acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2405 MHz, PRBS, 2000kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	20 dB down method (558074 D01 Meas Guidance)
Note 2:	lower Band-edge, conducted measurement



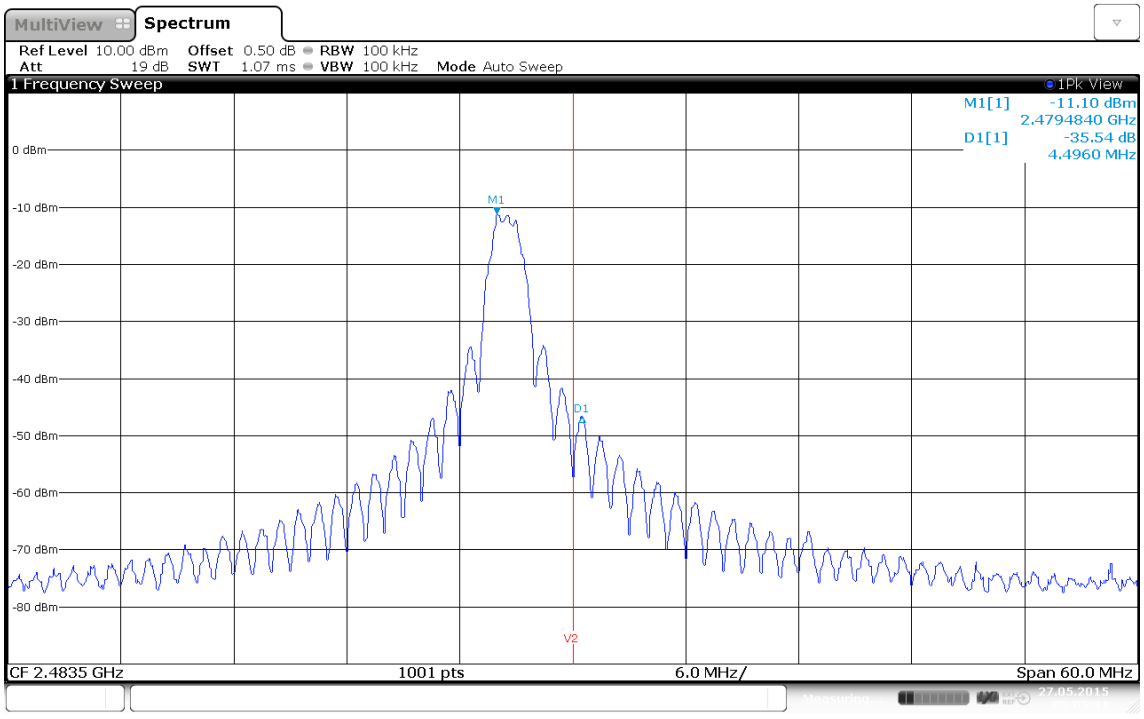
Limit: Marker Delta value >20 dB; Result: PASS
Date: 12.MAY.2015 07:16:22

Band-edge compliance – ZIGBEE F_{HIGH}

Band-edge compliance acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2480 MHz, PRBS, 2000kbps
Test Date:	2015-05-27
Verdict:	PASS
Note 1:	20 dB down method (558074 D01 Meas Guidance)
Note 2:	lower Band-edge, conducted measurement



Limit: Marker Delta value >20 dB; Result: PASS
Date: 27.MAY.2015 08:05:41

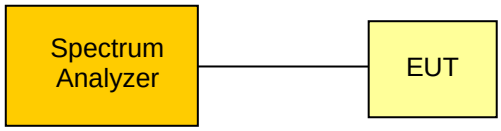
3.6 Test Conditions and Results – Conducted spurious emissions

Conducted spurious emissions acc. to FCC 15.247	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.247(d)
Test according to measurement reference	Reference Method
	FCC KDB Publication No. 558074
Test frequency range	Tested frequencies
	10 MHz – 10th Harmonic
Measurement mode	Peak

Limits

Limit	Condition
≤ -20 dB / 100 kHz	Peak power measurement detector = Peak
≤ -30 dB /100 kHz	Peak power measurement detector = RMS

Test setup



Test procedure

1. EUT set to test mode (Communication tester is used if needed)
2. Span it set according to measurement range
3. Resolution bandwidth is set to 100 kHz and detector to peak and max hold
4. Markers are set to peak emission levels within frequency band
5. Emission level is determined by second marker on emission peak
6. Attenuation is determined from level difference

Test results

Channel	Frequency [MHz]	Mode	Emission [MHz]	Emission Level [dbm]	Peak power [dBm]	Limit [dBm]	Margin [dB]
Test results 250kbps							
F_{LOW}	2405	OQPSK250	4809.03	-55.89	1.00	-19.00	-36.89
F_{LOW}	2405	OQPSK250	9618.059	-65.66	1.00	-19.00	-46.66
Test results 2000kbps							
F_{LOW}	2405	OQPSK2000	4811.000	-56.10	1.2	-18.8	-37.30
Test results 250kbps							
F_{MID}	2450	OQPSK250	4899.020	-57.84	0.6	-19.4	-38.44
F_{MID}	2450	OQPSK250	9797.959	-63.50	0.6	-19.4	-44.10

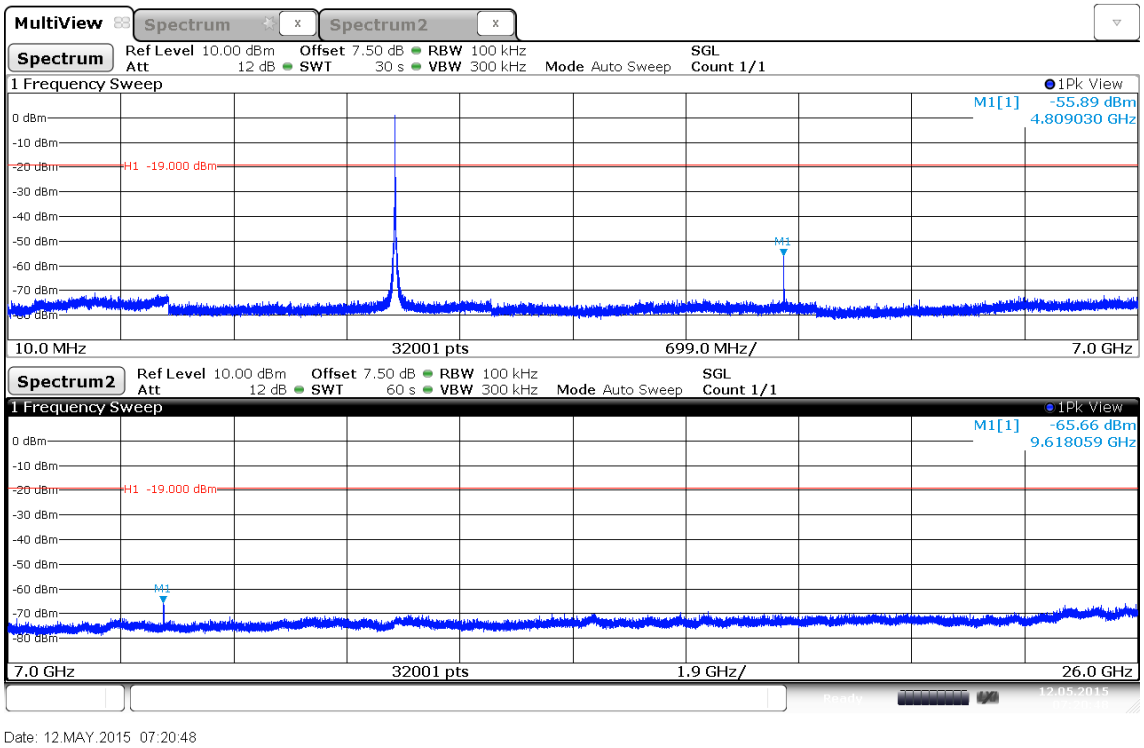
Test results 2000kbps							
F_{MID}	2450	OQPSK2000	4899.020	-58.89	0.9	-19.1	-39.79
F_{MID}	2450	OQPSK2000	9802.116	-64.33	0.9	-19.1	-45.23
Test results 250kbps							
F_{HIGH}	2480	OQPSK250	4961.060	-69.99	-11	-31.0	-38.99
F_{HIGH}	2480	OQPSK250	25772.30	-67.60	-11	-31.0	-36.60
Test results 2000kbps							
F_{HIGH}	2480	OQPSK2000	4961.060	-71.98	-10.4	-30.4	-41.58
F_{HIGH}	2480	OQPSK2000	25803.77	-68.19	-10.4	-30.4	-37.79
Comments:							

Conducted spurious emissions – ZIGBEE F_{LOW}

Spurious Emissions acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2405 MHz, PRBS, 250kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	Spurious in non-restricted frequency bands (558074 D01 Meas Guidance)
Note 2:	conducted measurement



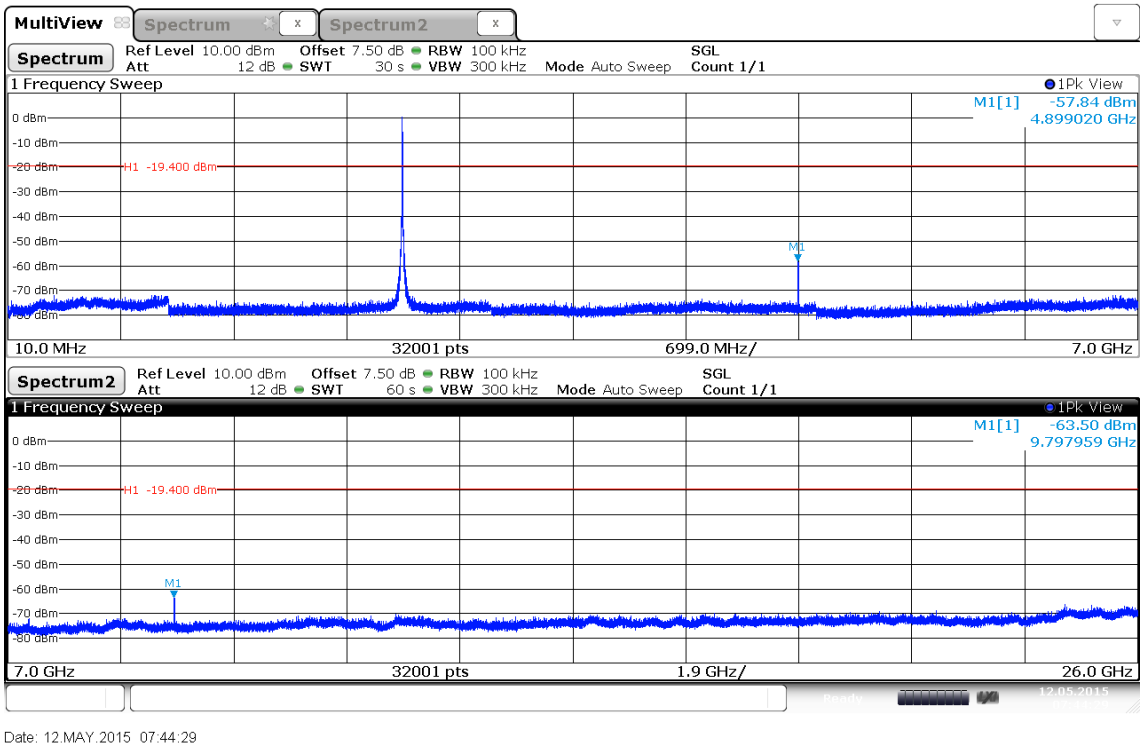
Date: 12.MAY.2015 07:20:48

Conducted spurious emissions – ZIGBEE F_{MID}

Spurious Emissions acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2450 MHz, PRBS, 250kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	Spurious in non-restricted frequency bands (558074 D01 Meas Guidance)
Note 2:	conducted measurement



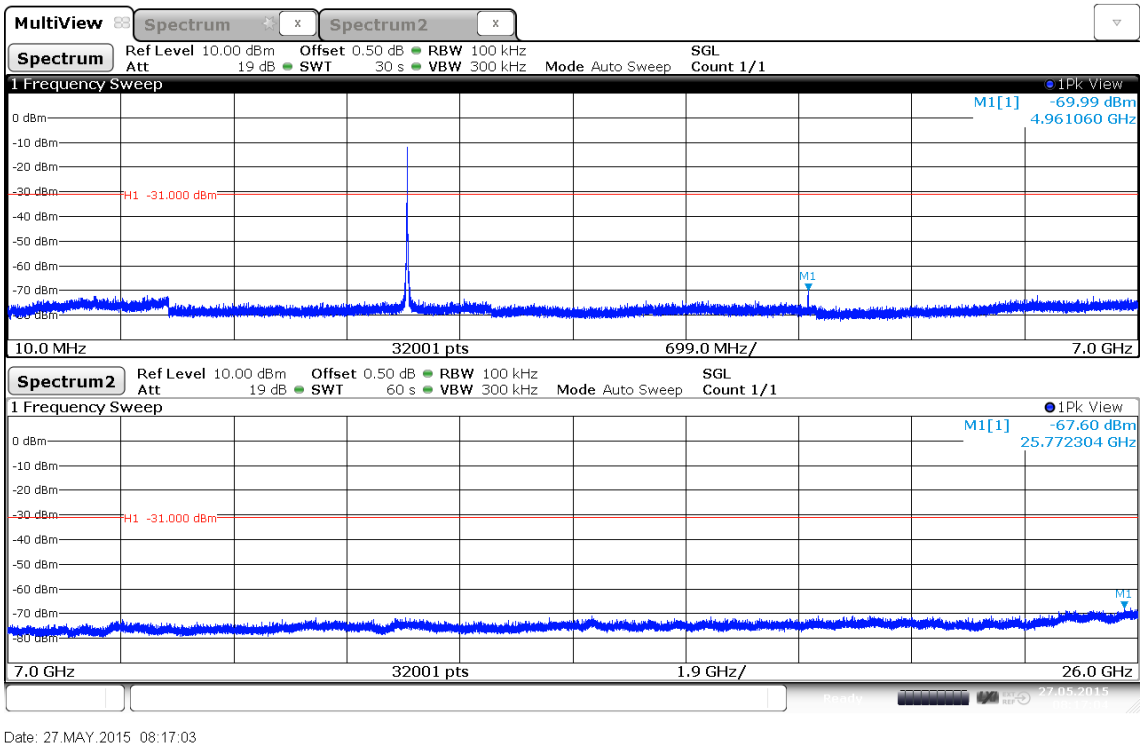
Date: 12.MAY.2015 07:44:29

Conducted spurious emissions – ZIGBEE F_{HIGH}

Spurious Emissions acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2480 MHz, PRBS, 2450kbps
Test Date:	2015-05-27
Verdict:	PASS
Note 1:	Spurious in non-restricted frequency bands (558074 D01 Meas Guidance)
Note 2:	conducted measurement



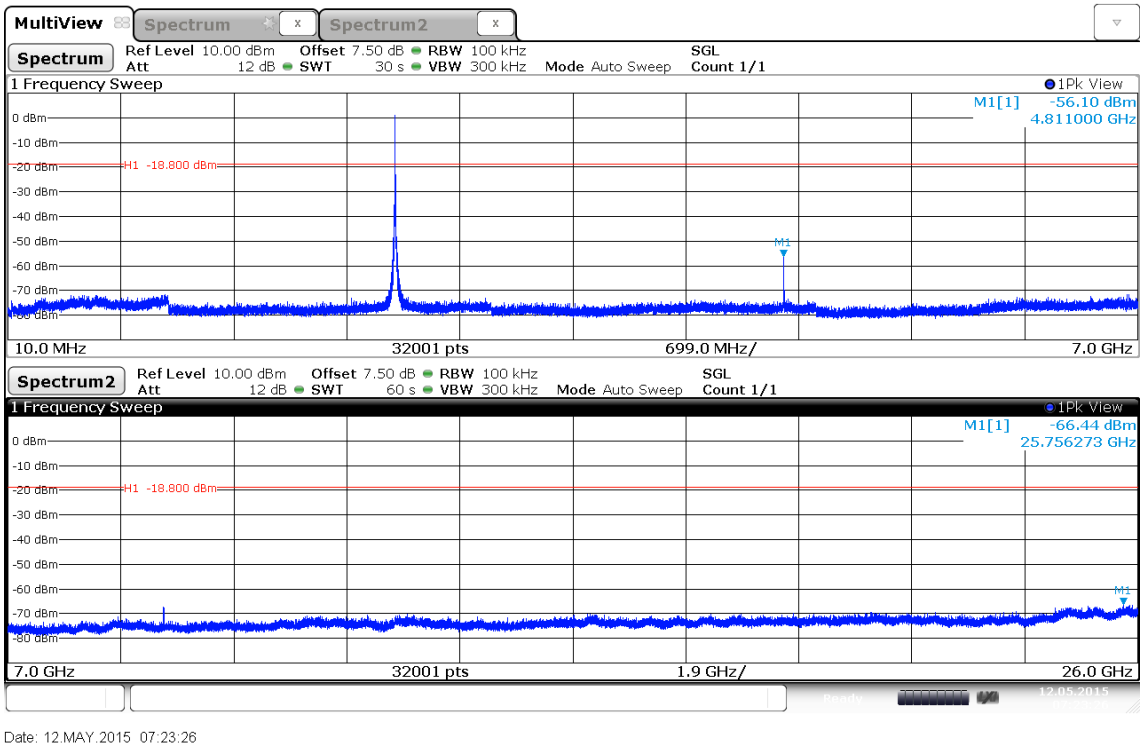
Date: 27.MAY.2015 08:17:03

Conducted spurious emissions – ZIGBEE F_{LOW}

Spurious Emissions acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2405 MHz, PRBS, 2000kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	Spurious in non-restricted frequency bands (558074 D01 Meas Guidance)
Note 2:	conducted measurement



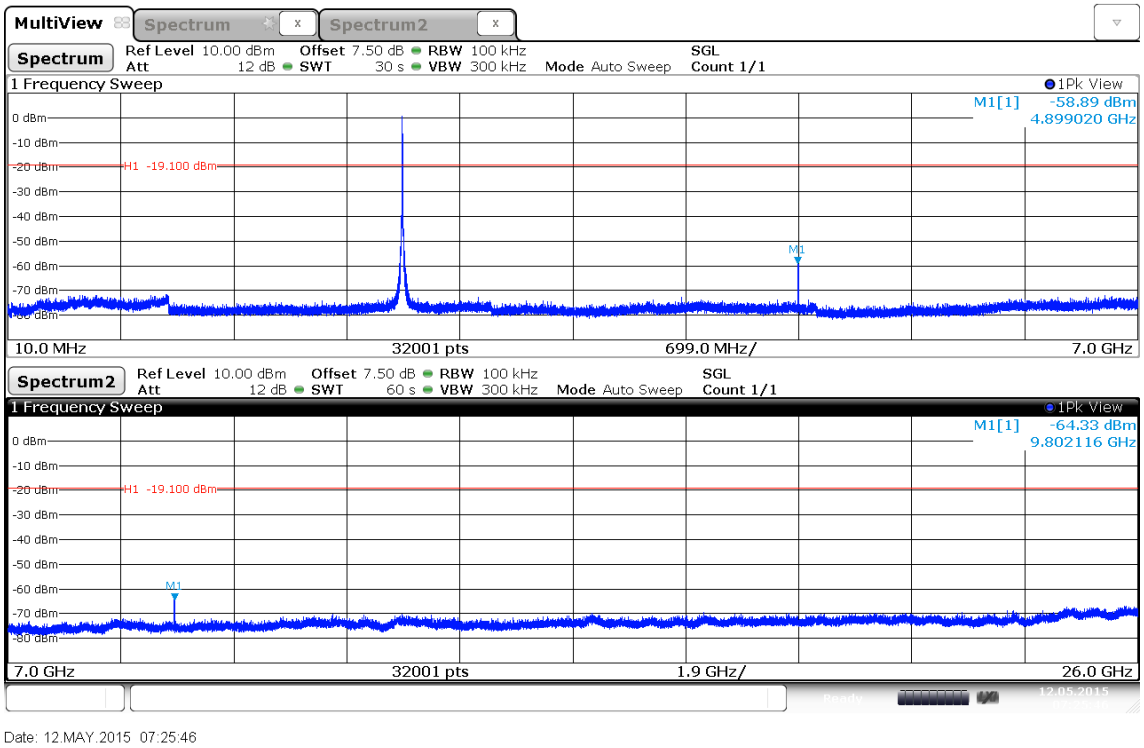
Date: 12.MAY.2015 07:23:26

Conducted spurious emissions – ZIGBEE F_{MID}

Spurious Emissions acc. to FCC 15.247

Project Number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2450 MHz, PRBS, 2000kbps
Test Date:	2015-05-12
Verdict:	PASS
Note 1:	Spurious in non-restricted frequency bands (558074 D01 Meas Guidance)
Note 2:	conducted measurement

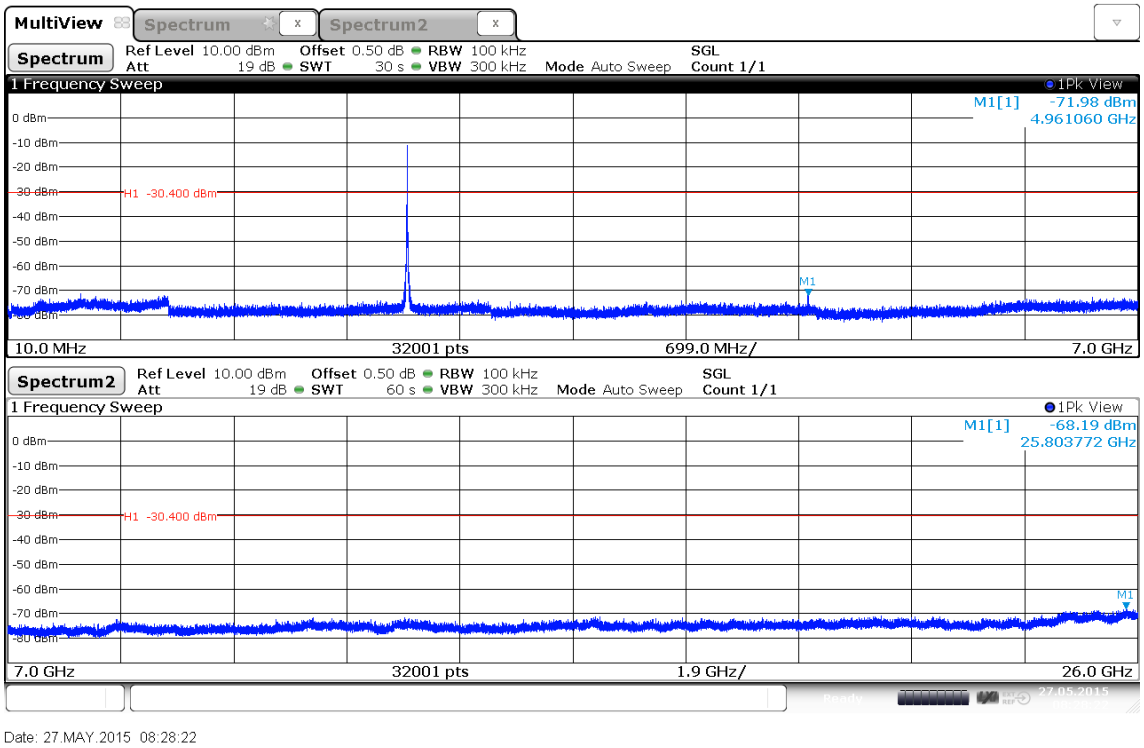


Conducted spurious emissions – ZIGBEE F_{HIGH}

Spurious Emissions acc. to FCC 15.247

Project Number: G0M-1505-4730

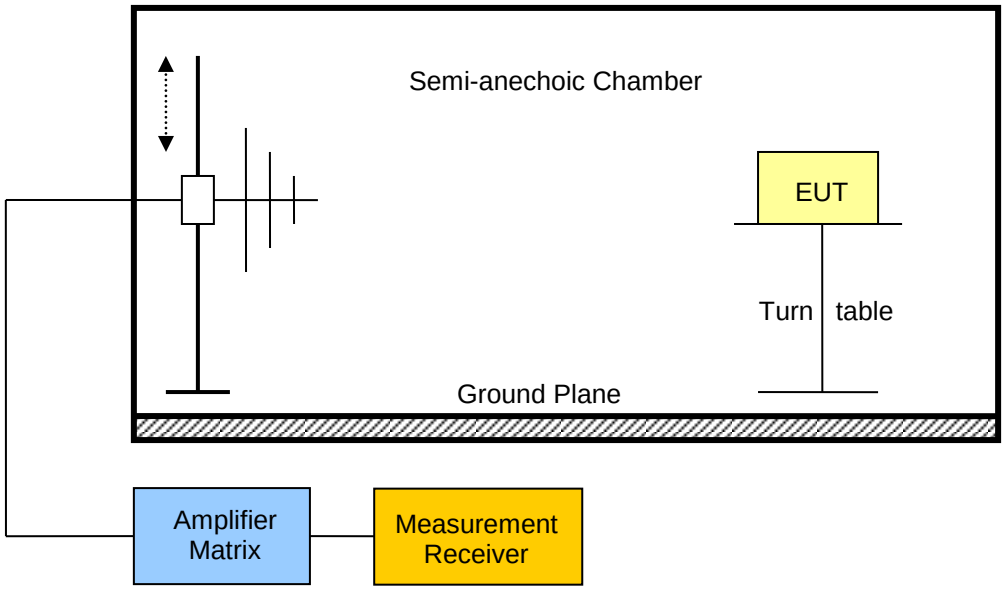
Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Handrik
Test Conditions:	Tnom / Vnom
Mode:	Tx, 2480 MHz, PRBS, 2000kbps
Test Date:	2015-05-27
Verdict:	PASS
Note 1:	Spurious in non-restricted frequency bands (558074 D01 Meas Guidance)
Note 2:	conducted measurement



Date: 27.MAY.2015 08:28:22

3.7 Test Conditions and Results – Transmitter radiated emissions

Transmitter radiated emissions acc. to FCC 47 CFR 15.247				**Verdict: PASS**
Test according referenced standards		Reference Method		
		FCC 15.247(d)		
Test according to measurement reference		Reference Method		
		FCC KDB Publication No. 558074 / ANSI C63.4		
Test frequency range		Tested frequencies		
		30 MHz – 10th Harmonic		
Limits				
Frequency range [MHz]	Detector	Limit [µV/m]	Limit [dBµV/m]	Limit Distance [m]
30 – 88	Quasi-Peak	100	40	3
88 – 216	Quasi-Peak	150	43.5	3
216 – 960	Quasi-Peak	200	46	3
960 – 1000	Quasi-Peak	500	54	3
> 1000	Average	500	54	3
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) (see Section 15.205(c)). When average radiated emission measurements are specified, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.				
Test setup				



Test procedure
1. EUT set to test mode (Communication tester is used if needed) 2. Span it set according to measurement range 3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1 MHz with peak/average detector is used above 1 GHz 4. Markers are set to peak emission levels within restricted bands

Test results – Antenna "Stub" A1

Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dbµV/m]	Det.	Pol.	Limit [dbµV/m]	Limit dist. [m]*	Margin [dB]
F_{LOW}	2405	IEEE 802.15.4	240	26.66	pk	ver	46.00	3	-19.34
F_{LOW}	2405	IEEE 802.15.4	240	29.30	pk	hor	46.00	3	-16.70
F_{LOW}	2405	IEEE 802.15.4	241.6	26.33	pk	ver	46.00	3	-19.67
F_{LOW}	2405	IEEE 802.15.4	403.2	30.80	pk	ver	46.00	3	-15.20
F_{LOW}	2405	IEEE 802.15.4	404.8	32.85	pk	ver	46.00	3	-13.15
F_{LOW}	2405	IEEE 802.15.4	2339	41.61	pk	ver	74.00	3	-32.39
F_{LOW}	2405	IEEE 802.15.4	2339	29.27	RMS	ver	54.00	3	-24.73
F_{LOW}	2405	IEEE 802.15.4	2493	44.72	pk	ver	74.00	3	-29.28
F_{LOW}	2405	IEEE 802.15.4	3924	45.27	pk	ver	74.00	3	-28.73
F_{LOW}	2405	IEEE 802.15.4	4808	43.15	pk	ver	74.00	3	-30.85
F_{LOW}	2405	IEEE 802.15.4	4808	46.06	pk	hor	74.00	3	-27.94
F_{MID}	2450	IEEE 802.15.4	240	26.51	pk	ver	46.00	3	-19.49
F_{MID}	2450	IEEE 802.15.4	240	29.83	pk	hor	46.00	3	-16.17
F_{MID}	2450	IEEE 802.15.4	400	28.34	pk	hor	46.00	3	-17.66
F_{MID}	2450	IEEE 802.15.4	403.2	32.56	pk	ver	46.00	3	-13.44
F_{MID}	2450	IEEE 802.15.4	404.8	31.37	pk	ver	46.00	3	-14.63
F_{MID}	2450	IEEE 802.15.4	2496	44.40	pk	ver	74.00	3	-29.60
F_{MID}	2450	IEEE 802.15.4	3982	44.80	pk	ver	74.00	3	-29.20
F_{MID}	2450	IEEE 802.15.4	4896	44.88	pk	ver	74.00	3	-29.12
F_{MID}	2450	IEEE 802.15.4	4896	46.51	pk	hor	74.00	3	-27.49
F_{HIGH}	2480	IEEE 802.15.4	2484	52.98	pk	ver	74.00	3	-21.02
F_{HIGH}	2480	IEEE 802.15.4	2484	46.08	RMS	ver	54.00	3	-07.92
F_{HIGH}	2480	IEEE 802.15.4	2492	42.39	pk	ver	74.00	3	-31.61
F_{HIGH}	2480	IEEE 802.15.4	2492	29.47	RMS	ver	54.00	3	-24.53
F_{HIGH}	2480	IEEE 802.15.4	2495	44.28	pk	ver	74.00	3	-29.72
F_{HIGH}	2480	IEEE 802.15.4	2495	32.66	RMS	ver	54.00	3	-21.34
F_{HIGH}	2480	IEEE 802.15.4	2497	44.04	pk	ver	74.00	3	-29.96
F_{HIGH}	2480	IEEE 802.15.4	2497	34.11	RMS	ver	54.00	3	-19.89

F_{HIGH}	2480	IEEE 802.15.4	3979	44.94	pk	ver	74.00	3	-29.06
F_{HIGH}	2480	IEEE 802.15.4	7680	41.78	pk	ver	74.00	3	-32.22
F_{HIGH}	2480	IEEE 802.15.4	240	29.87	pk	hor	46.00	3	-16.13
F_{HIGH}	2480	IEEE 802.15.4	241.6	26.79	pk	hor	46.00	3	-19.21
F_{HIGH}	2480	IEEE 802.15.4	404.8	32.52	pk	ver	46.00	3	-13.48
F_{HIGH}	2480	IEEE 802.15.4	404.8	26.93	pk	hor	46.00	3	-19.07
Comments: * Physical distance between EUT and measurement antenna. After radiated spurious check between 250 / 2000 kbps no differences in the results, measurement were performed with 250kbps.									

Test results – Antenna "Stub" A2									
Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dbµV/m]	Det.	Pol.	Limit [dbµV/m]	Limit dist. [m]*	Margin [dB]
F_{LOW}	2405	IEEE 802.15.4	240	27.71	pk	hor	46.00	3	-18.29
F_{LOW}	2405	IEEE 802.15.4	403.2	32.01	pk	ver	46.00	3	-13.99
F_{LOW}	2405	IEEE 802.15.4	403.2	26.31	pk	hor	46.00	3	-19.69
F_{LOW}	2405	IEEE 802.15.4	404.8	32.16	pk	ver	46.00	3	-13.84
F_{LOW}	2405	IEEE 802.15.4	2339	40.92	pk	ver	74.00	3	-33.08
F_{LOW}	2405	IEEE 802.15.4	2339	29.38	RMS	ver	54.00	3	-24.62
F_{LOW}	2405	IEEE 802.15.4	3961	44.27	pk	ver	74.00	3	-29.73
F_{LOW}	2405	IEEE 802.15.4	4808	42.43	pk	ver	74.00	3	-31.57
F_{LOW}	2405	IEEE 802.15.4	4808	45.48	pk	hor	74.00	3	-28.52
F_{LOW}	2405	IEEE 802.15.4	7488	42.32	pk	ver	74.00	3	-31.68
F_{LOW}	2405	IEEE 802.15.4	7488	42.62	pk	hor	74.00	3	-31.38
F_{MID}	2450	IEEE 802.15.4	240	29.69	pk	hor	46.00	3	-16.31
F_{MID}	2450	IEEE 802.15.4	400	30.05	pk	ver	46.00	3	-15.95
F_{MID}	2450	IEEE 802.15.4	400	26.35	pk	hor	46.00	3	-19.65
F_{MID}	2450	IEEE 802.15.4	403.2	32.69	pk	ver	46.00	3	-13.31
F_{MID}	2450	IEEE 802.15.4	404.8	31.89	pk	ver	46.00	3	-14.11
F_{MID}	2450	IEEE 802.15.4	1417	45.14	pk	ver	74.00	3	-28.86
F_{MID}	2450	IEEE 802.15.4	3864	44.04	pk	hor	74.00	3	-29.96
F_{MID}	2450	IEEE 802.15.4	3970	44.52	pk	ver	74.00	3	-29.48
F_{MID}	2450	IEEE 802.15.4	3973	44.01	pk	hor	74.00	3	-29.99
F_{MID}	2450	IEEE 802.15.4	4896	41.38	pk	ver	74.00	3	-32.62
F_{MID}	2450	IEEE 802.15.4	4896	44.17	pk	hor	74.00	3	-29.83
F_{MID}	2450	IEEE 802.15.4	7344	44.07	pk	ver	74.00	3	-29.93
F_{MID}	2450	IEEE 802.15.4	7344	44.96	pk	hor	74.00	3	-29.04
F_{HIGH}	2480	IEEE 802.15.4	2484	58.72	pk	ver	74.00	3	-15.28
F_{HIGH}	2480	IEEE 802.15.4	2484	52.64	RMS	ver	54.00	3	-01.36
F_{HIGH}	2480	IEEE 802.15.4	2484	57.15	pk	hor	74.00	3	-16.85
F_{HIGH}	2480	IEEE 802.15.4	2484	50.58	RMS	hor	54.00	3	-03.42
F_{HIGH}	2480	IEEE 802.15.4	2492	45.93	pk	ver	74.00	3	-28.07
F_{HIGH}	2480	IEEE 802.15.4	2492	32.57	RMS	ver	54.00	3	-21.43
F_{HIGH}	2480	IEEE 802.15.4	2494	45.12	pk	ver	74.00	3	-28.88
F_{HIGH}	2480	IEEE 802.15.4	2494	33.62	RMS	ver	54.00	3	-20.38
F_{HIGH}	2480	IEEE 802.15.4	2497	43.78	pk	ver	74.00	3	-30.22

F_{HIGH}	2480	IEEE 802.15.4	2497	34.56	RMS	ver	54.00	3	-19.44
F_{HIGH}	2480	IEEE 802.15.4	2500	44.28	pk	ver	74.00	3	-29.72
F_{HIGH}	2480	IEEE 802.15.4	3754	44.75	pk	ver	74.00	3	-29.25
F_{HIGH}	2480	IEEE 802.15.4	3838	44.57	pk	ver	74.00	3	-29.43
F_{HIGH}	2480	IEEE 802.15.4	3901	47.15	pk	hor	74.00	3	-26.85
F_{HIGH}	2480	IEEE 802.15.4	240	29.11	pk	hor	46.00	3	-16.89
F_{HIGH}	2480	IEEE 802.15.4	401.6	31.56	pk	ver	46.00	3	-14.44
F_{HIGH}	2480	IEEE 802.15.4	404.8	26.03	pk	hor	46.00	3	-19.97
F_{HIGH}	2480	IEEE 802.15.4	406.4	32.82	pk	ver	46.00	3	-13.18
Comments: * Physical distance between EUT and measurement antenna. After radiated spurious check between 250 / 2000 kbps no differences in the results, measurement were performed with 250kbps.									

Test results – Antenna “Quarter-Wave” A1									
Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dbµV/m]	Det.	Pol.	Limit [dbµV/m]	Limit dist. [m]*	Margin [dB]
F_{LOW}	2405	IEEE 802.15.4	240	30.62	pk	hor	46.00	3	-15.38
F_{LOW}	2405	IEEE 802.15.4	241.6	29.06	pk	hor	46.00	3	-16.94
F_{LOW}	2405	IEEE 802.15.4	331.2	27.56	pk	hor	46.00	3	-18.44
F_{LOW}	2405	IEEE 802.15.4	2339	42.71	pk	ver	74.00	3	-31.29
F_{LOW}	2405	IEEE 802.15.4	2339	30.20	RMS	ver	54.00	3	-23.80
F_{LOW}	2405	IEEE 802.15.4	4808	43.59	pk	ver	74.00	3	-30.41
F_{LOW}	2405	IEEE 802.15.4	4808	52.29	pk	hor	74.00	3	-21.71
F_{MID}	2450	IEEE 802.15.4	240	30.78	pk	hor	46.00	3	-15.22
F_{MID}	2450	IEEE 802.15.4	243.2	27.91	pk	hor	46.00	3	-18.09
F_{MID}	2450	IEEE 802.15.4	4896	42.04	pk	ver	74.00	3	-31.96
F_{MID}	2450	IEEE 802.15.4	4896	49.71	pk	hor	74.00	3	-24.29
F_{HIGH}	2480	IEEE 802.15.4	2484	51.63	pk	ver	74.00	3	-22.37
F_{HIGH}	2480	IEEE 802.15.4	2484	44.60	RMS	ver	54.00	3	-09.40
F_{HIGH}	2480	IEEE 802.15.4	2484	58.16	pk	hor	74.00	3	-15.84
F_{HIGH}	2480	IEEE 802.15.4	2484	51.69	RMS	hor	54.00	3	-02.31
F_{HIGH}	2480	IEEE 802.15.4	2495	44.74	pk	ver	74.00	3	-29.26
F_{HIGH}	2480	IEEE 802.15.4	2495	33.33	RMS	ver	54.00	3	-20.67
F_{HIGH}	2480	IEEE 802.15.4	2499	44.84	pk	ver	74.00	3	-29.16
F_{HIGH}	2480	IEEE 802.15.4	2499	32.67	RMS	ver	54.00	3	-21.33
F_{HIGH}	2480	IEEE 802.15.4	3877	45.17	pk	ver	74.00	3	-28.83
F_{HIGH}	2480	IEEE 802.15.4	3898	47.04	pk	hor	74.00	3	-26.96
F_{HIGH}	2480	IEEE 802.15.4	240	29.56	pk	ver	46.00	3	-16.44

F_{HIGH}	2480	IEEE 802.15.4	403.2	27.15	pk	ver	46.00	3	-18.85
F_{HIGH}	2480	IEEE 802.15.4	404.8	29.41	pk	ver	46.00	3	-16.59
Comments: * Physical distance between EUT and measurement antenna. After radiated spurious check between 250 / 2000 kbps no differences in the results, measurement were performed with 250kbps.									

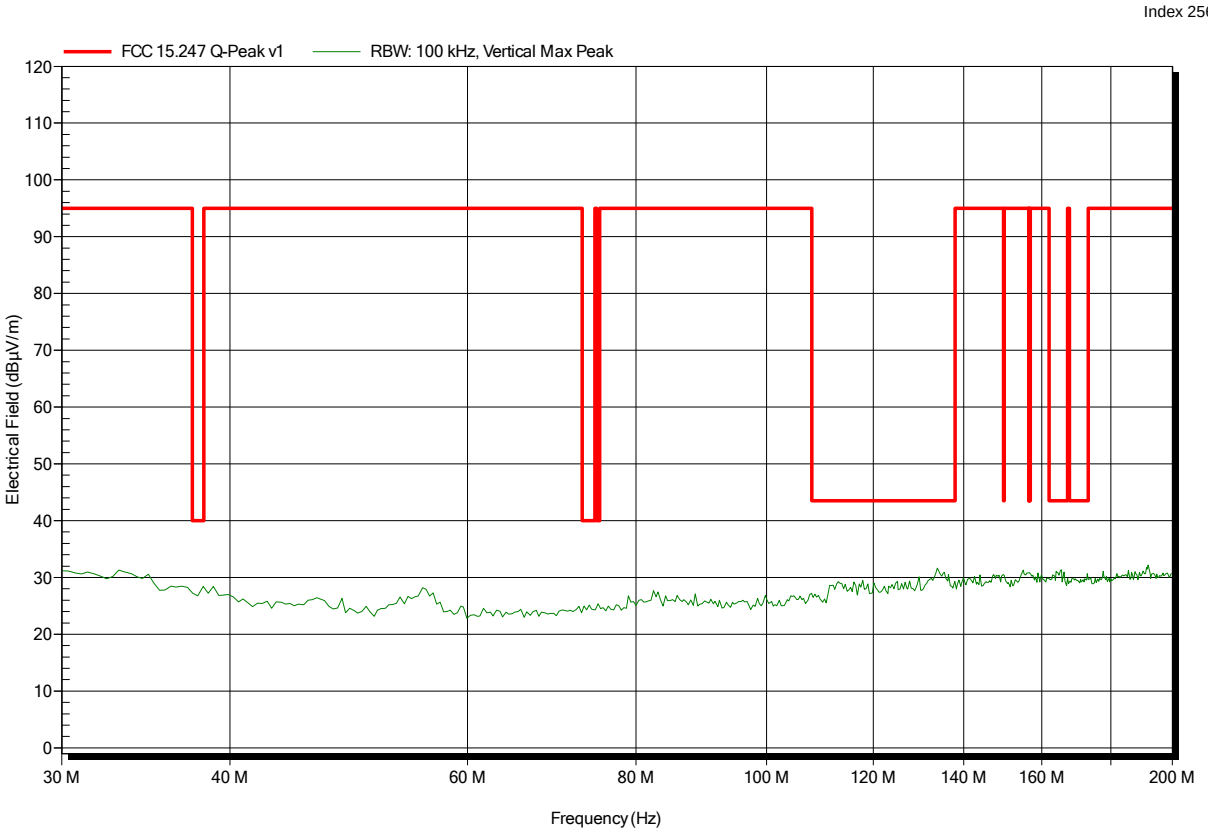
Test results – Antenna "Quarter-Wave" A2									
Channel	Frequency [MHz]	Mode	Emission [MHz]	Level [dbµV/m]	Det.	Pol.	Limit [dbµV/m]	Limit dist. [m]*	Margin [dB]
F_{LOW}	2405	IEEE 802.15.4	2339	41.09	pk	ver	74.00	3	-32.91
F_{LOW}	2405	IEEE 802.15.4	2339	28.94	RMS	ver	54.00	3	-25.06
F_{LOW}	2405	IEEE 802.15.4	4808	43.48	pk	ver	74.00	3	-30.52
F_{LOW}	2405	IEEE 802.15.4	4808	52.56	pk	hor	74.00	3	-21.44
F_{MID}	2450	IEEE 802.15.4	4896	42.39	pk	ver	74.00	3	-31.61
F_{MID}	2450	IEEE 802.15.4	4896	49.62	pk	hor	74.00	3	-24.38
F_{HIGH}	2480	IEEE 802.15.4	2484	47.26	pk	ver	74.00	3	-26.74
F_{HIGH}	2480	IEEE 802.15.4	2484	39.53	RMS	ver	54.00	3	-14.47
F_{HIGH}	2480	IEEE 802.15.4	2484	58.57	pk	hor	74.00	3	-15.43
F_{HIGH}	2480	IEEE 802.15.4	2484	51.80	RMS	hor	54.00	3	-02.20
F_{HIGH}	2480	IEEE 802.15.4	2494	44.36	pk	ver	74.00	3	-29.64
F_{HIGH}	2480	IEEE 802.15.4	2494	32.73	RMS	ver	54.00	3	-21.27
F_{HIGH}	2480	IEEE 802.15.4	2496	43.89	pk	ver	74.00	3	-30.11
F_{HIGH}	2480	IEEE 802.15.4	2496	34.11	RMS	ver	54.00	3	-19.89
F_{HIGH}	2480	IEEE 802.15.4	2499	45.41	pk	ver	74.00	3	-28.59
F_{HIGH}	2480	IEEE 802.15.4	2499	32.52	RMS	ver	54.00	3	-21.48
F_{HIGH}	2480	IEEE 802.15.4	3856	44.32	pk	ver	74.00	3	-29.68
F_{HIGH}	2480	IEEE 802.15.4	3982	47.34	pk	hor	74.00	3	-26.66
F_{HIGH}	2480	IEEE 802.15.4	3985	44.45	pk	ver	74.00	3	-29.55
F_{HIGH}	2480	IEEE 802.15.4	5000	42.86	pk	ver	74.00	3	-31.14
Comments: * Physical distance between EUT and measurement antenna. After radiated spurious check between 250 / 2000 kbps no differences in the results, measurement were performed with 250kbps.									

ANNEX A Transmitter radiated spurious emissions

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1



Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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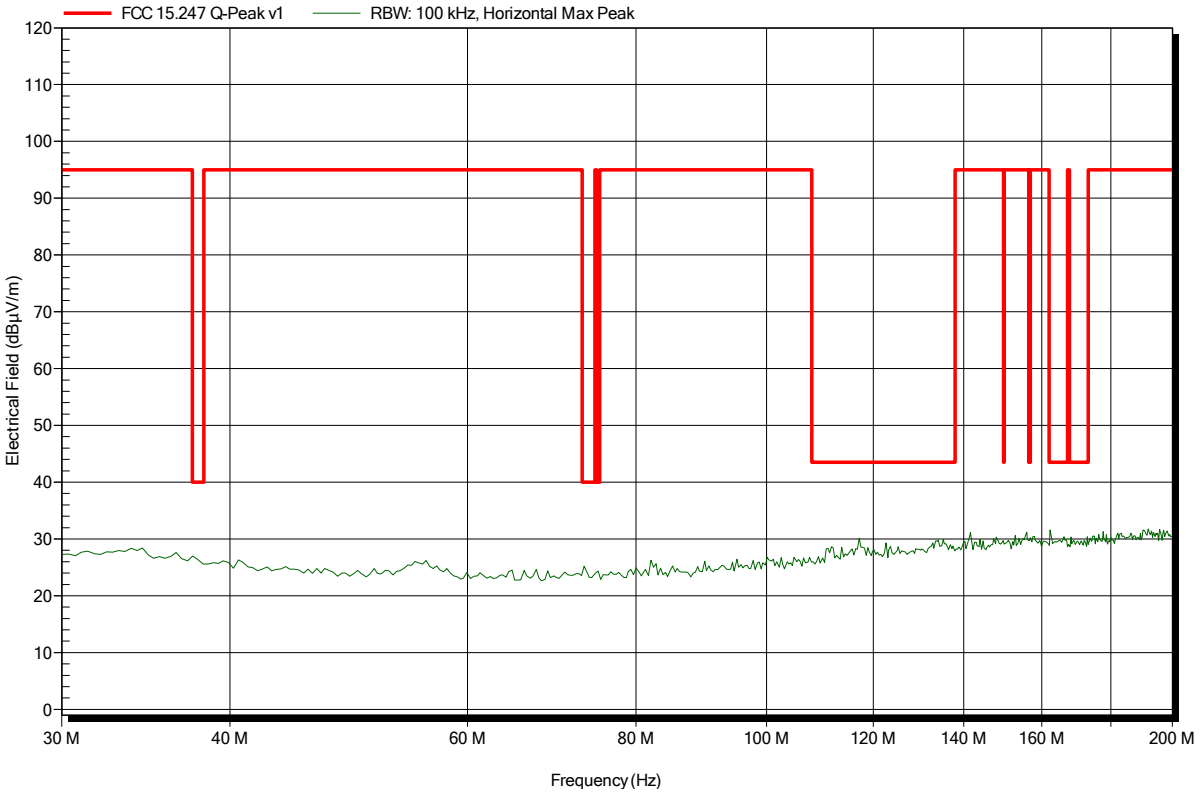

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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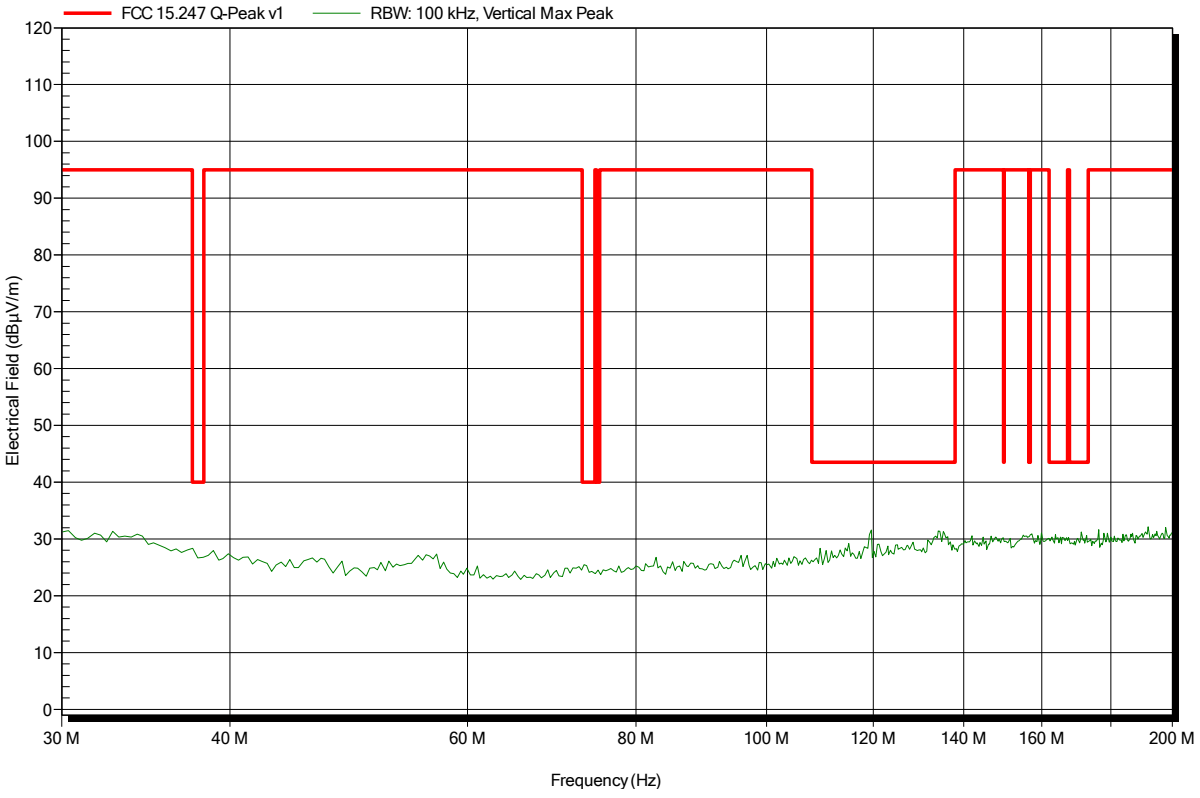

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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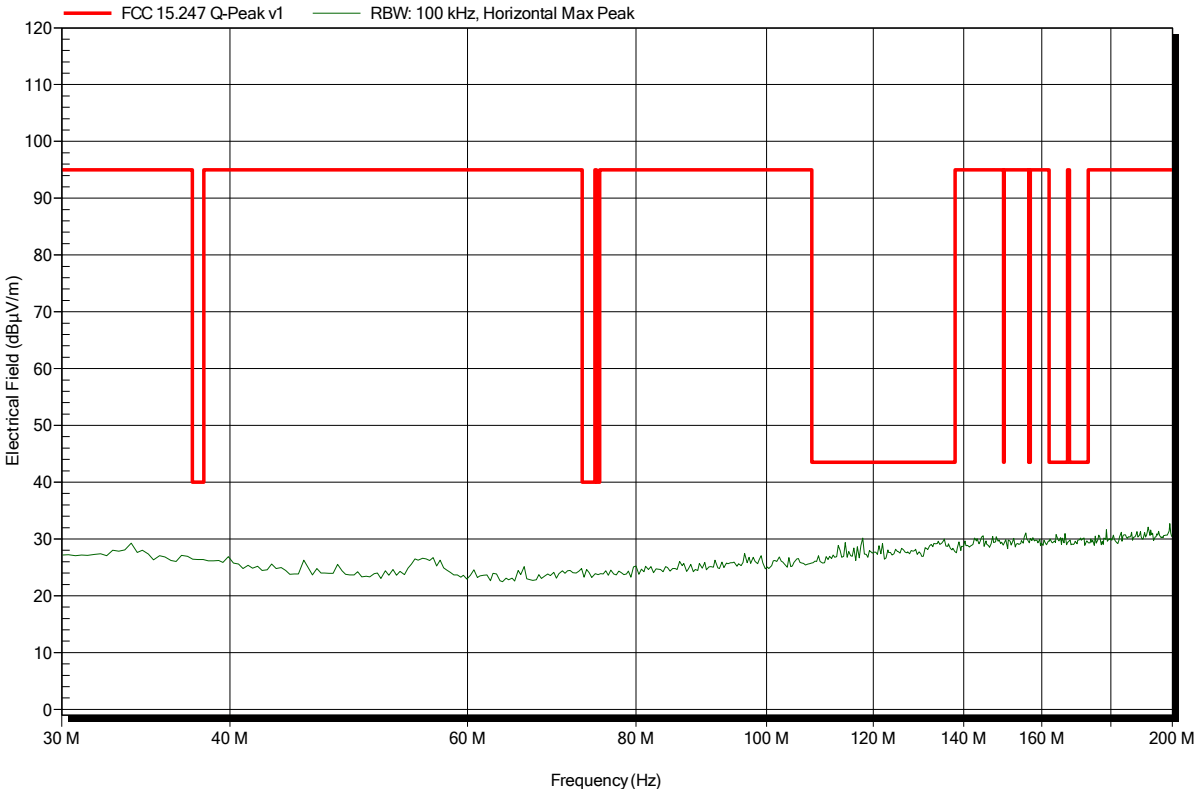

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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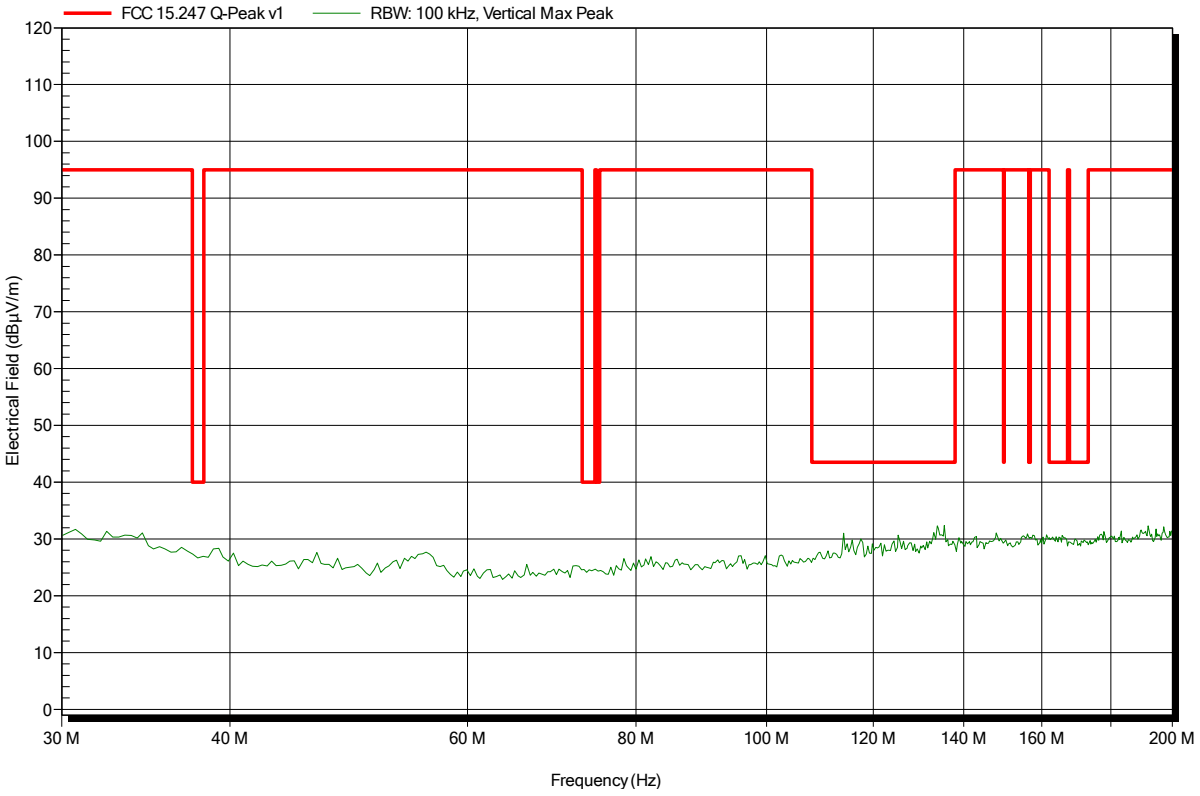

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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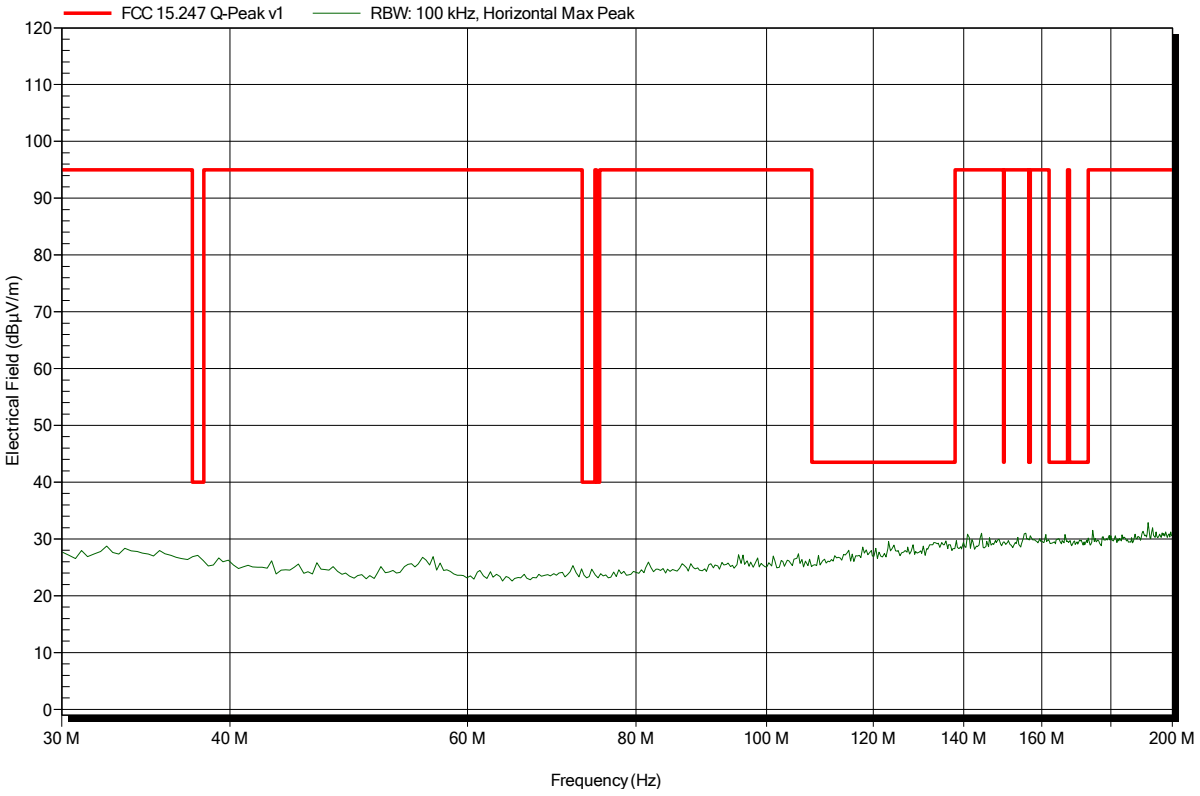

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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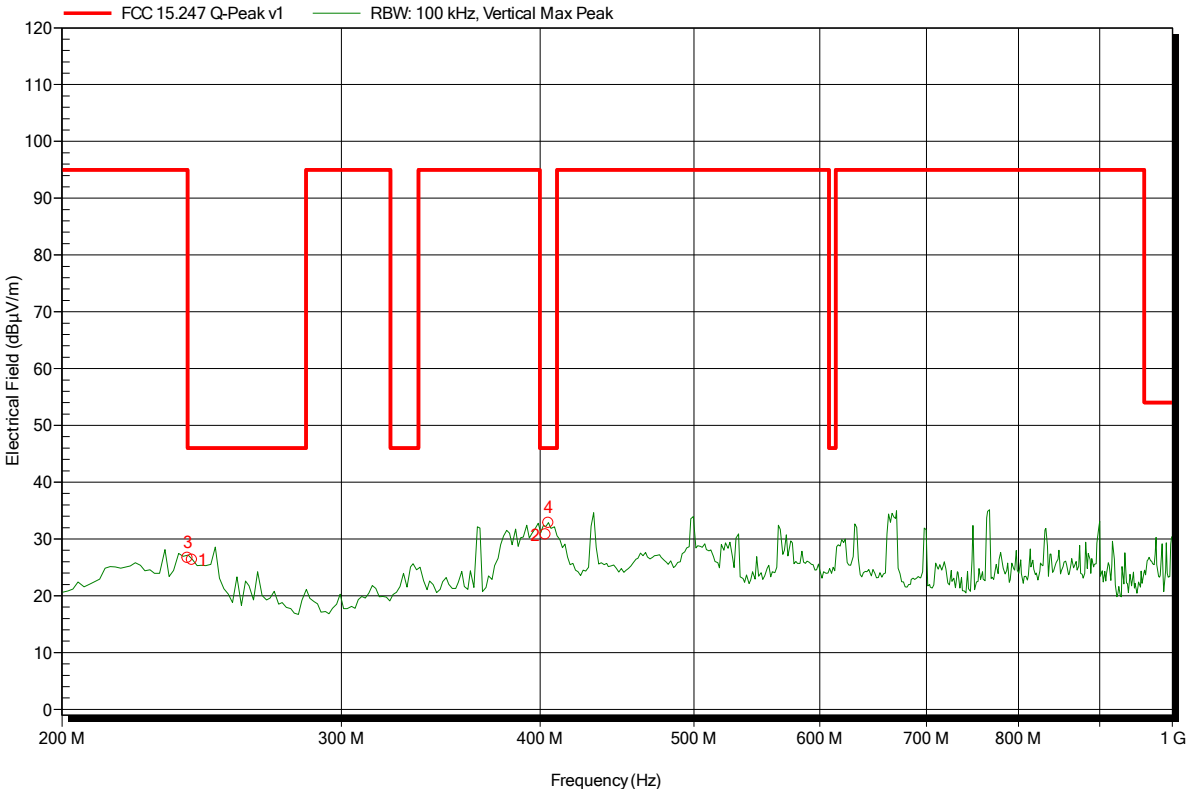

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
240 MHz	26.66 dBµV/m	46 dBµV/m	-19.34 dB	Pass
241.6 MHz	26.33 dBµV/m	46 dBµV/m	-19.67 dB	Pass
403.2 MHz	30.8 dBµV/m	46 dBµV/m	-15.2 dB	Pass
404.8 MHz	32.85 dBµV/m	46 dBµV/m	-13.15 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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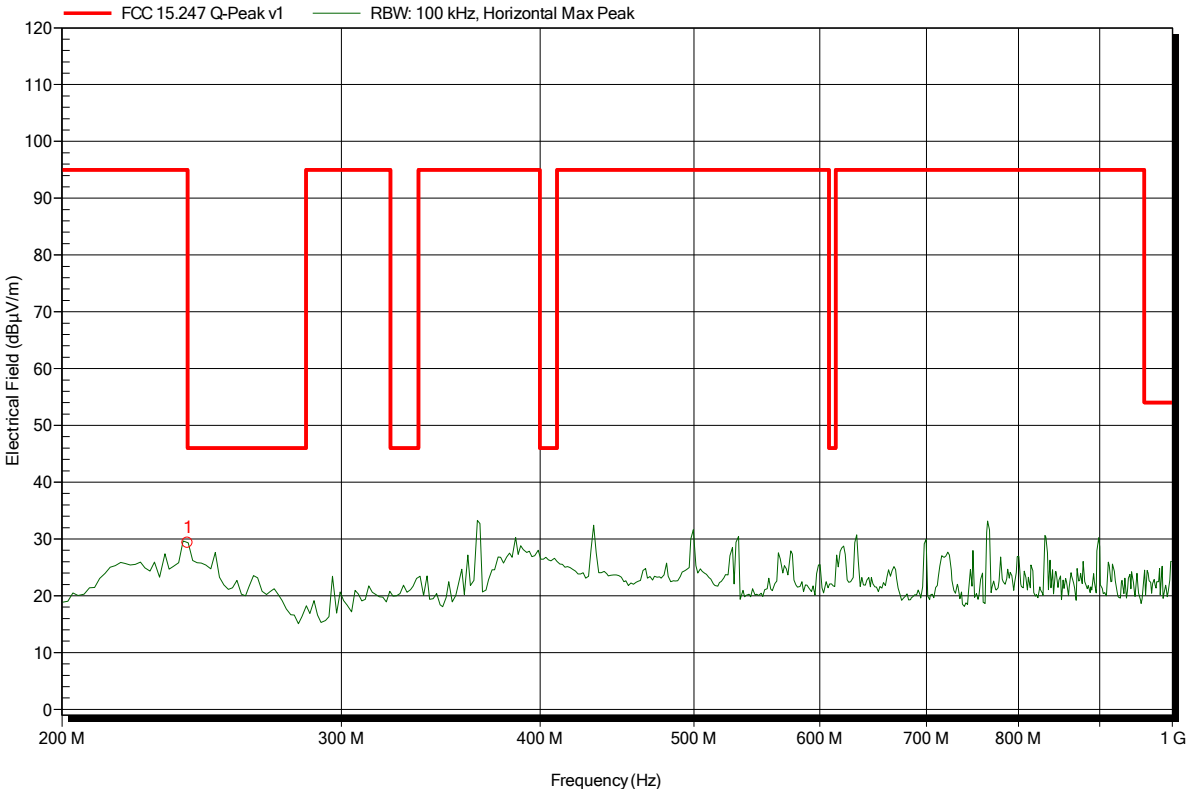

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
240 MHz	29.3 dBµV/m	46 dBµV/m	-16.7 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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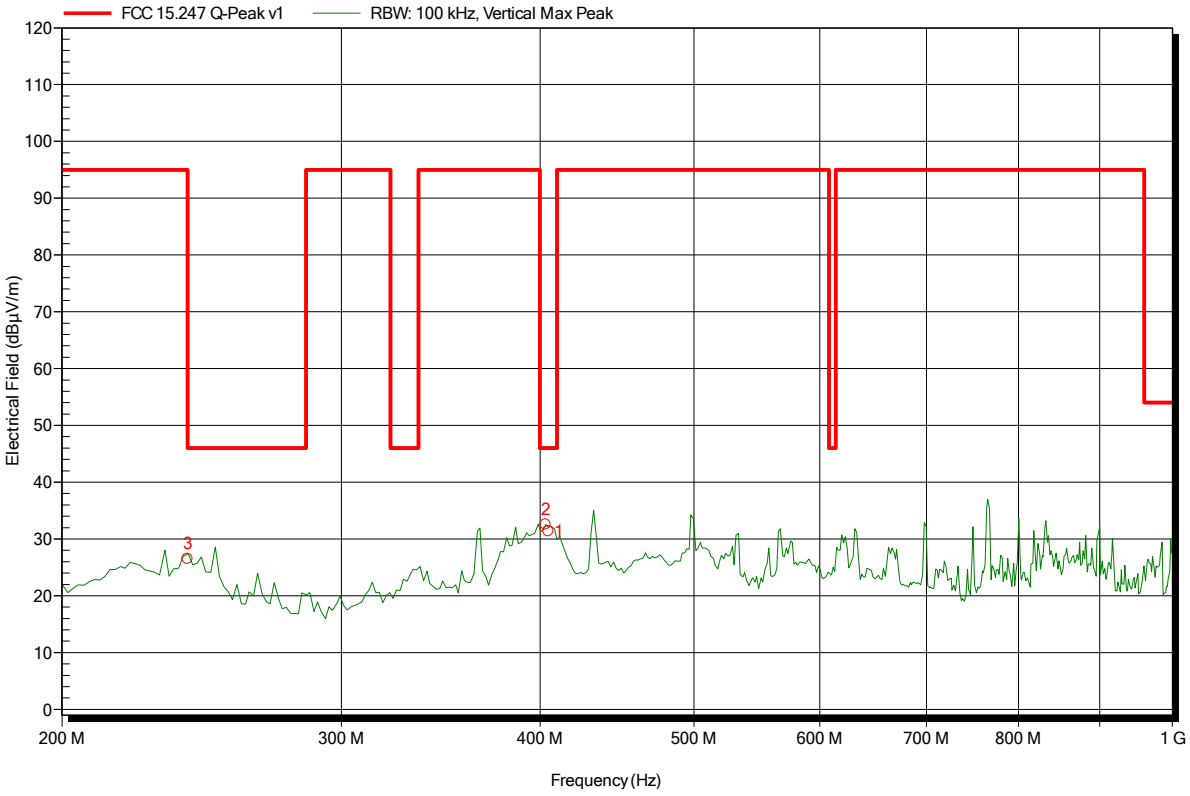

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
240 MHz	26.51 dBµV/m	46 dBµV/m	-19.49 dB	Pass
403.2 MHz	32.56 dBµV/m	46 dBµV/m	-13.44 dB	Pass
404.8 MHz	31.37 dBµV/m	46 dBµV/m	-14.63 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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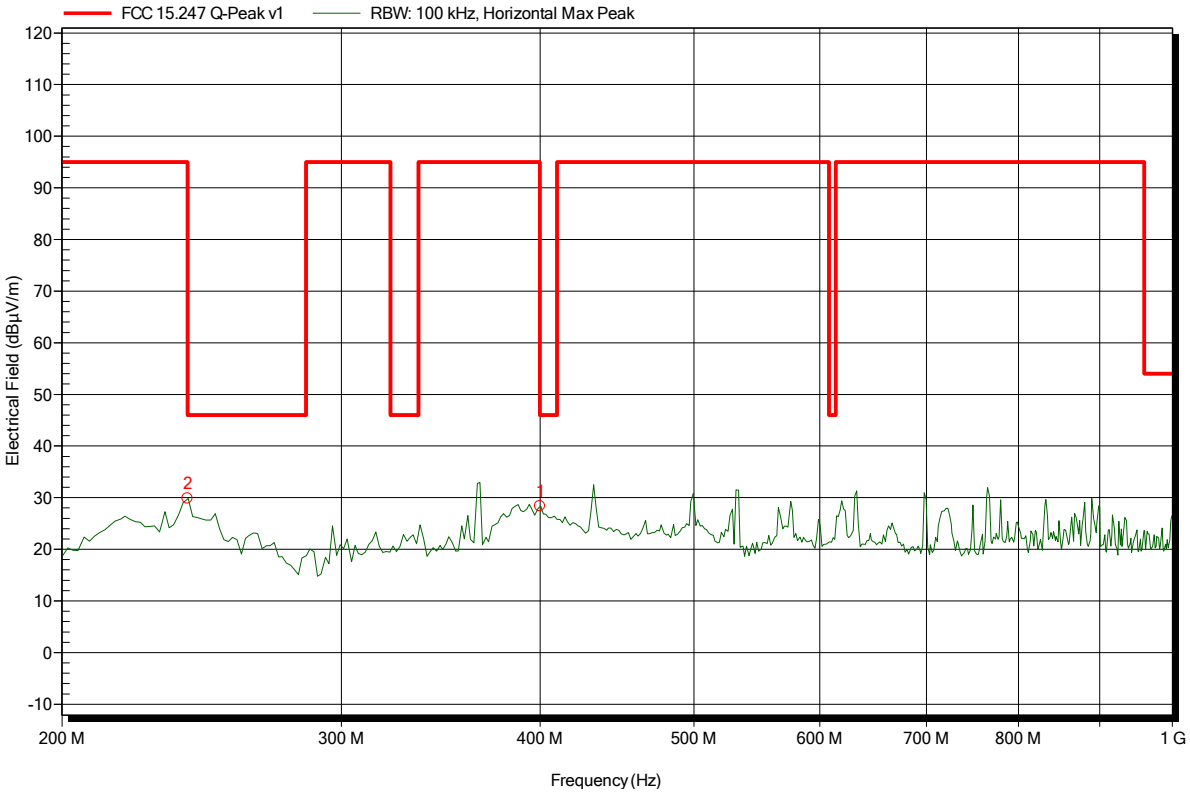

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
240 MHz	29.83 dBµV/m	46 dBµV/m	-16.17 dB	Pass
400 MHz	28.34 dBµV/m	46 dBµV/m	-17.66 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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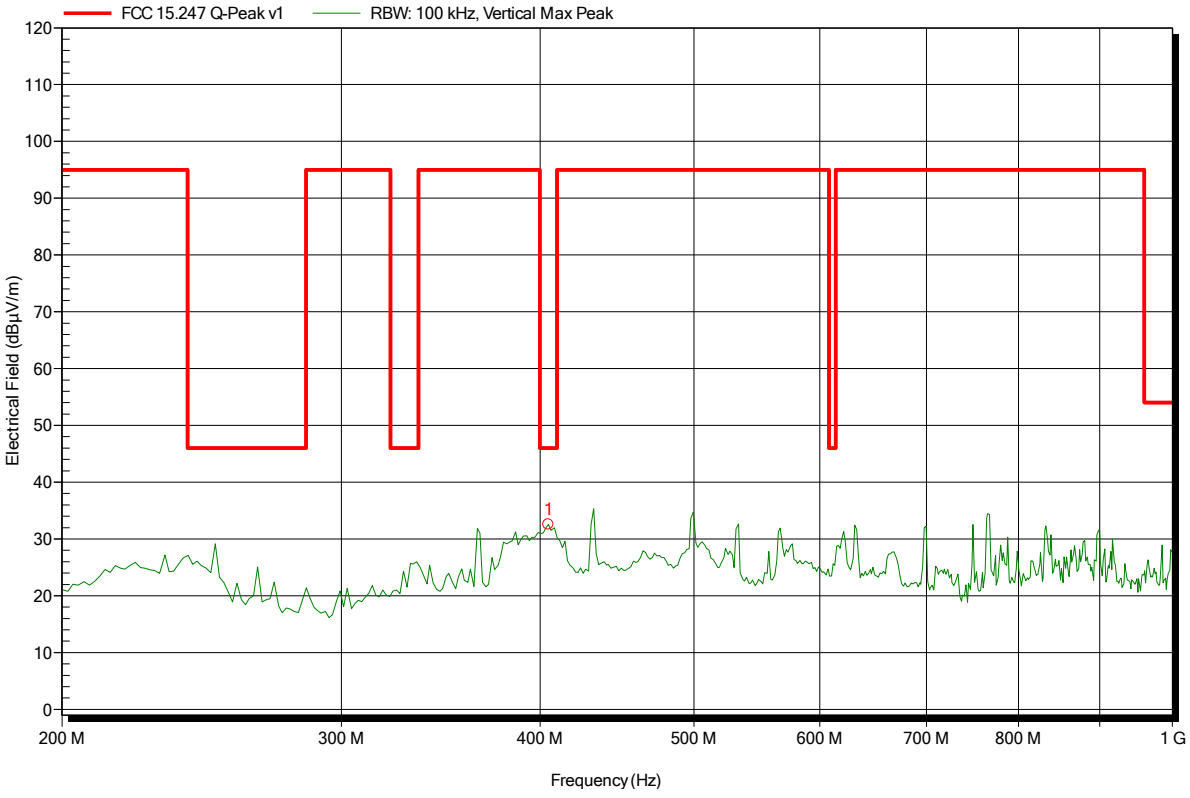

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
404.8 MHz	32.52 dBµV/m	46 dBµV/m	-13.48 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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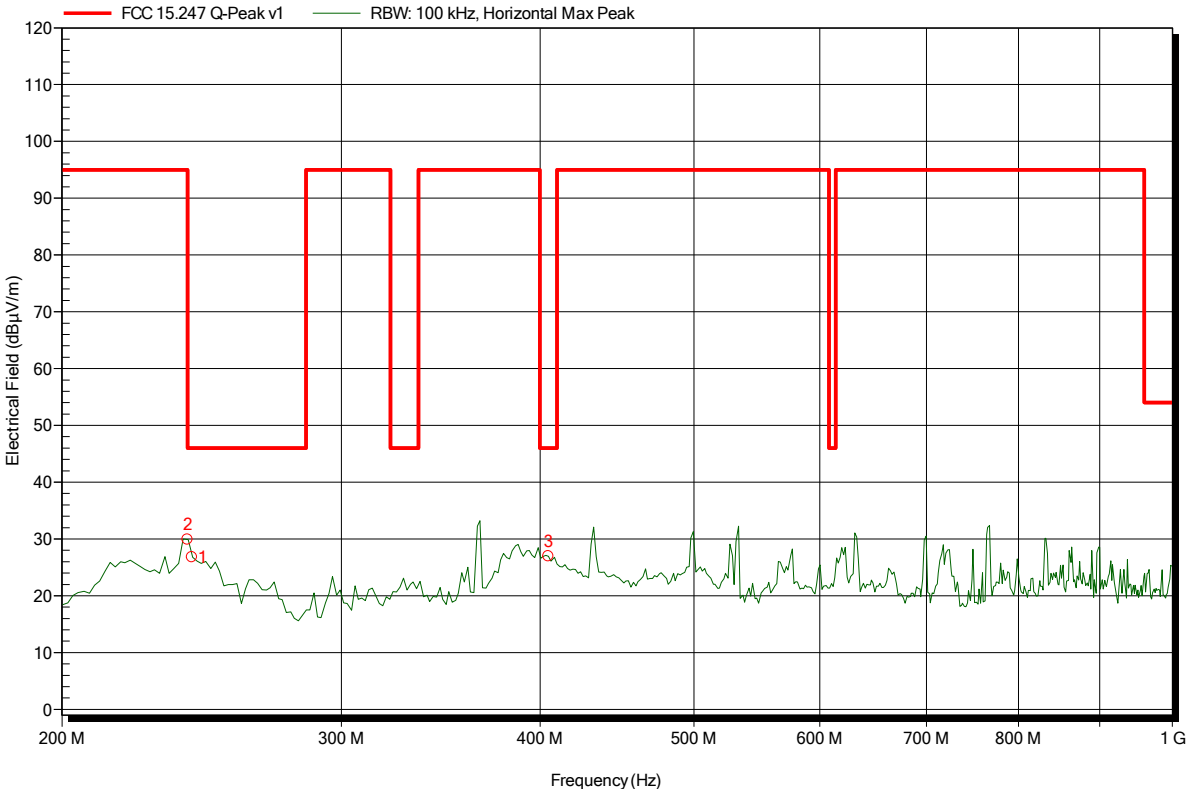

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
240 MHz	29.87 dBµV/m	46 dBµV/m	-16.13 dB	Pass
241.6 MHz	26.79 dBµV/m	46 dBµV/m	-19.21 dB	Pass
404.8 MHz	26.93 dBµV/m	46 dBµV/m	-19.07 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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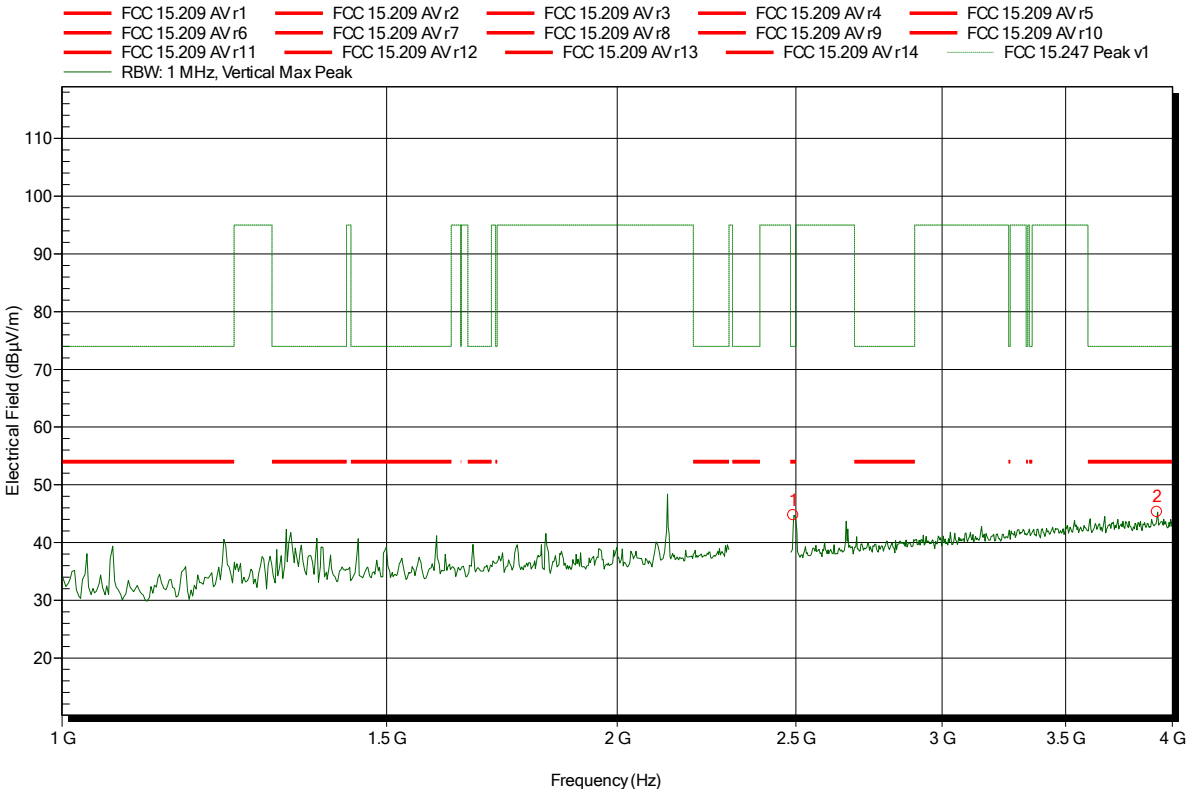

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.493 GHz	44.72 dBµV/m	74 dBµV/m	-29.28 dB	Pass
3.924 GHz	45.27 dBµV/m	74 dBµV/m	-28.73 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1; lower bandedge

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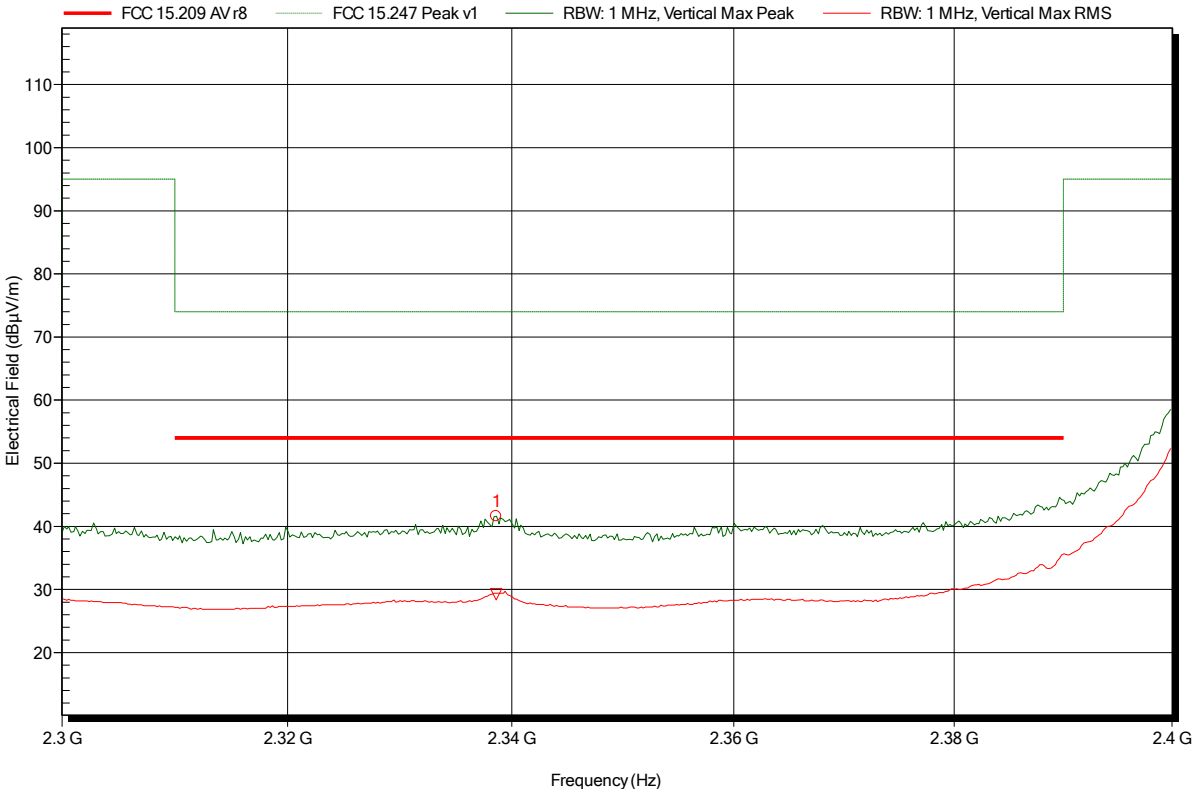

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.339 GHz	41.61 dBµV/m	74 dBµV/m	-32.39 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.339 GHz	29.27 dBµV/m	54 dBµV/m	-24.73 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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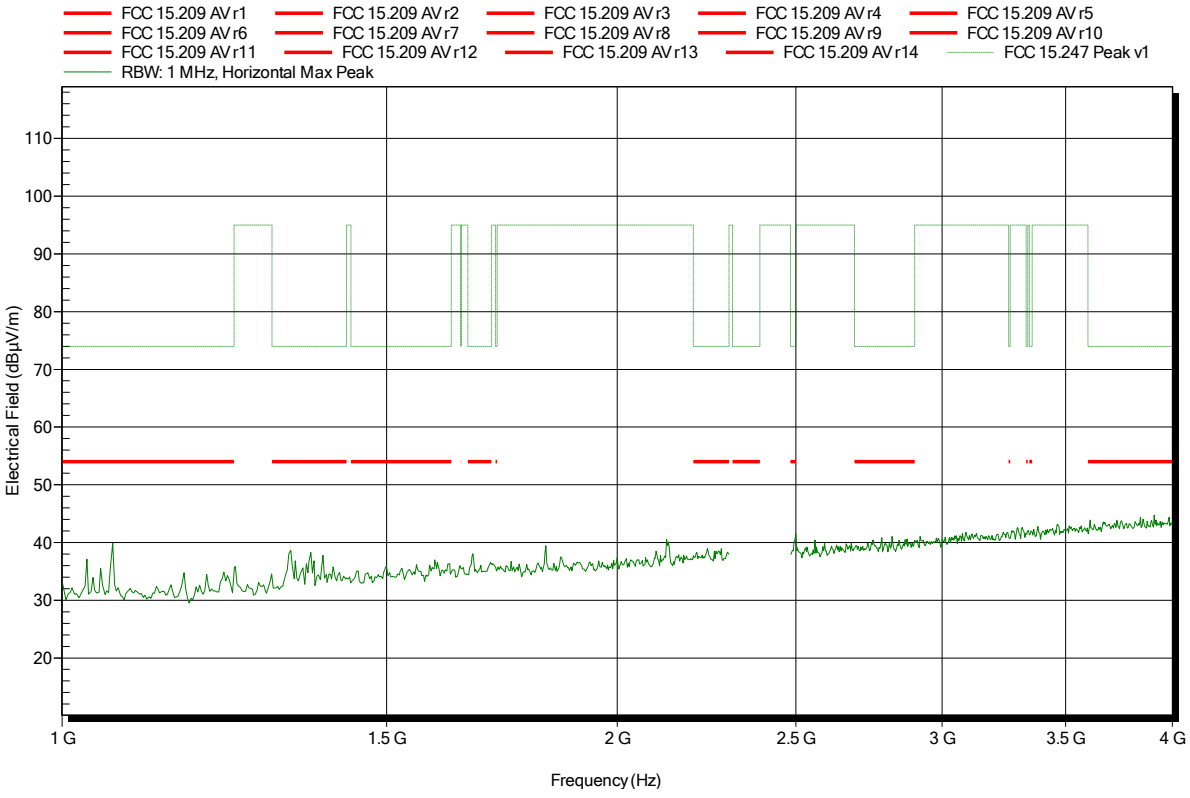

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1; lower bandedge

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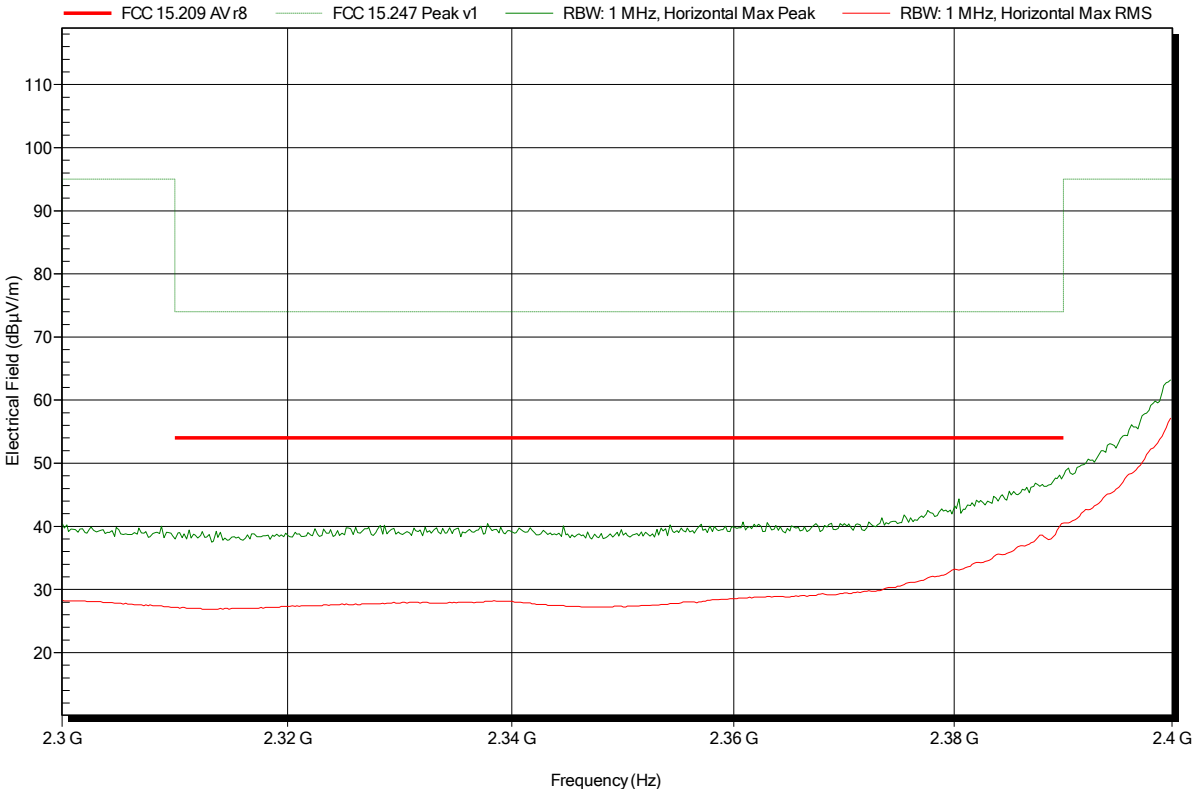

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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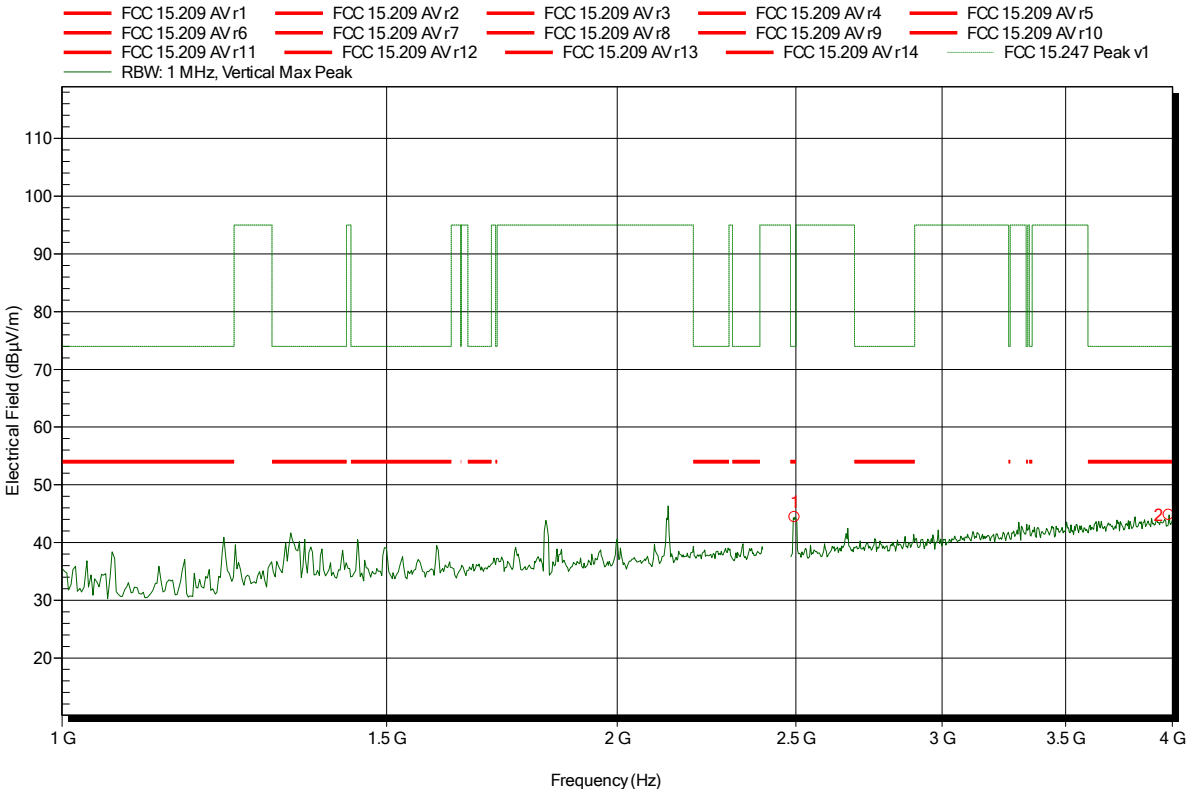

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.496 GHz	44.4 dBµV/m	74 dBµV/m	-29.6 dB	Pass
3.982 GHz	44.8 dBµV/m	74 dBµV/m	-29.2 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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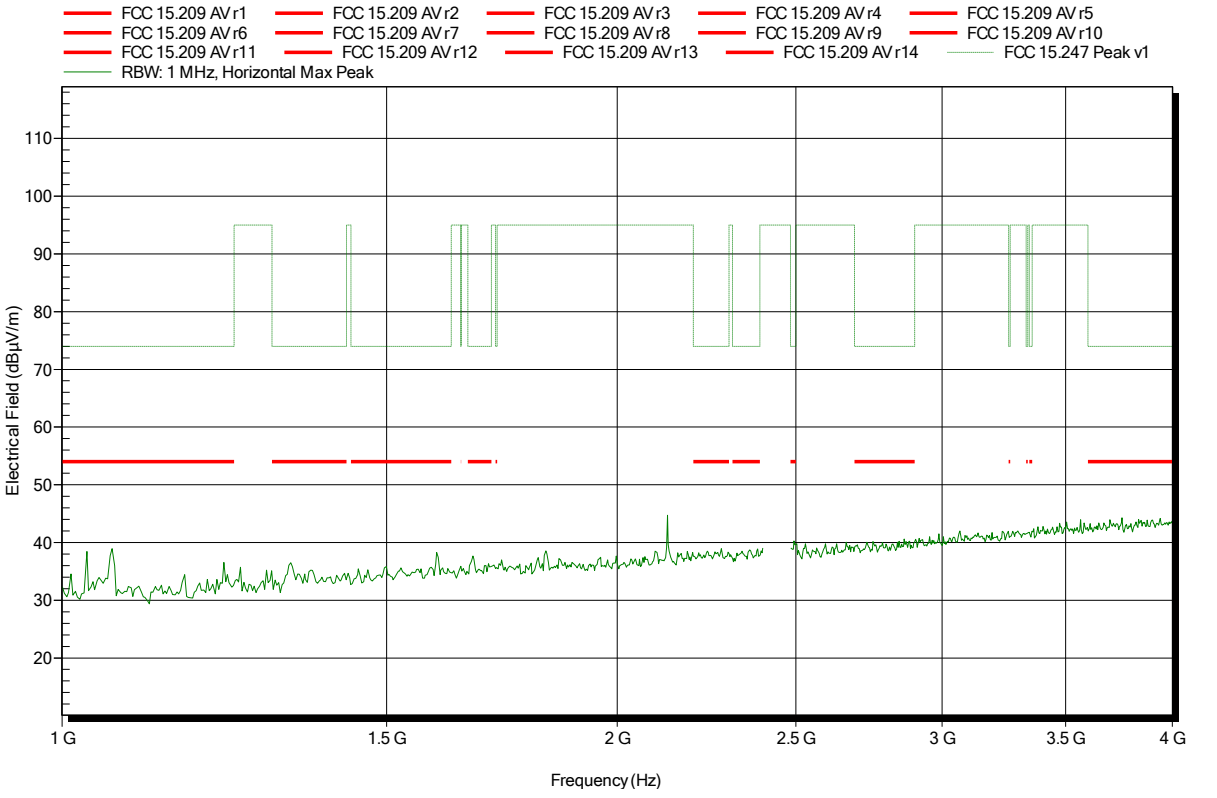

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Stub" ant.: A1 (-9)
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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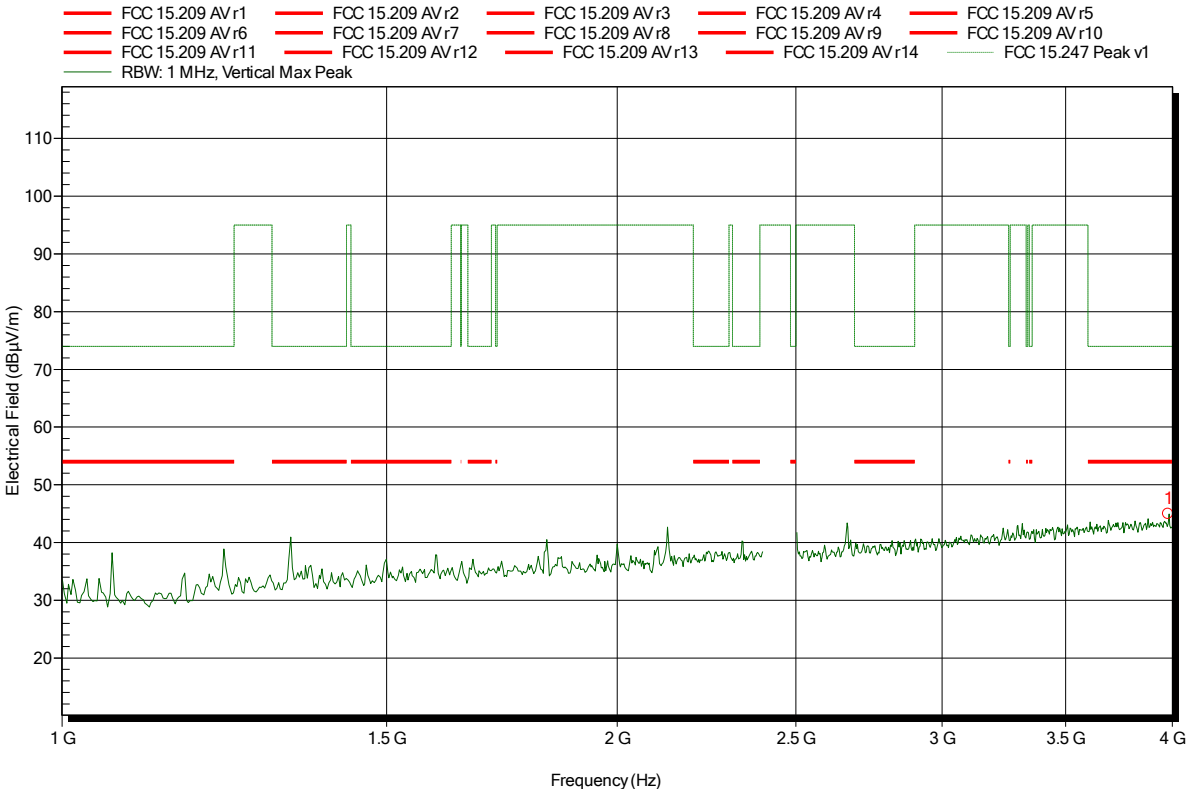

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.979 GHz	44.94 dBµV/m	74 dBµV/m	-29.06 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Stub" ant.: A1 (-9)
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1; higher bandedge

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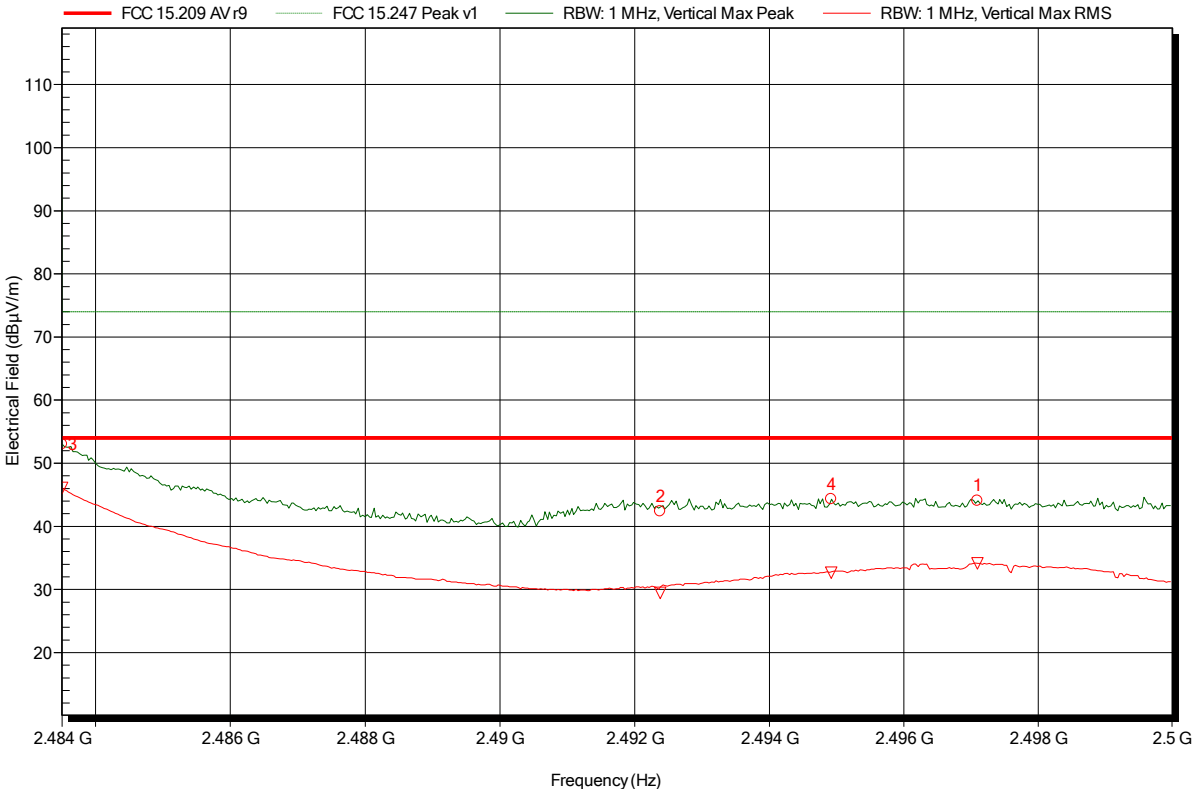

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.484 GHz	52.98 dBµV/m	74 dBµV/m	-21.02 dB	Pass
2.492 GHz	42.39 dBµV/m	74 dBµV/m	-31.61 dB	Pass
2.495 GHz	44.28 dBµV/m	74 dBµV/m	-29.72 dB	Pass
2.497 GHz	44.04 dBµV/m	74 dBµV/m	-29.96 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.484 GHz	46.08 dBµV/m	54 dBµV/m	-7.92 dB	Pass
2.492 GHz	29.47 dBµV/m	54 dBµV/m	-24.53 dB	Pass
2.495 GHz	32.66 dBµV/m	54 dBµV/m	-21.34 dB	Pass
2.497 GHz	34.11 dBµV/m	54 dBµV/m	-19.89 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Stub" ant.: A1 (-9)
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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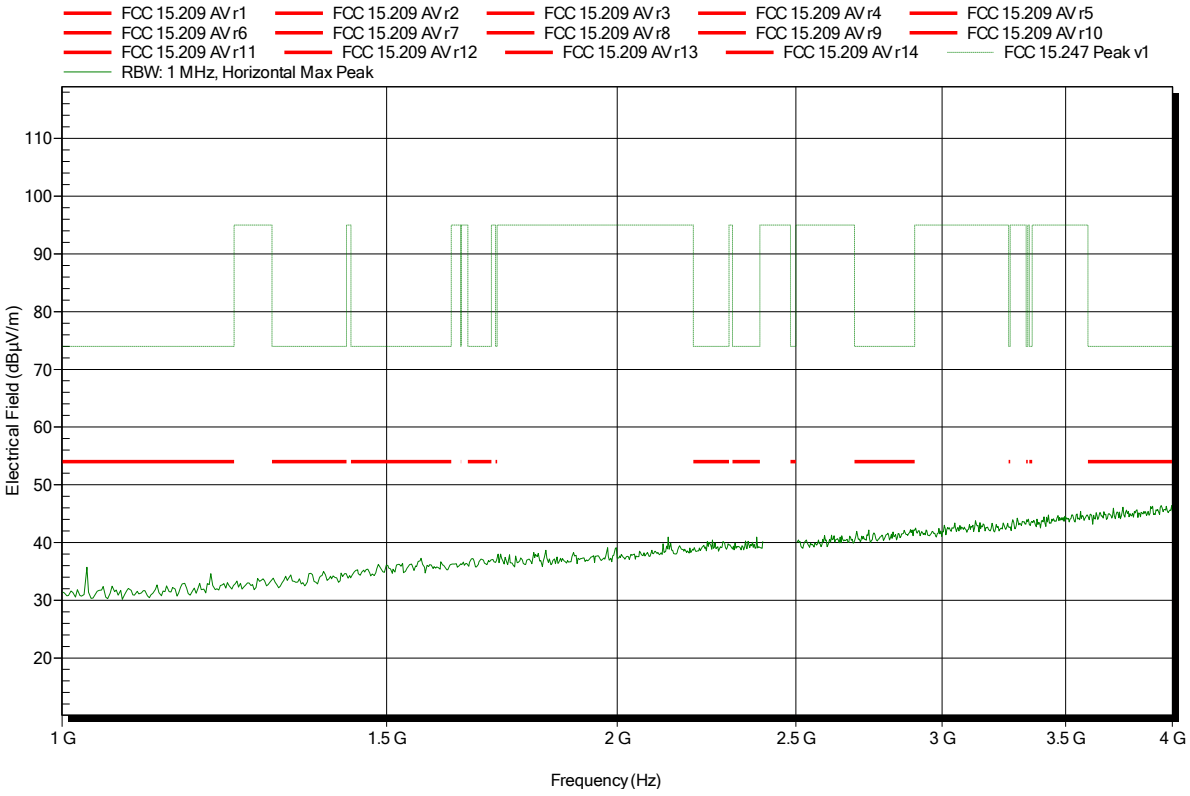

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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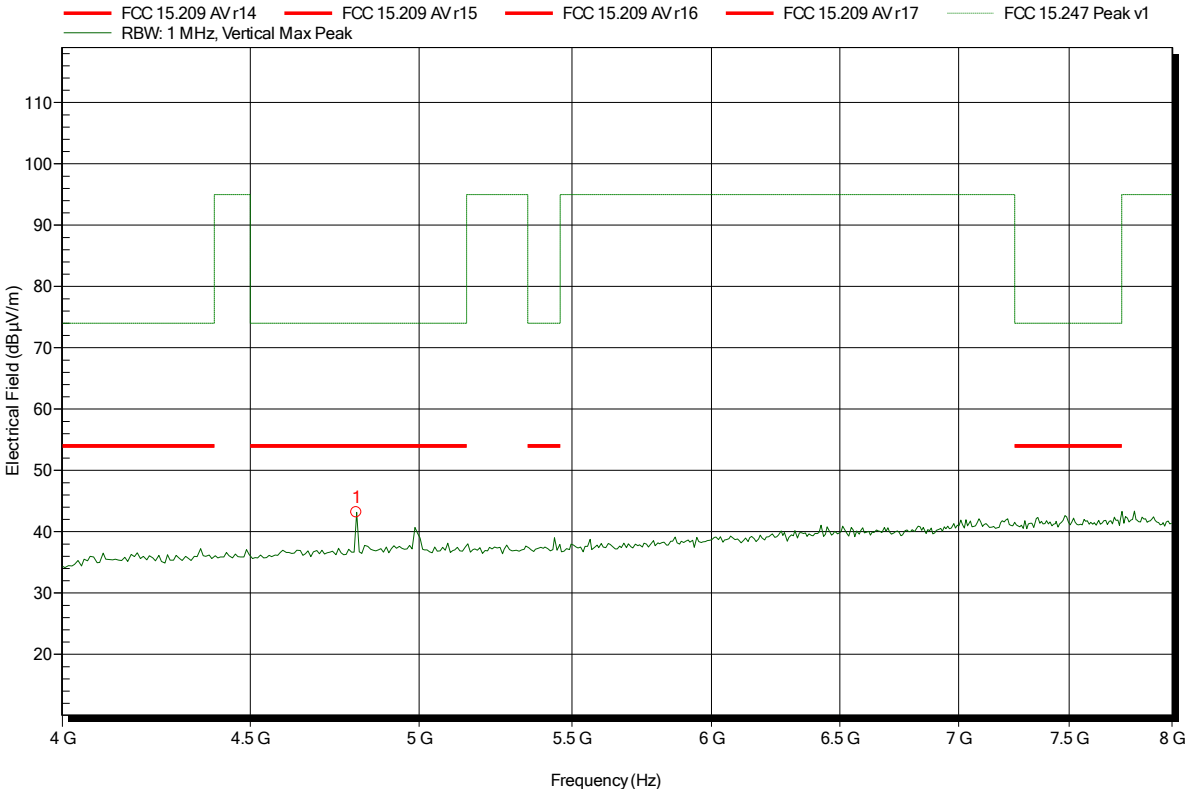

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.808 GHz	43.15 dBµV/m	74 dBµV/m	-30.85 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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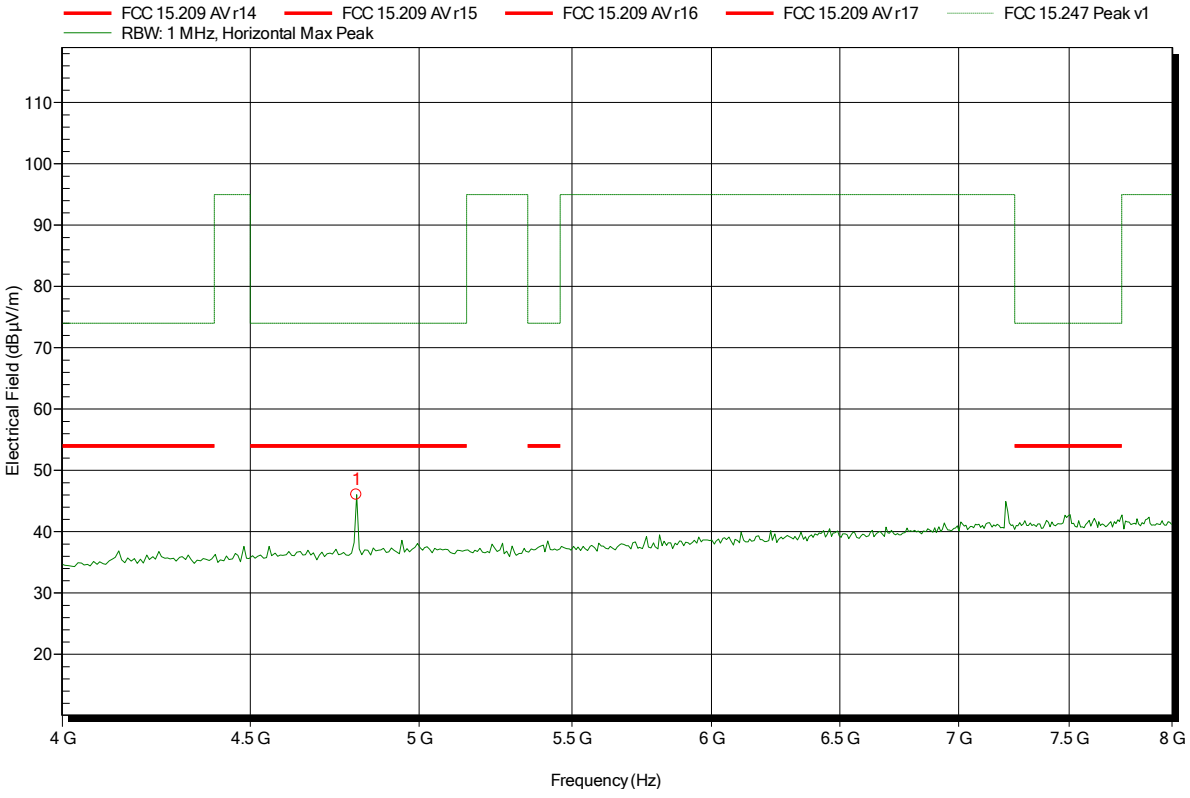

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.808 GHz	46.06 dBµV/m	74 dBµV/m	-27.94 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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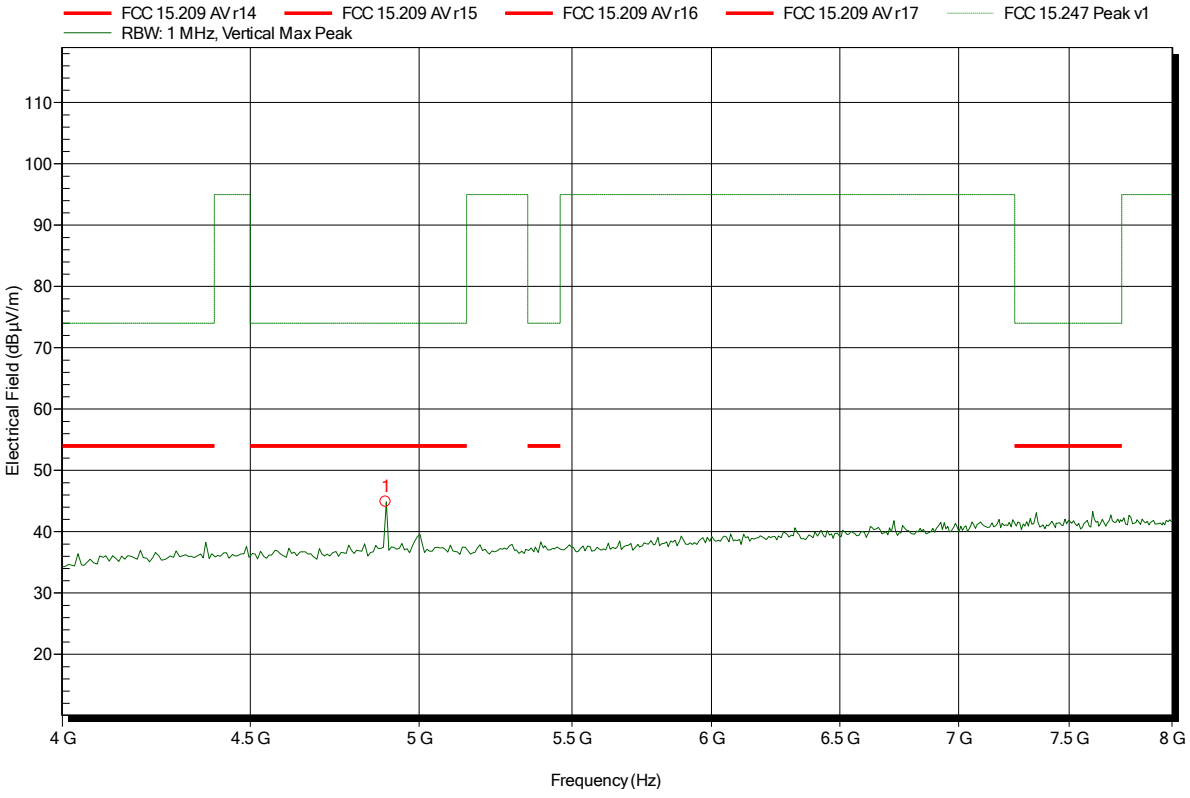

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.896 GHz	44.88 dBµV/m	74 dBµV/m	-29.12 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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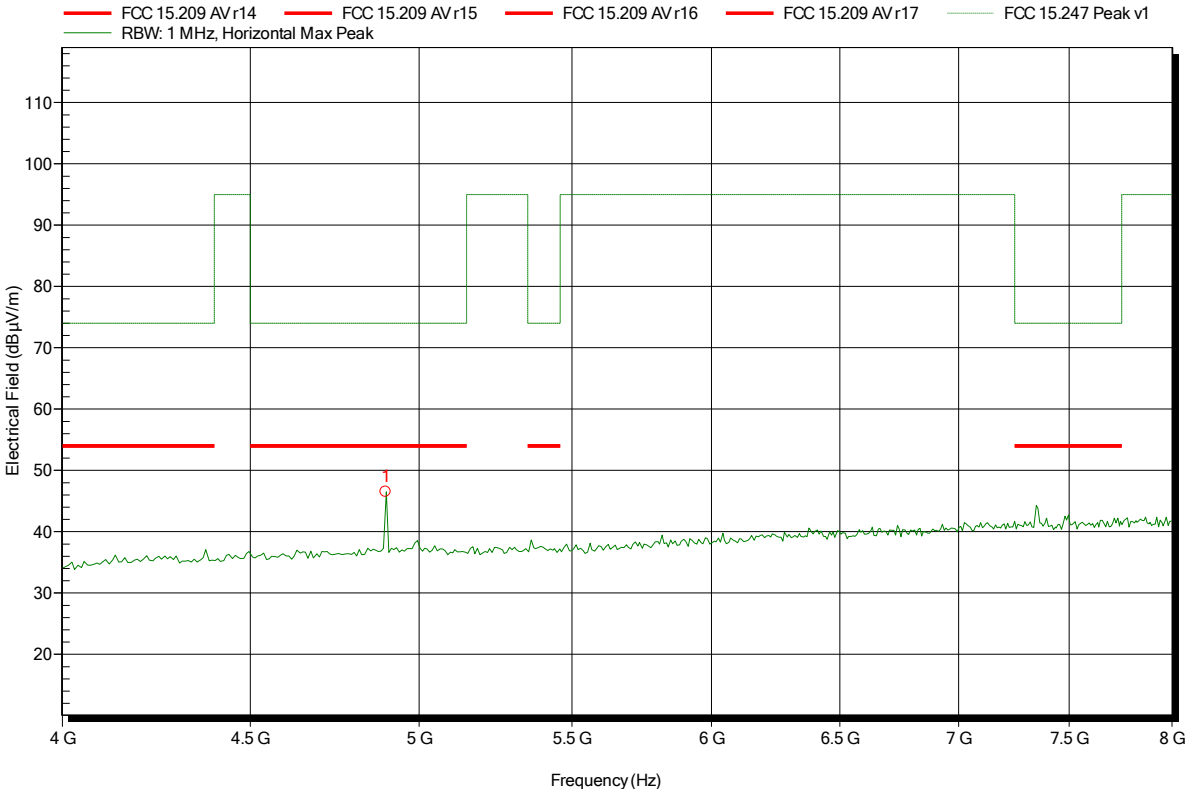

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.896 GHz	46.51 dBµV/m	74 dBµV/m	-27.49 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A1 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A1

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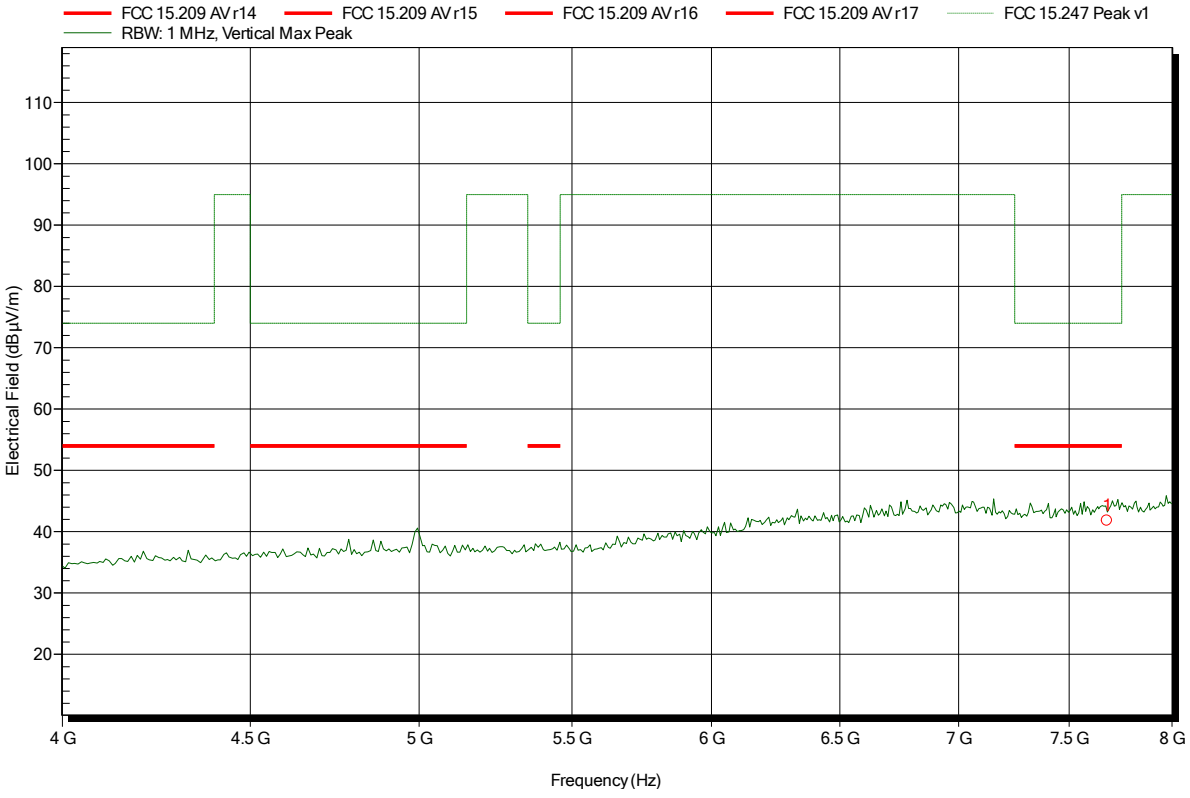

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.68 GHz	41.78 dBµV/m	74 dBµV/m	-32.22 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A1 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A1

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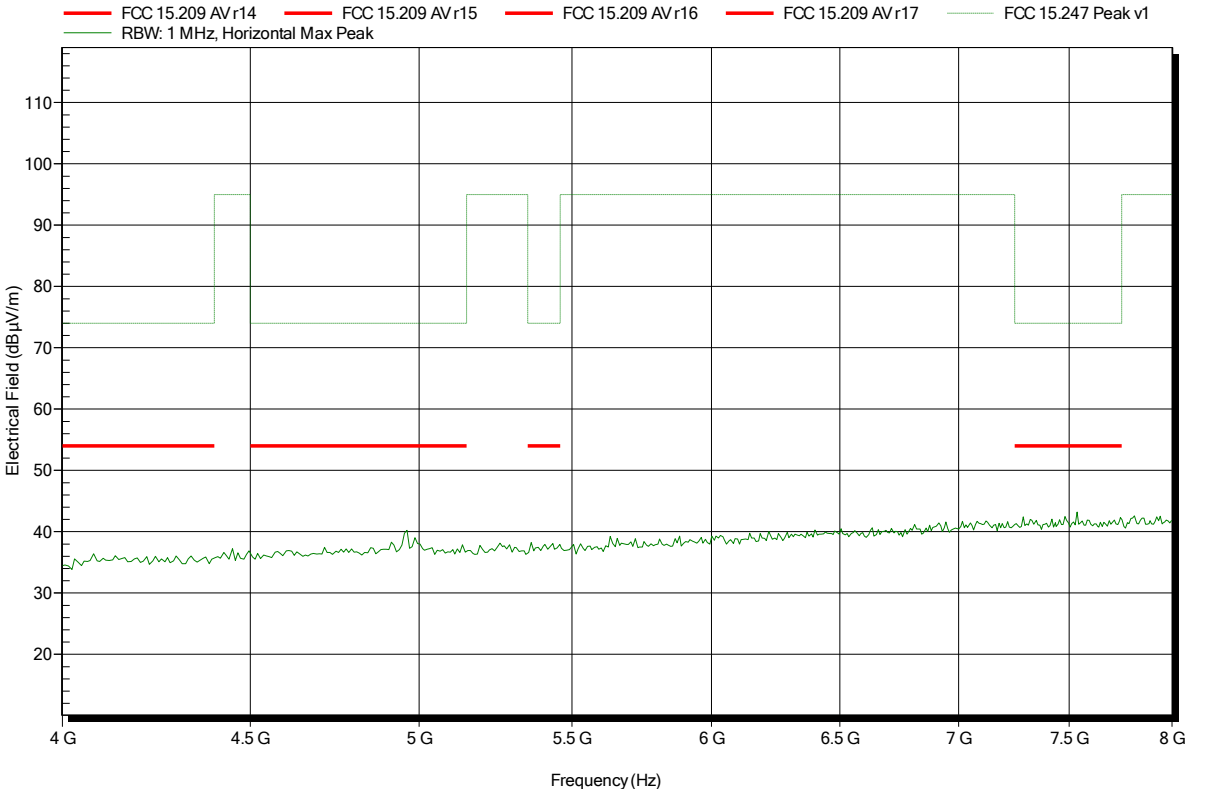

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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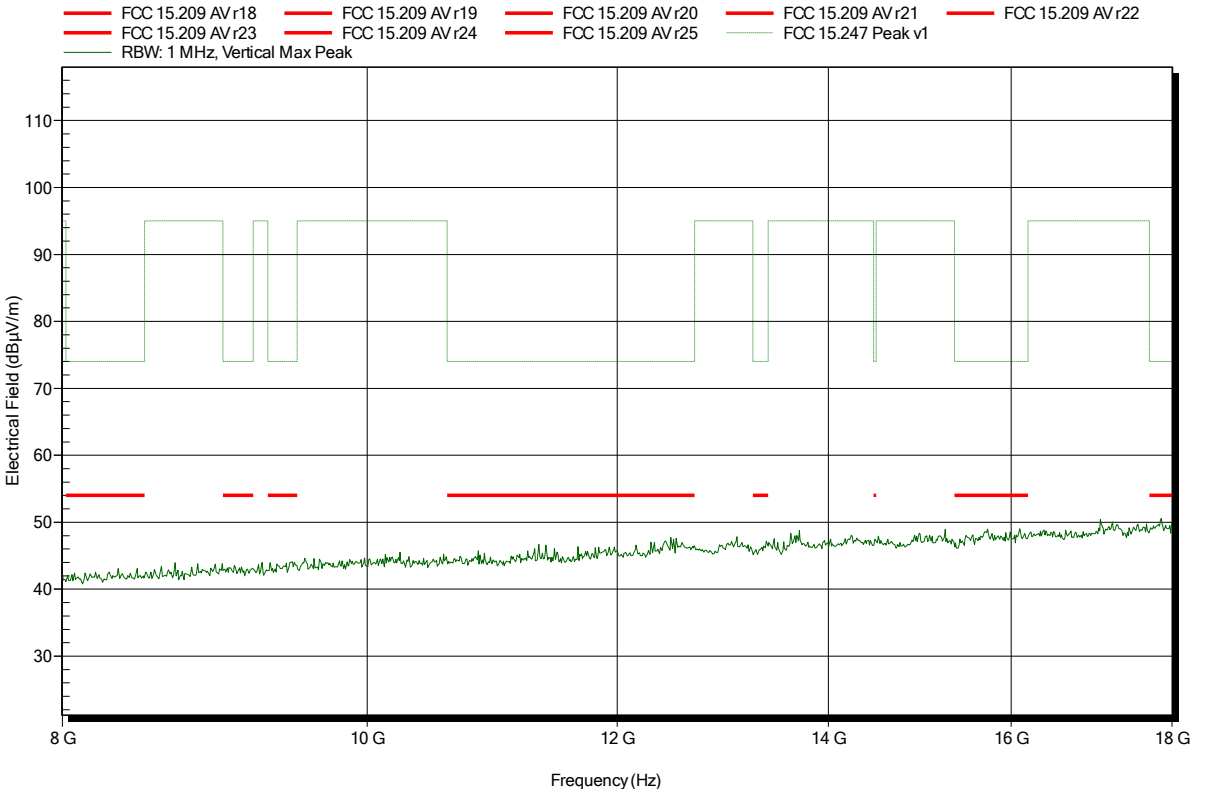

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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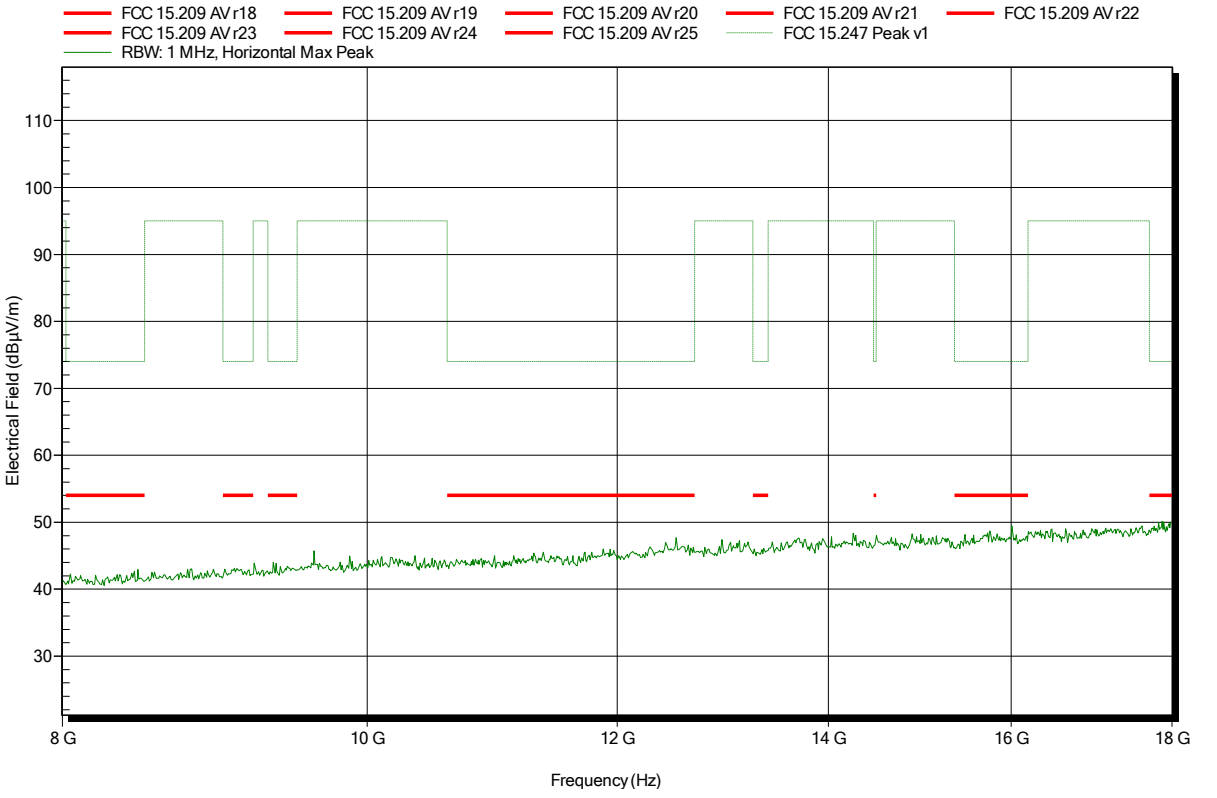

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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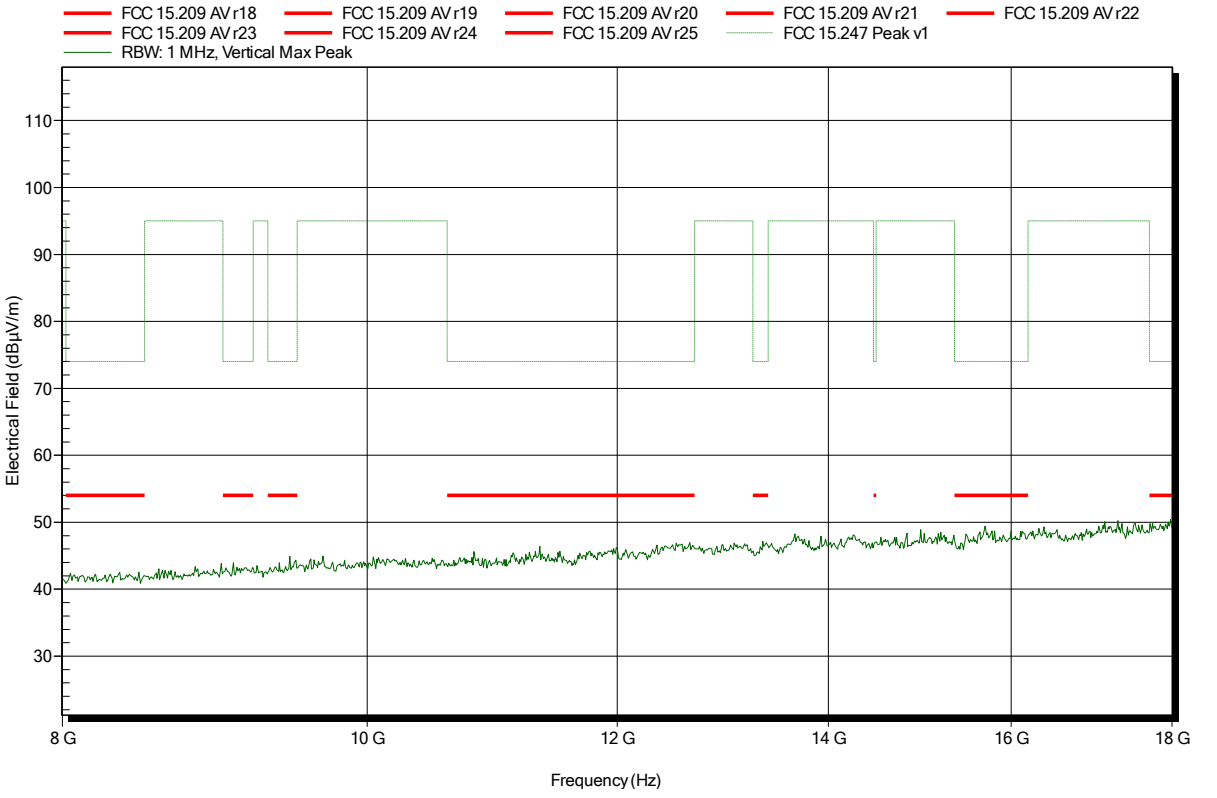

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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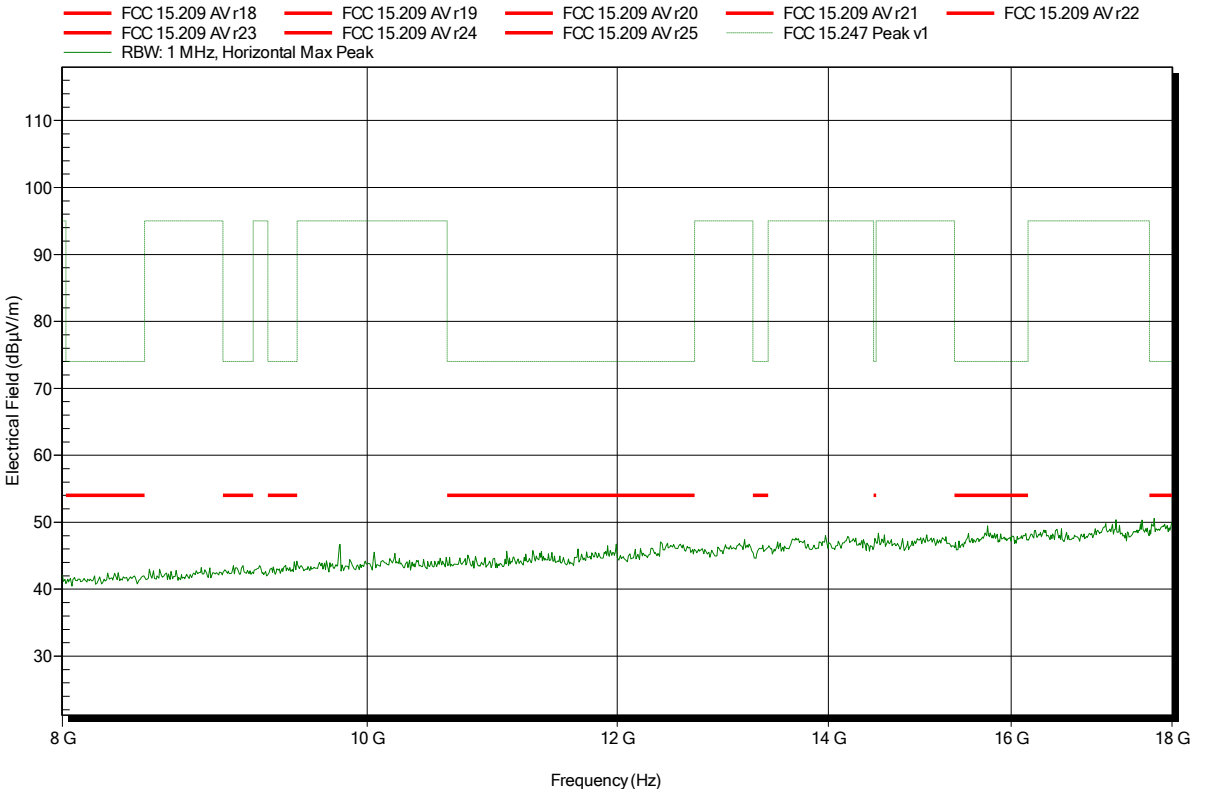

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A1 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A1

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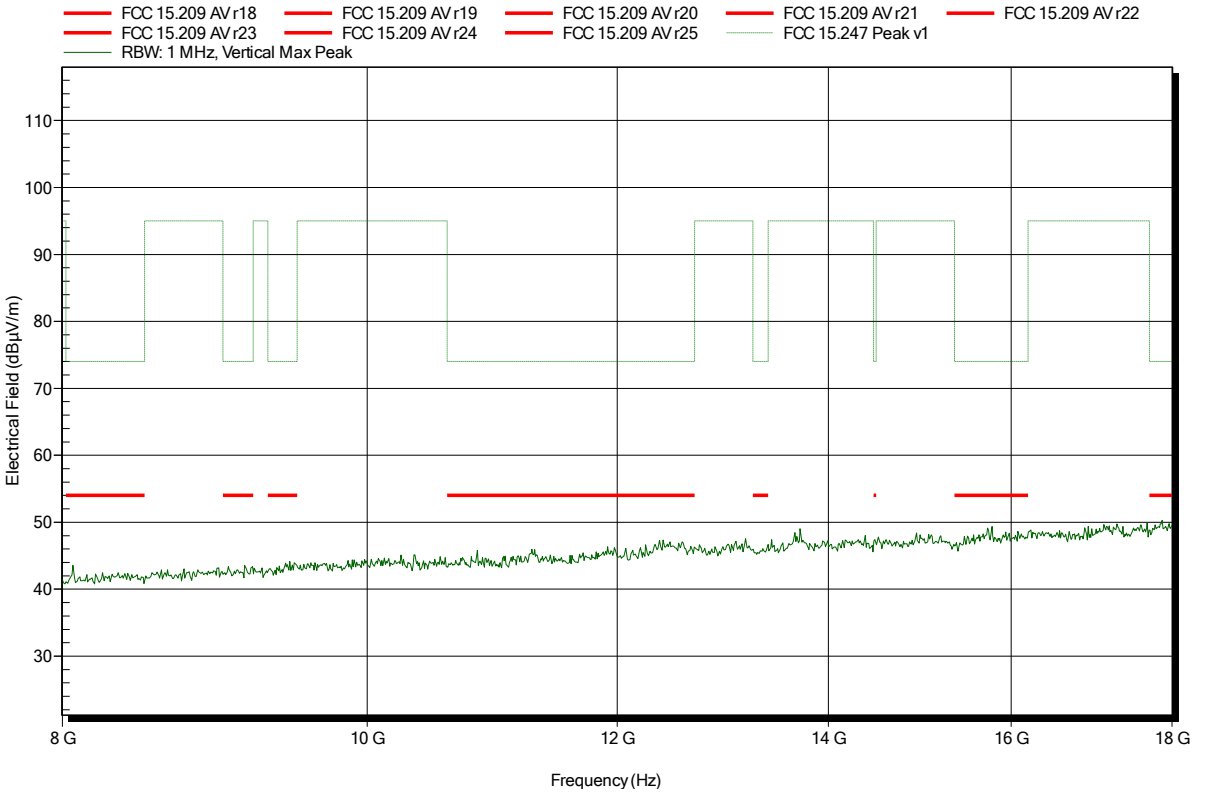

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
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Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A1 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A1

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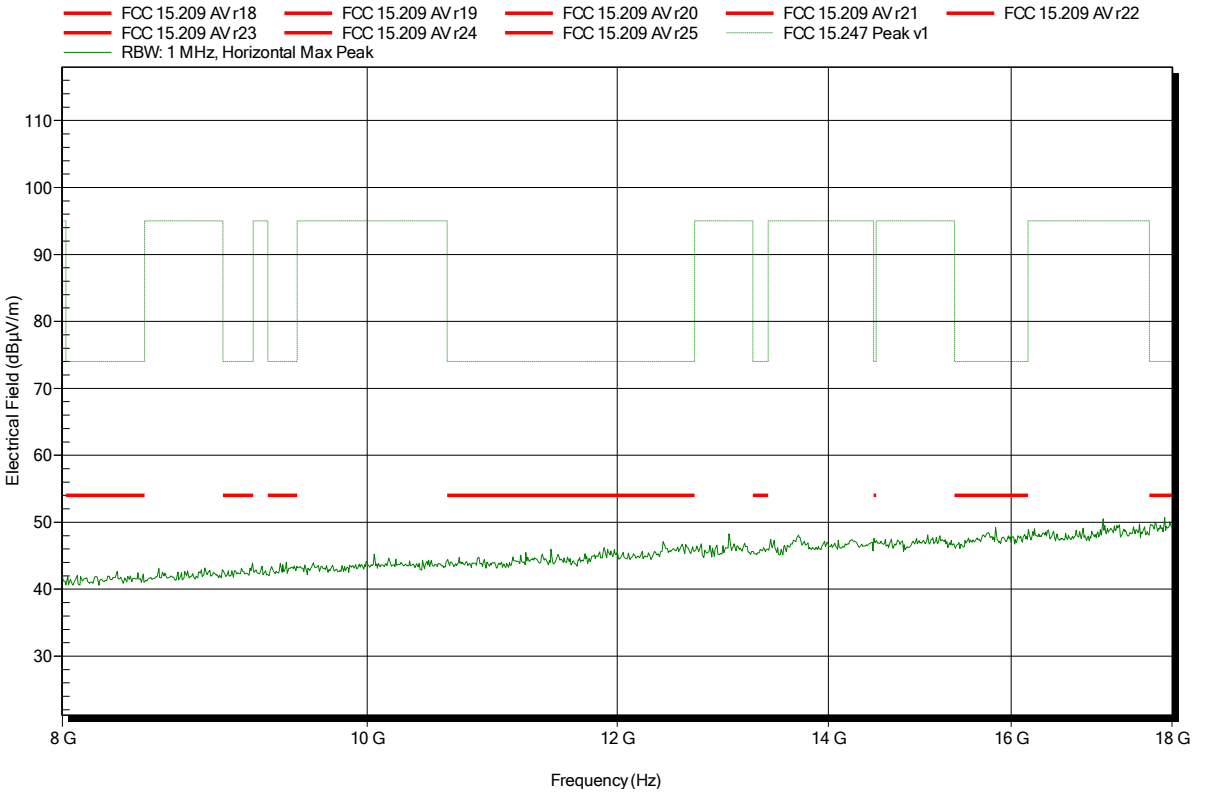

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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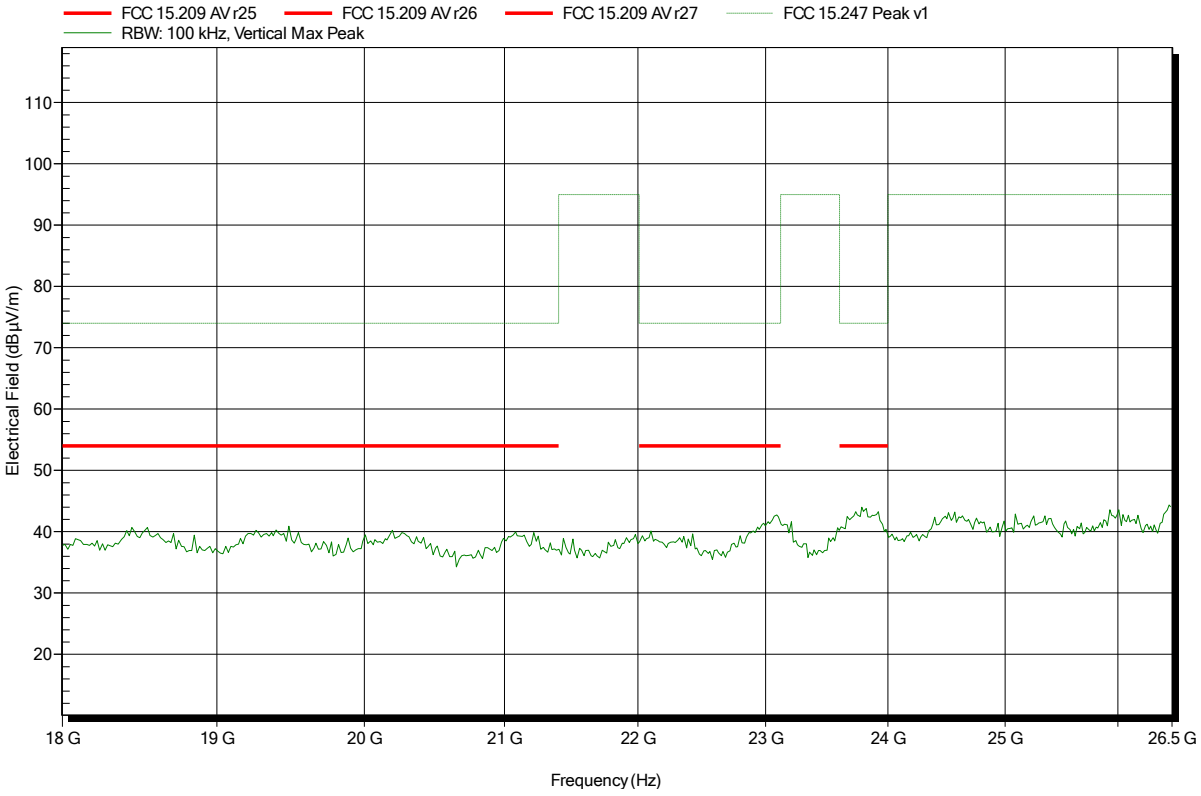

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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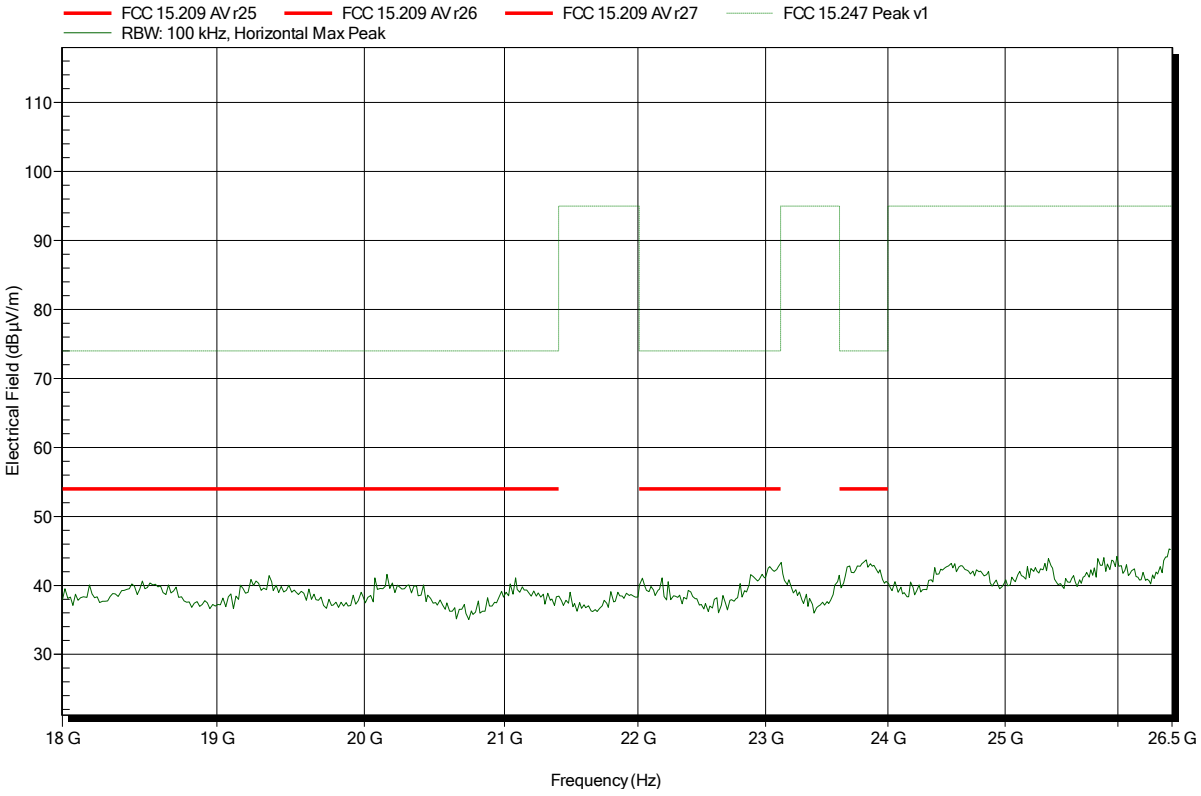

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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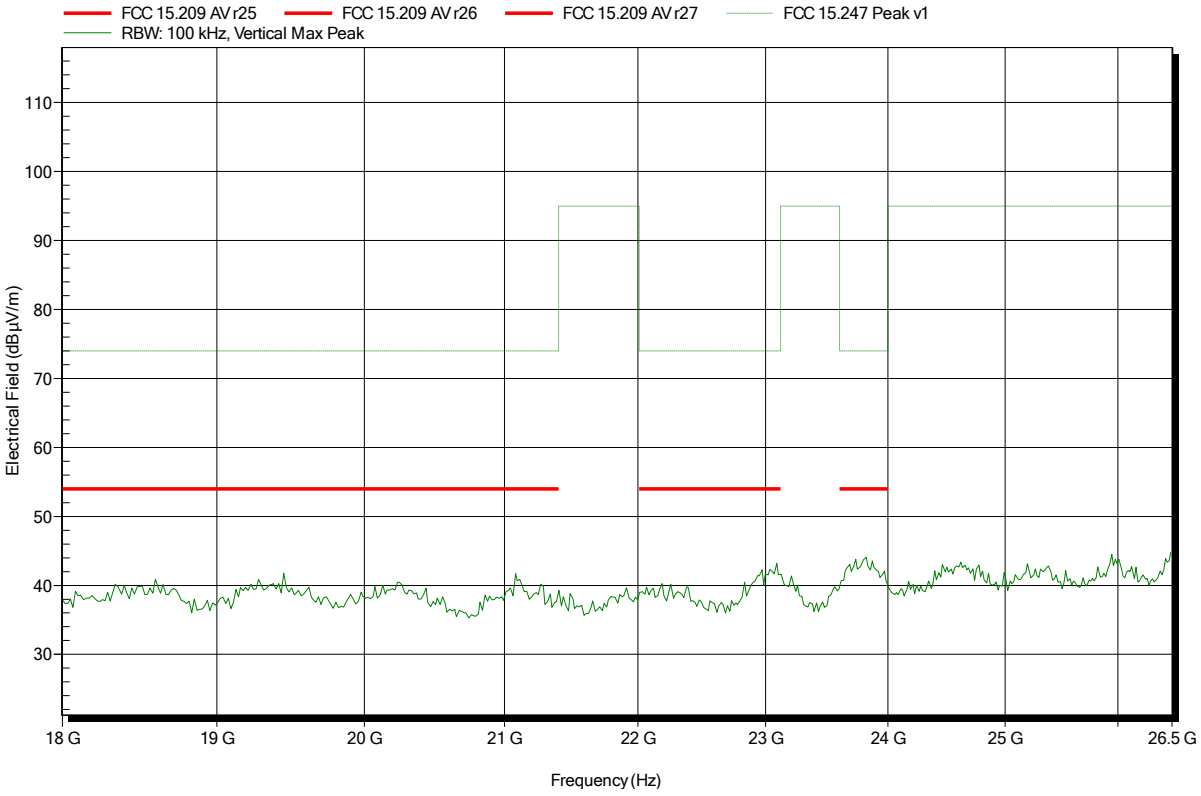

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A1
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A1

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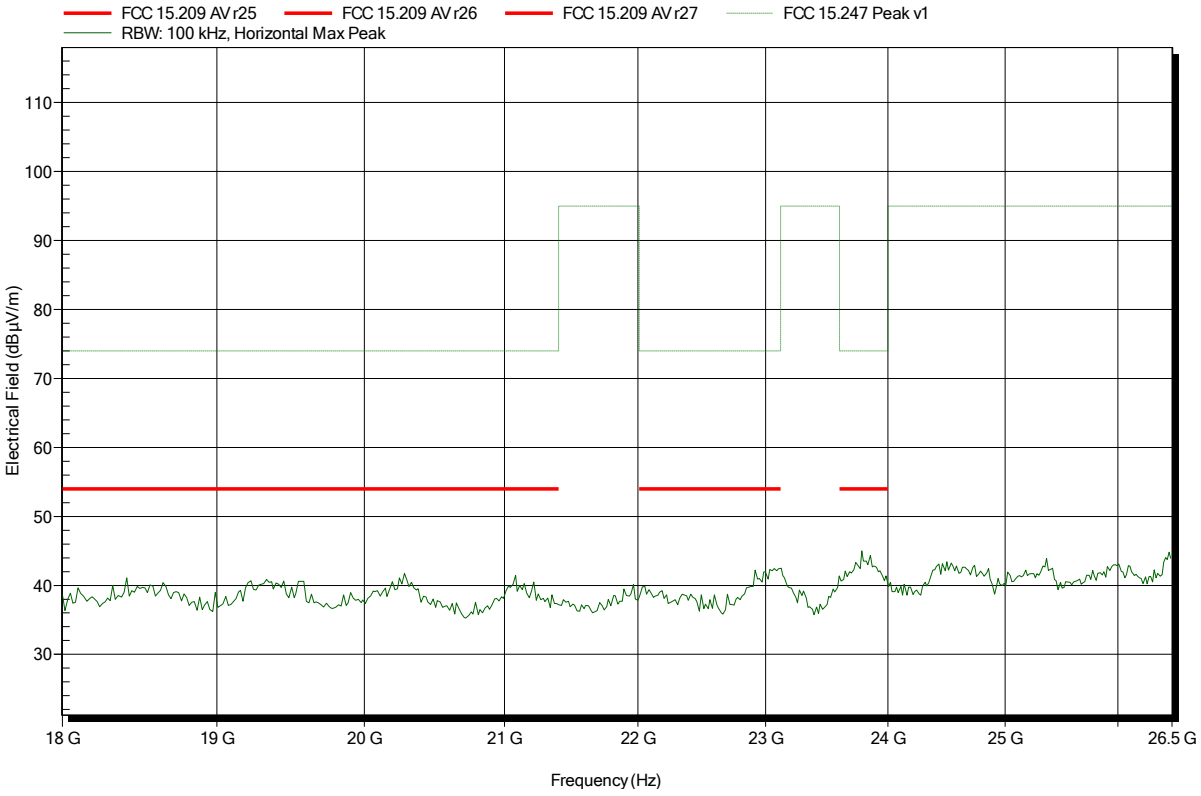

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
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Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A1 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A1

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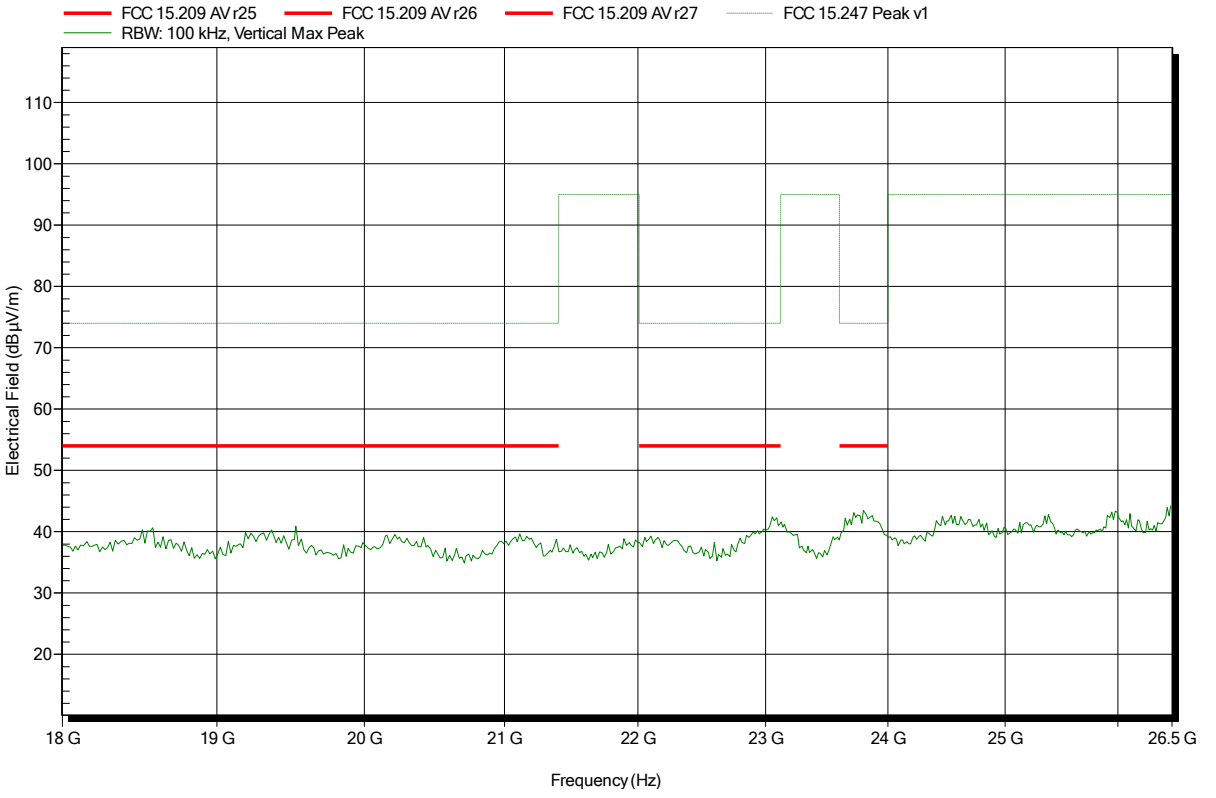

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A1 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A1

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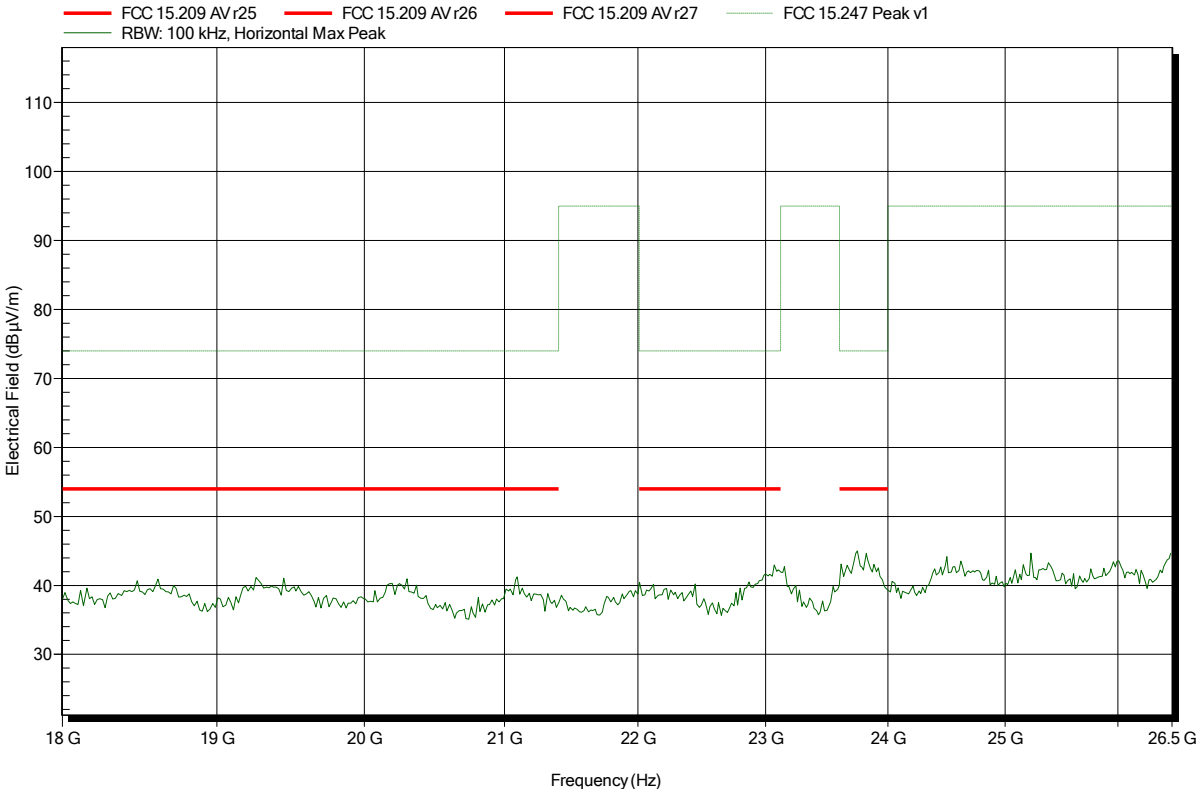

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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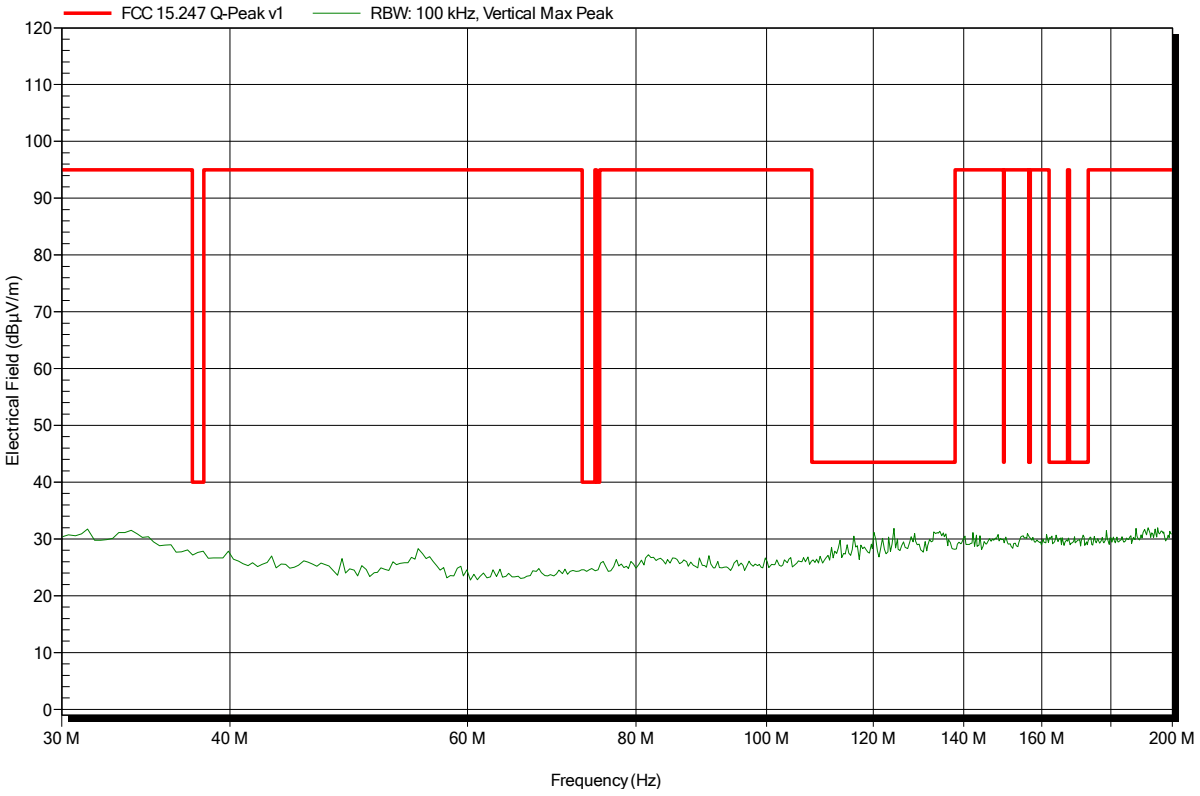

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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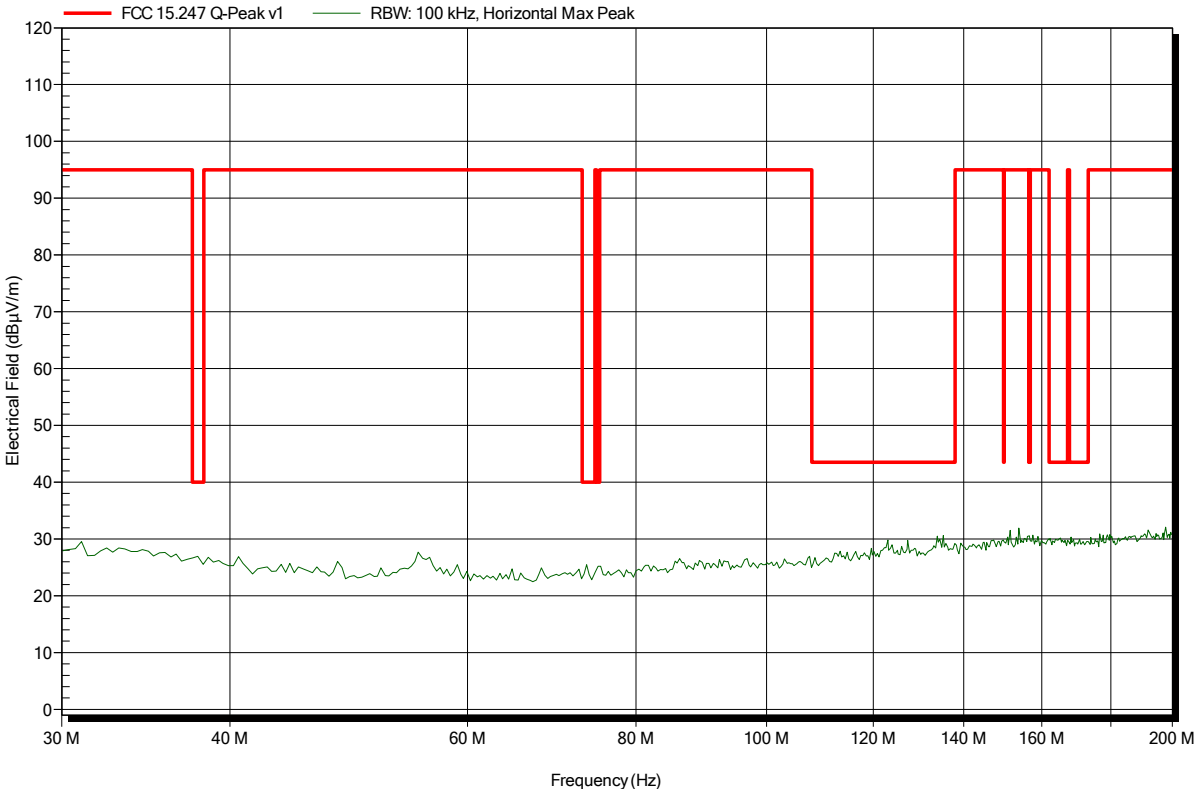

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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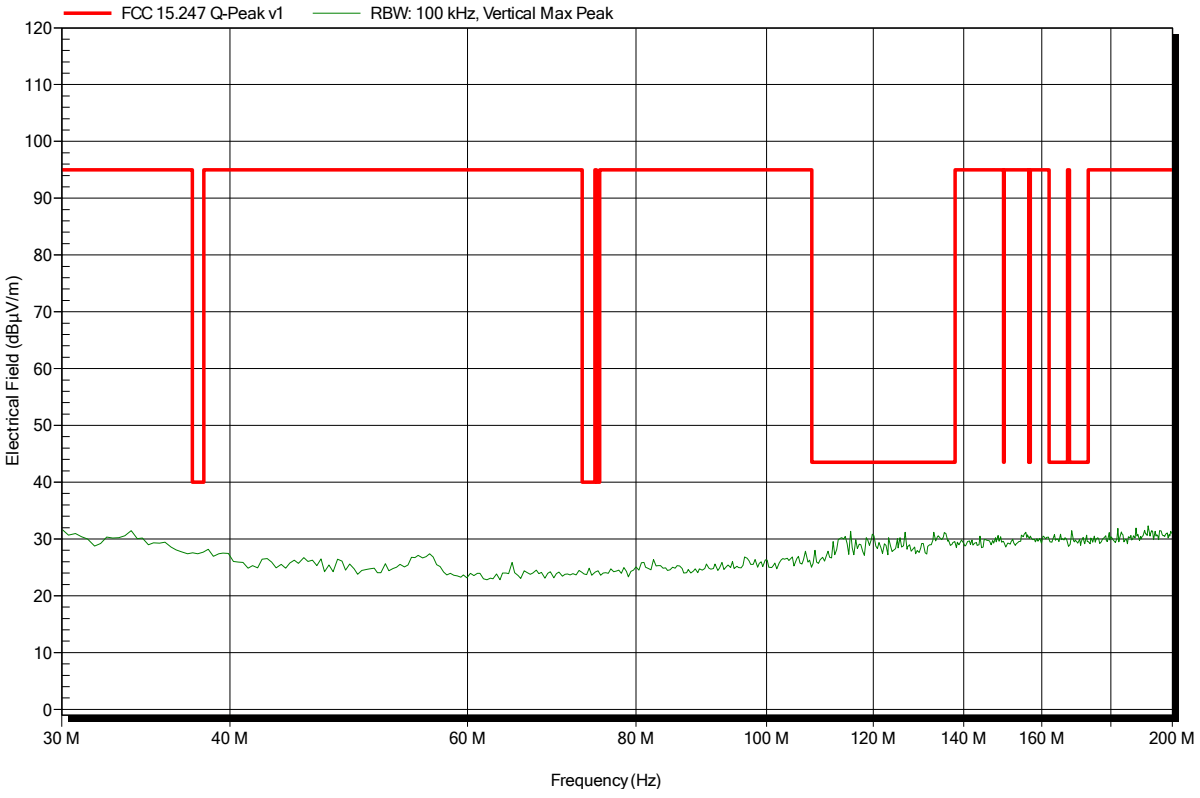

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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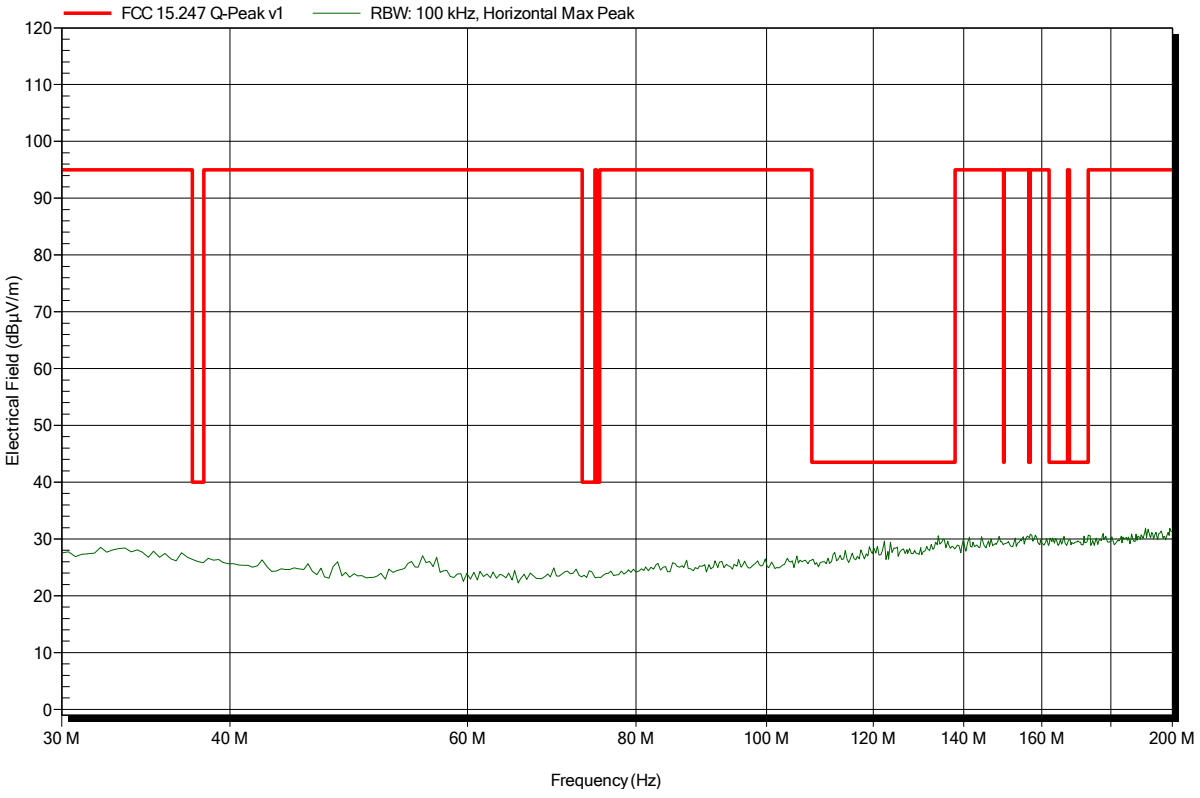

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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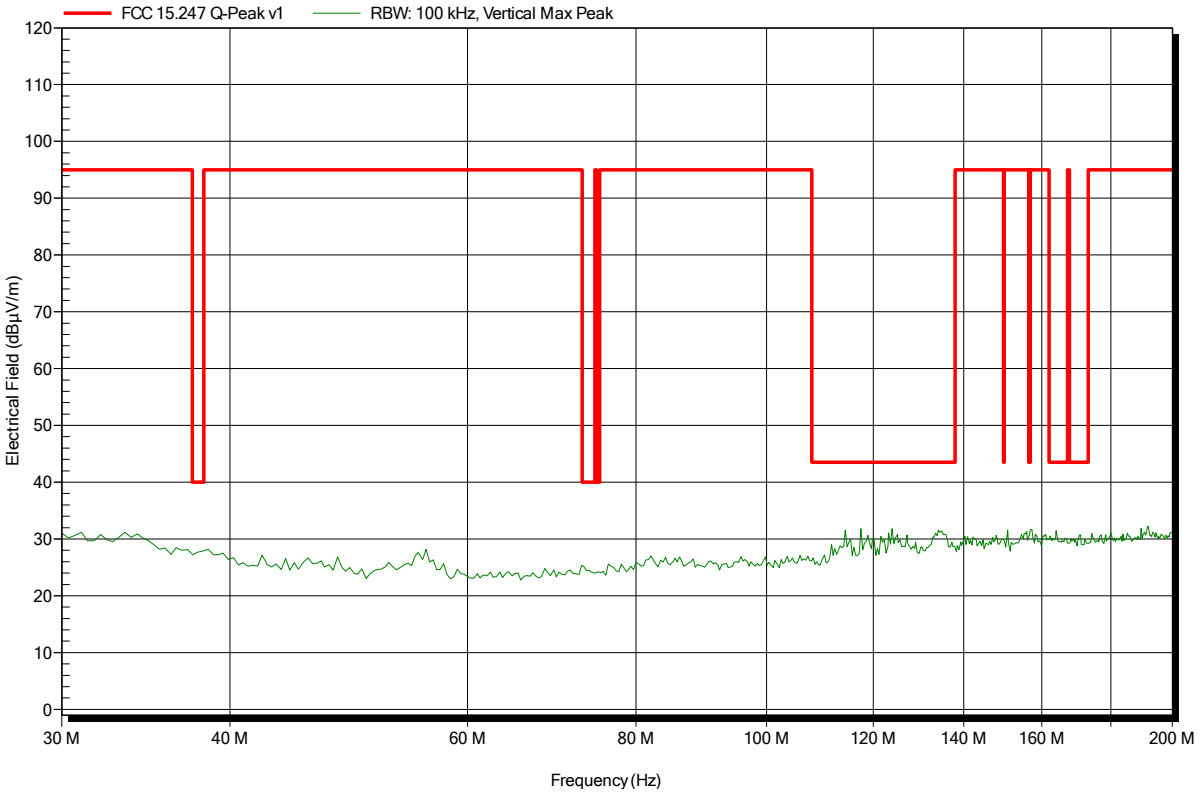

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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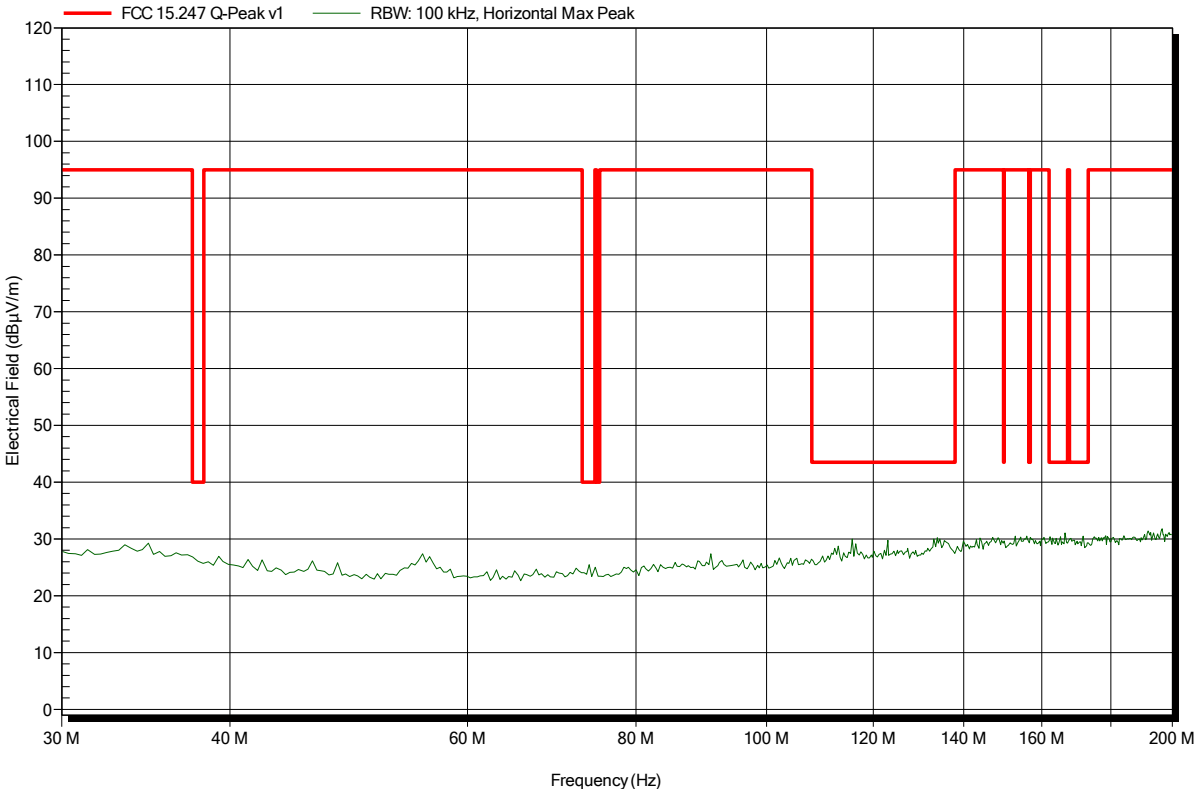

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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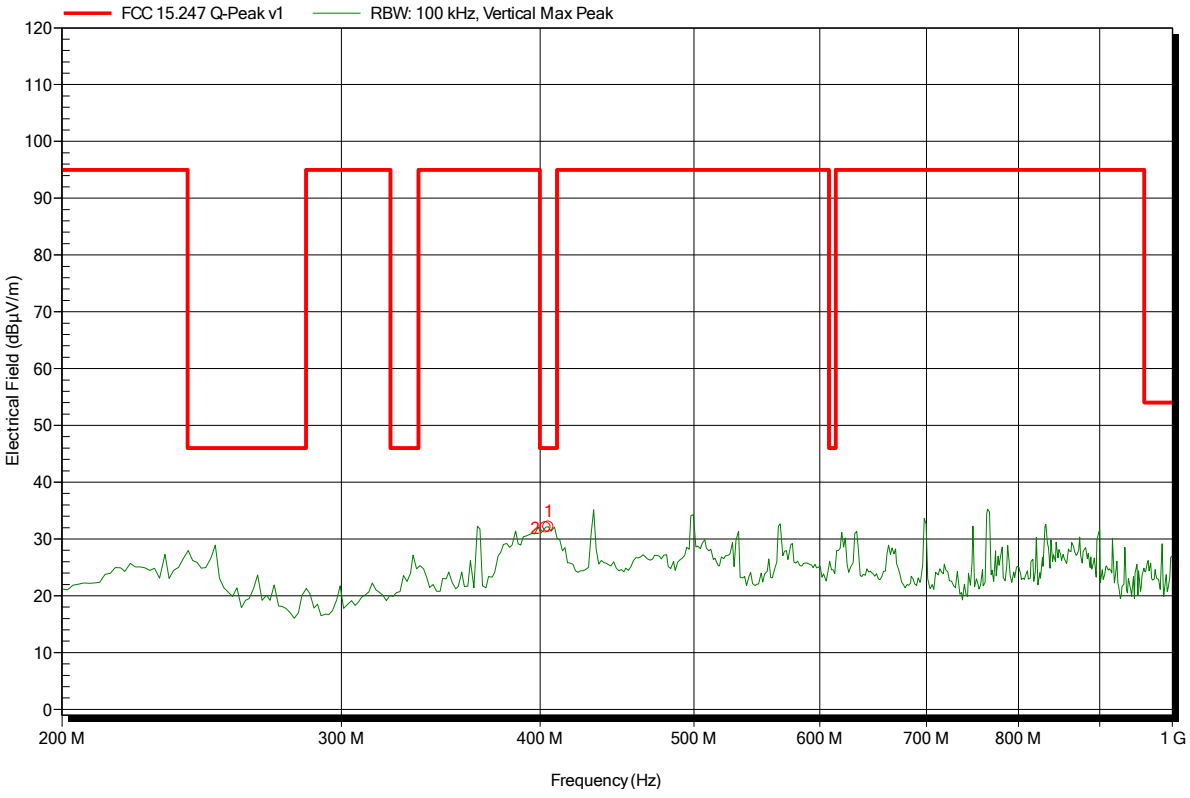

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
403.2 MHz	32.01 dBµV/m	46 dBµV/m	-13.99 dB	Pass
404.8 MHz	32.16 dBµV/m	46 dBµV/m	-13.84 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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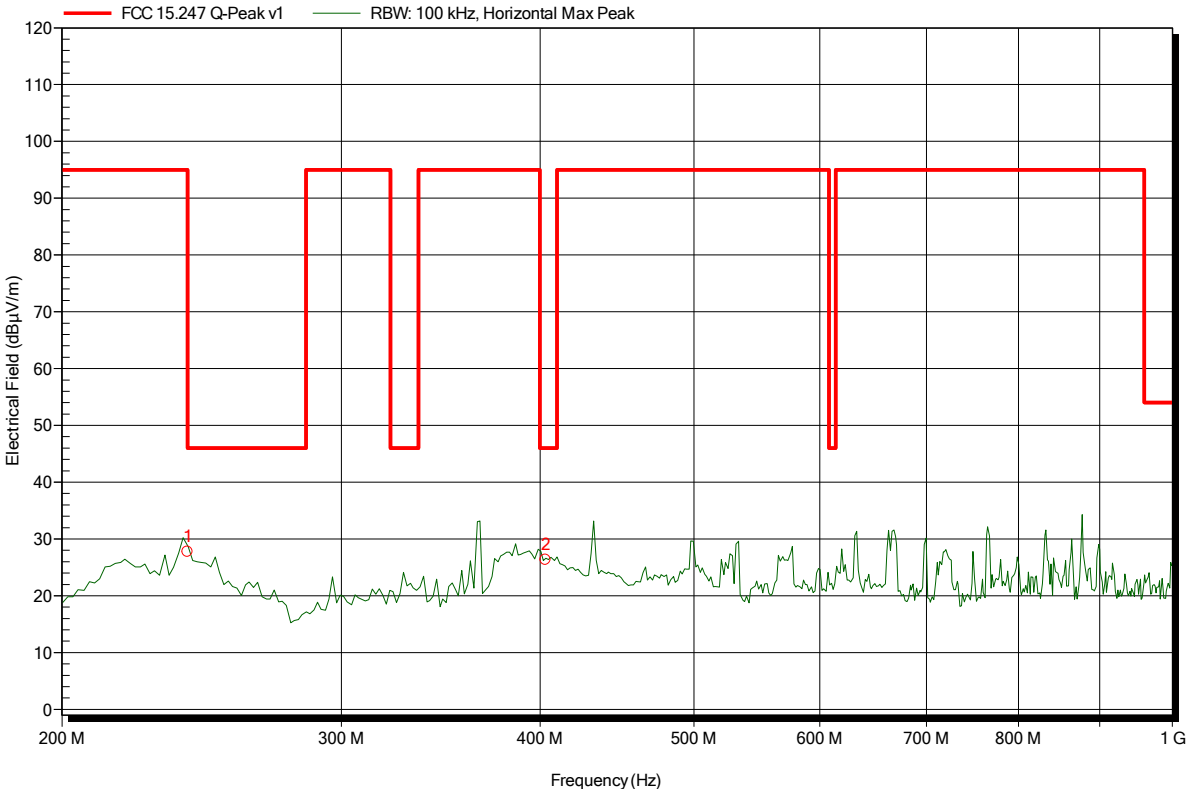

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
240 MHz	27.71 dBµV/m	46 dBµV/m	-18.29 dB	Pass
403.2 MHz	26.31 dBµV/m	46 dBµV/m	-19.69 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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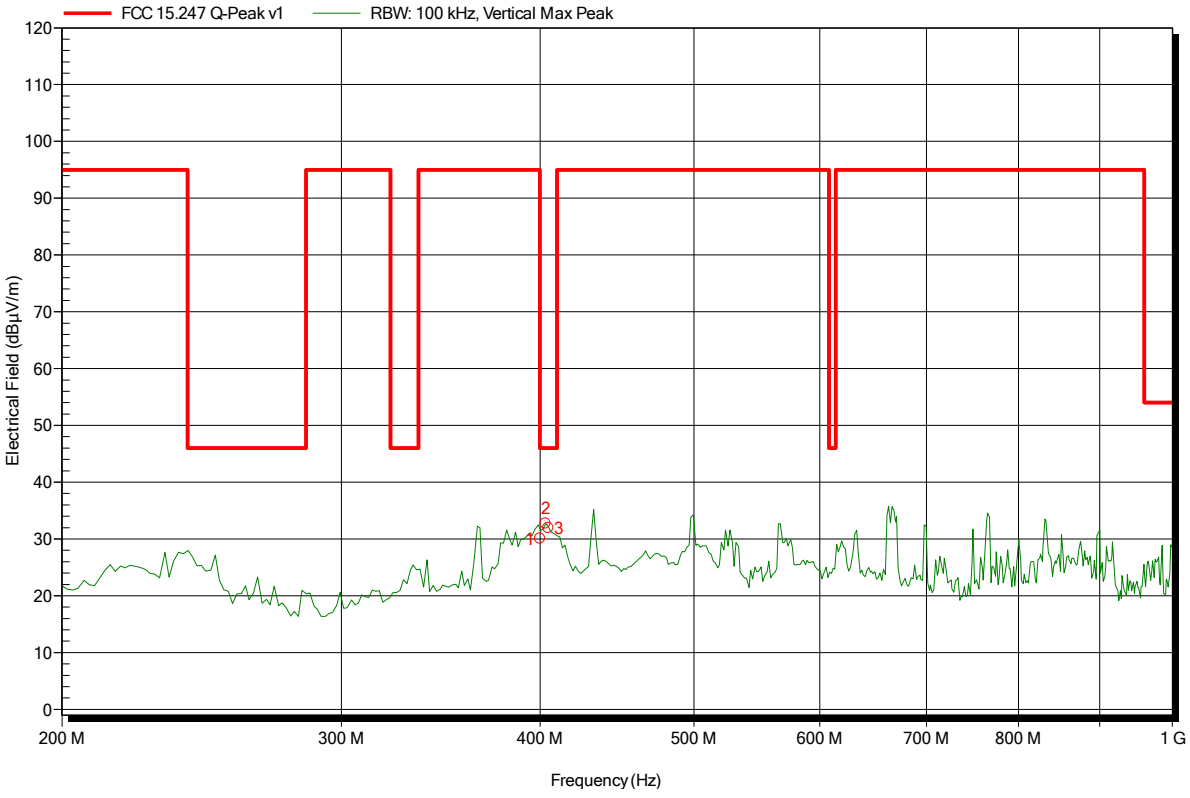

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
400 MHz	30.05 dBµV/m	46 dBµV/m	-15.95 dB	Pass
403.2 MHz	32.69 dBµV/m	46 dBµV/m	-13.31 dB	Pass
404.8 MHz	31.89 dBµV/m	46 dBµV/m	-14.11 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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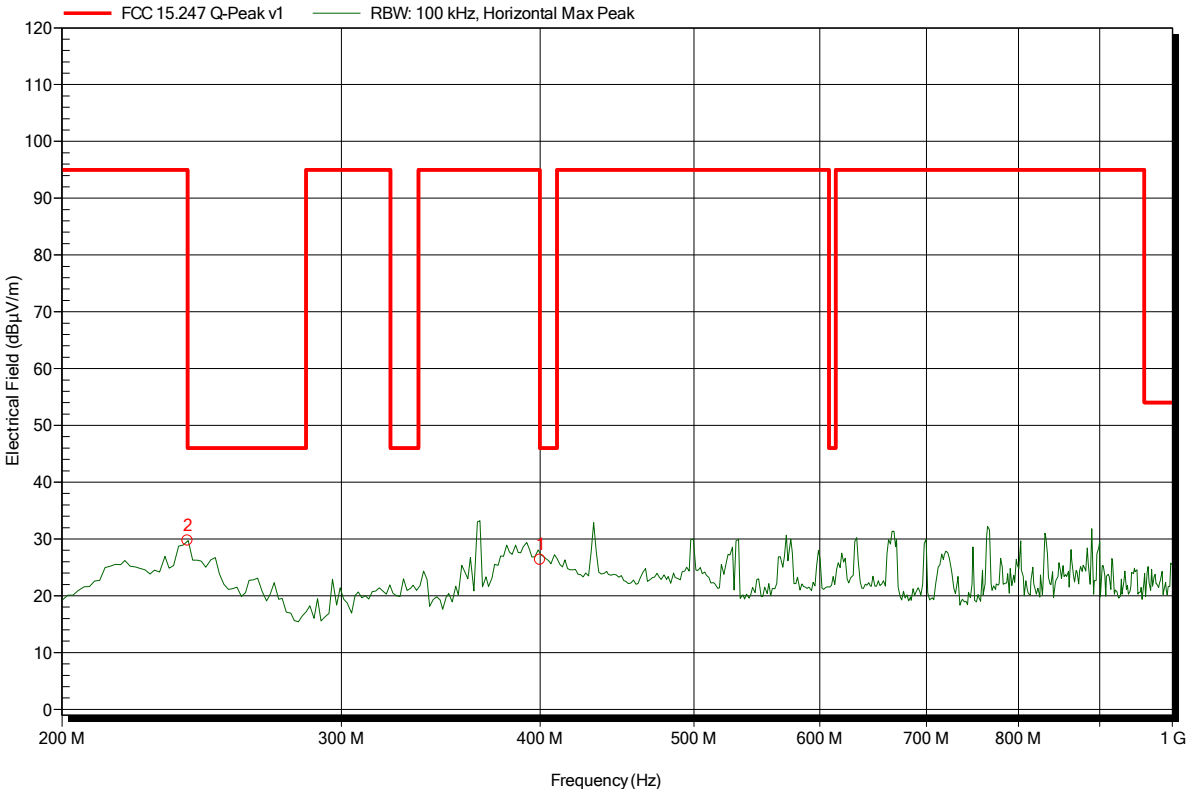

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
240 MHz	29.69 dBµV/m	46 dBµV/m	-16.31 dB	Pass
400 MHz	26.35 dBµV/m	46 dBµV/m	-19.65 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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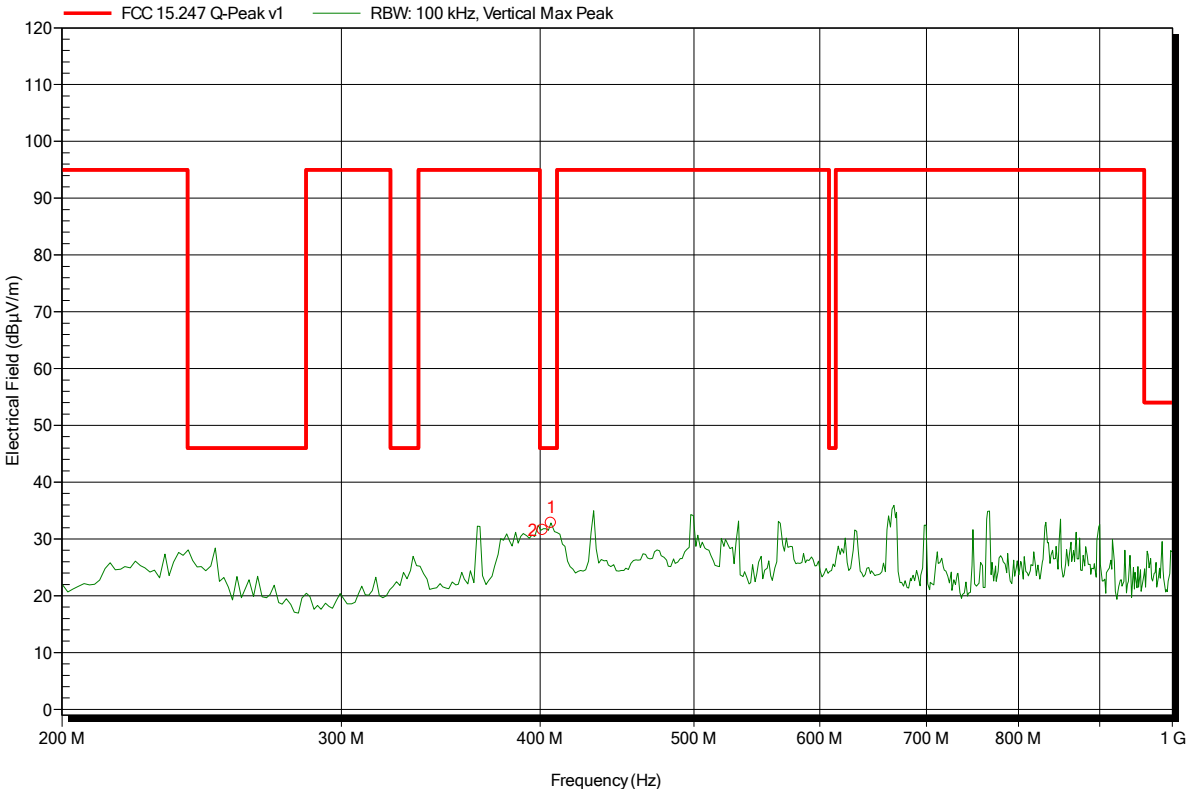

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
401.6 MHz	31.56 dBµV/m	46 dBµV/m	-14.44 dB	Pass
406.4 MHz	32.82 dBµV/m	46 dBµV/m	-13.18 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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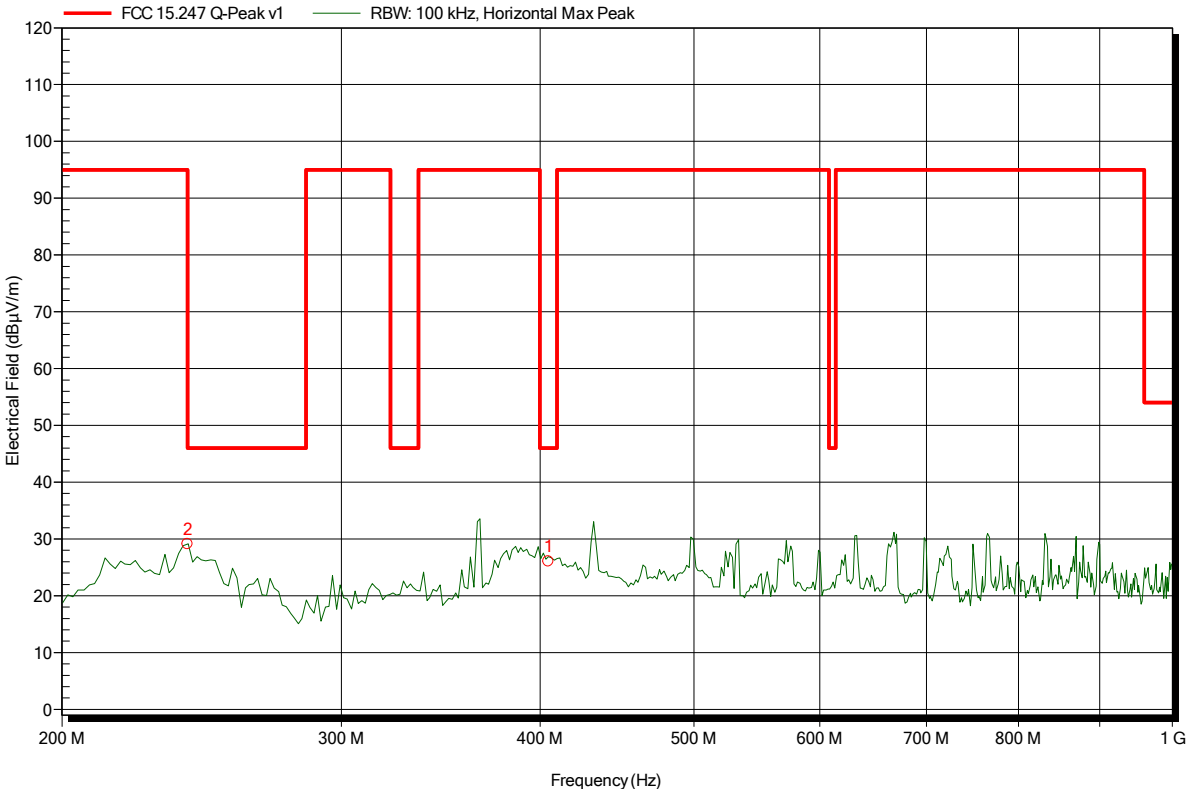

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
240 MHz	29.11 dBµV/m	46 dBµV/m	-16.89 dB	Pass
404.8 MHz	26.03 dBµV/m	46 dBµV/m	-19.97 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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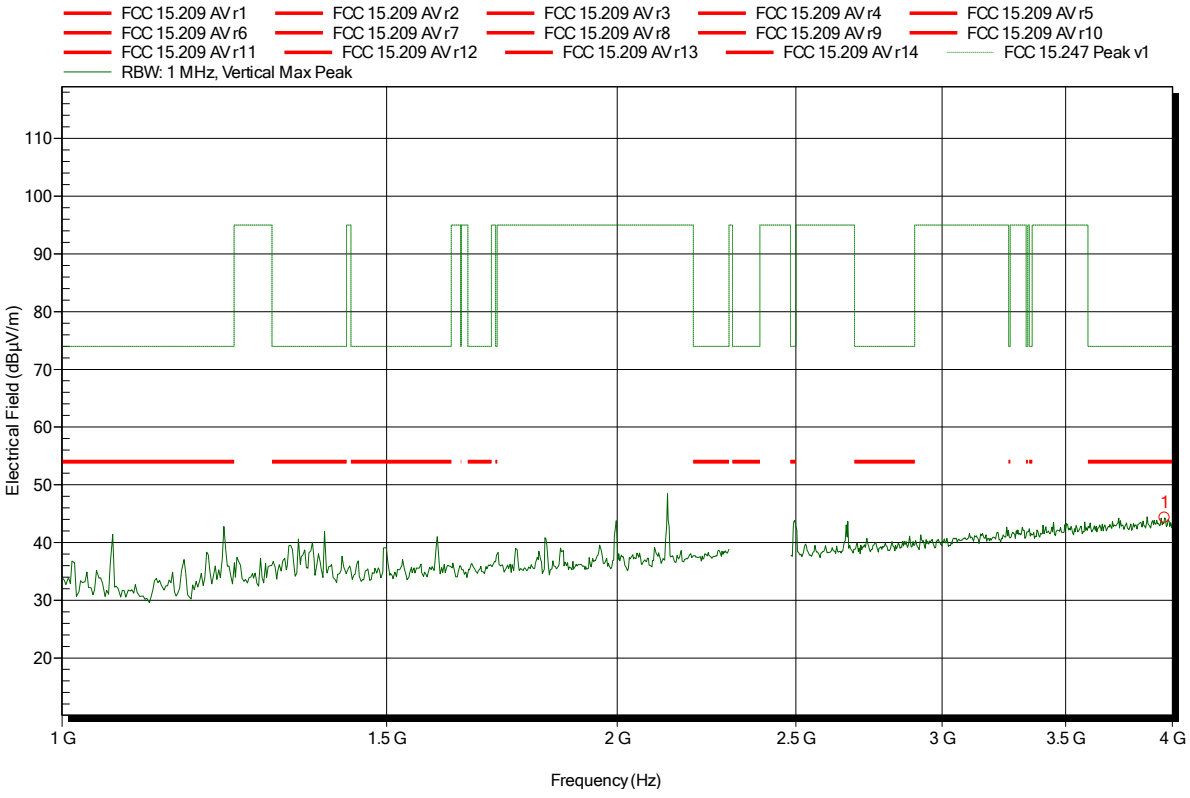

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.961 GHz	44.27 dBµV/m	74 dBµV/m	-29.73 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2; lower bandedge

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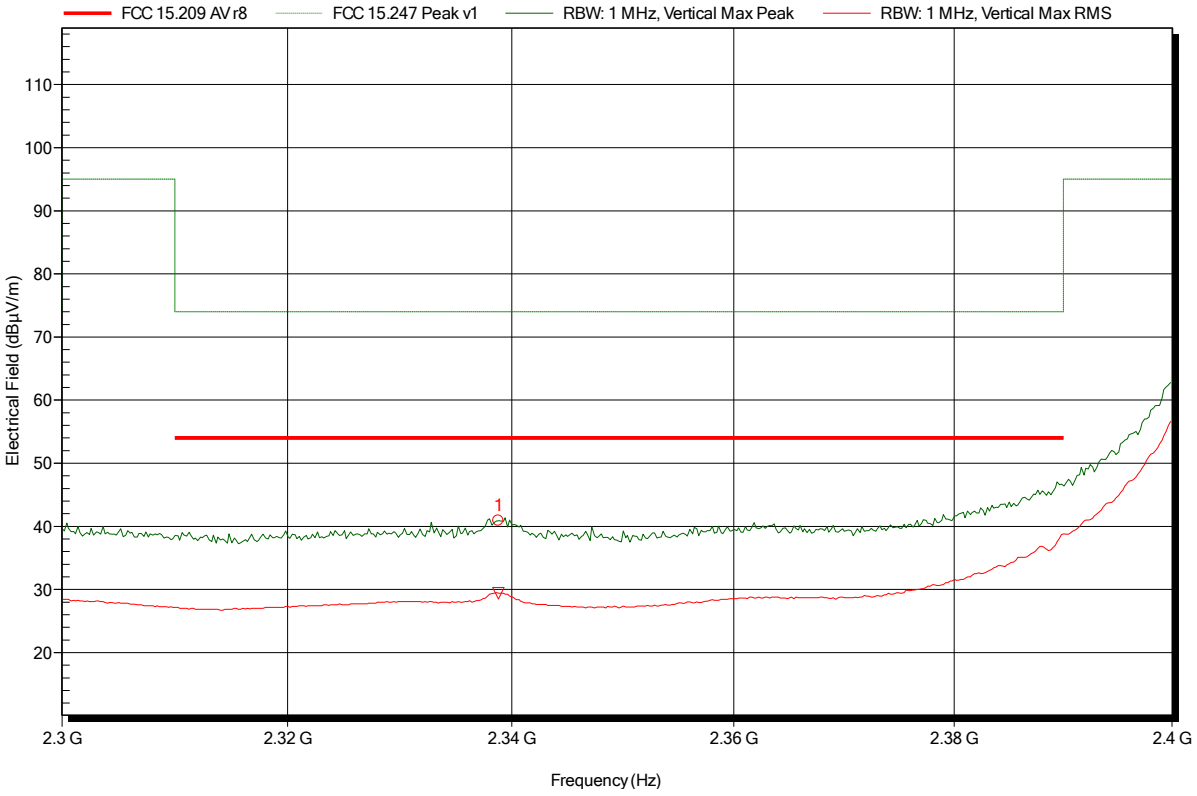

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.339 GHz	40.92 dBµV/m	74 dBµV/m	-33.08 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.339 GHz	29.38 dBµV/m	54 dBµV/m	-24.62 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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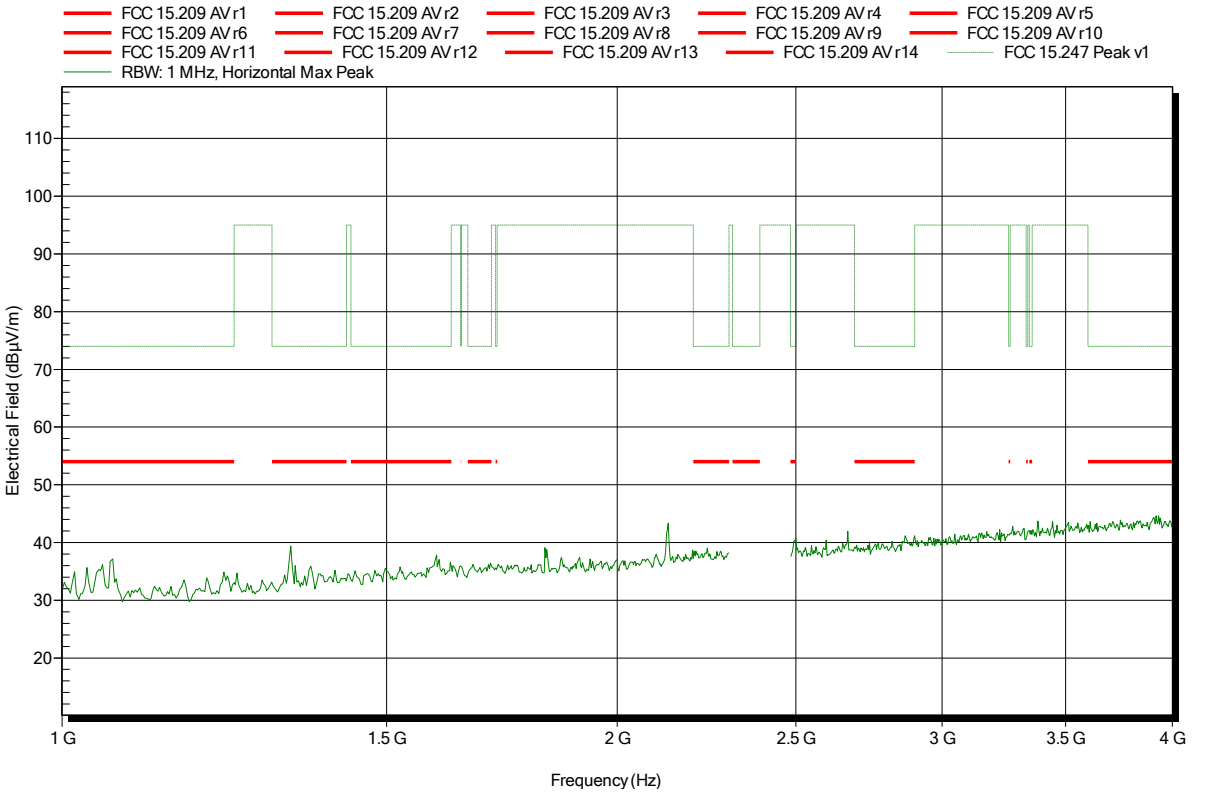

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2; lower bandedge

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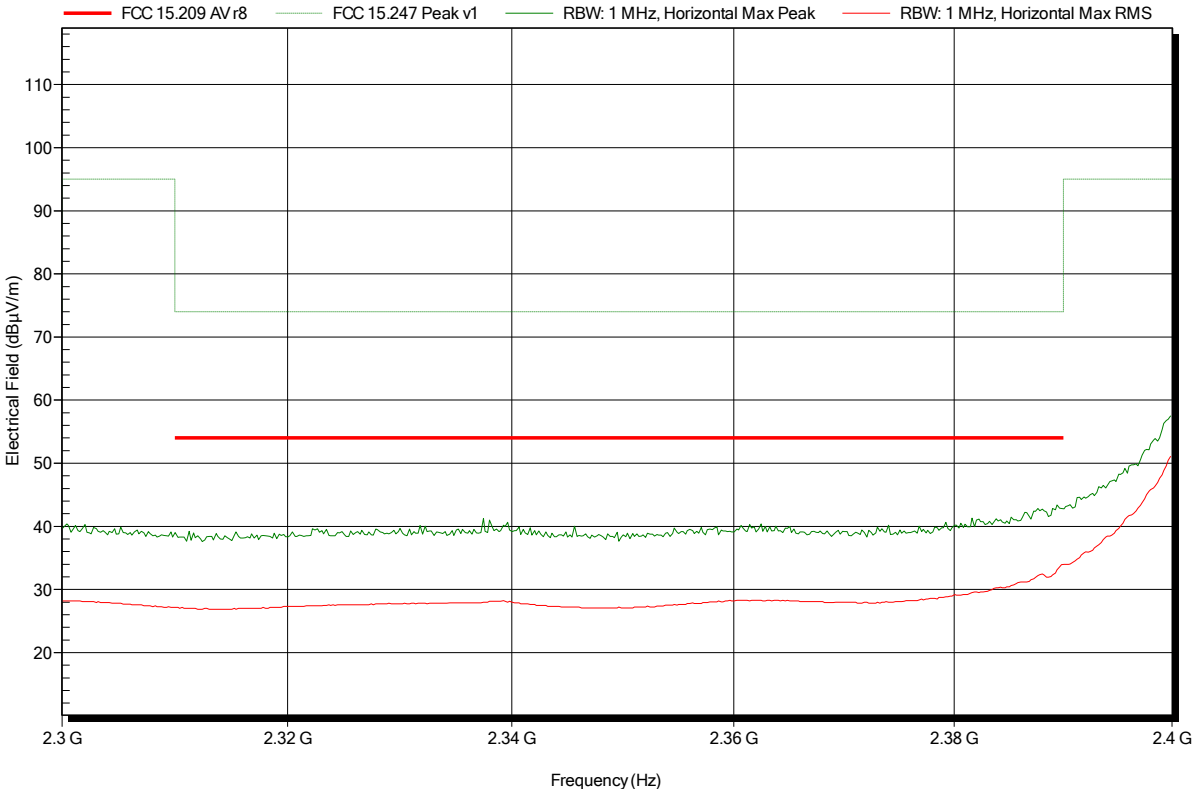

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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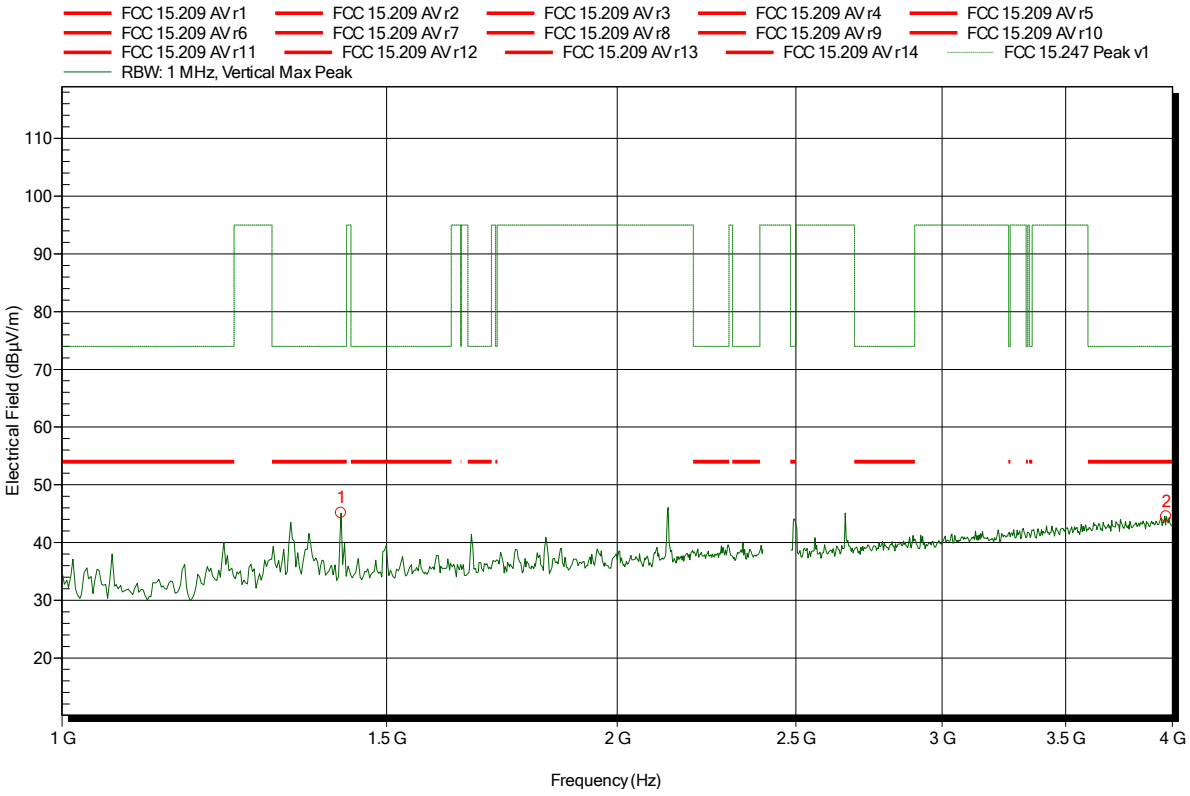

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
1.417 GHz	45.14 dBµV/m	74 dBµV/m	-28.86 dB	Pass
3.97 GHz	44.52 dBµV/m	74 dBµV/m	-29.48 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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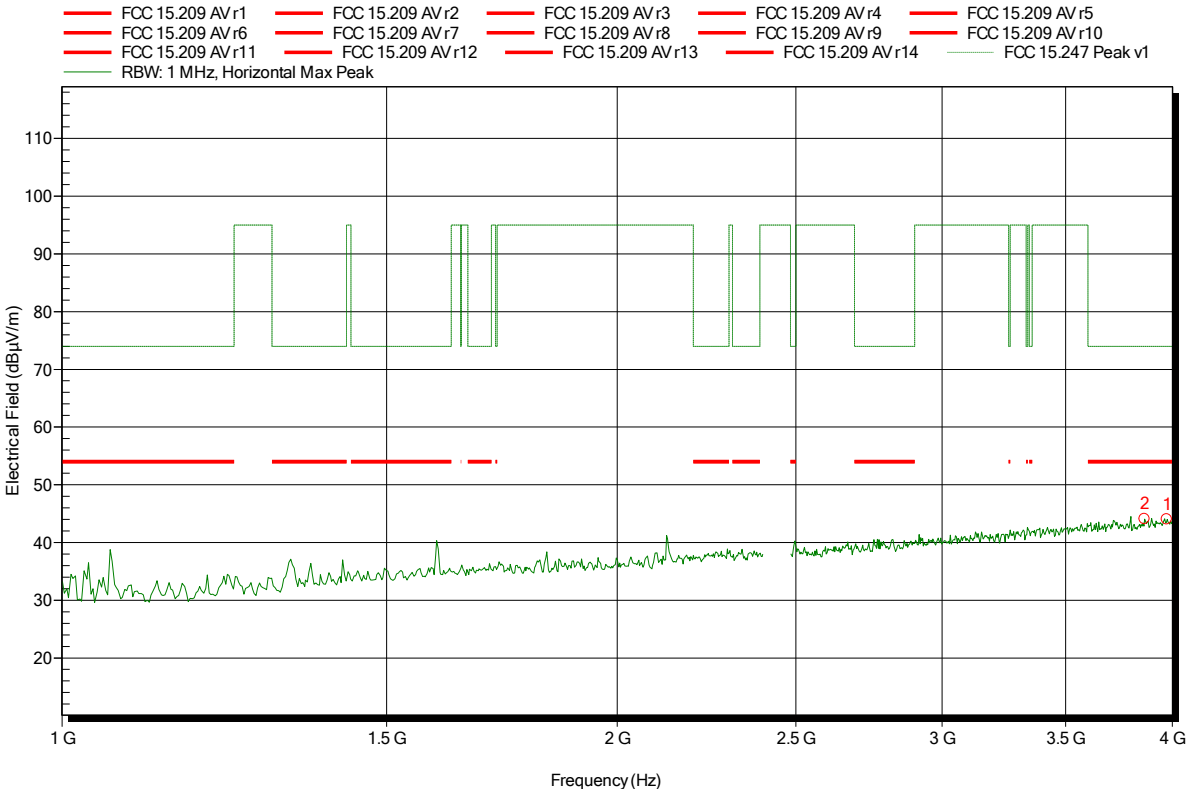

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.864 GHz	44.04 dBµV/m	74 dBµV/m	-29.96 dB	Pass
3.973 GHz	44.01 dBµV/m	74 dBµV/m	-29.99 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Stub" ant.: A2 (-9)
Test Date:	2015-05-20
Note:	EUT vertical

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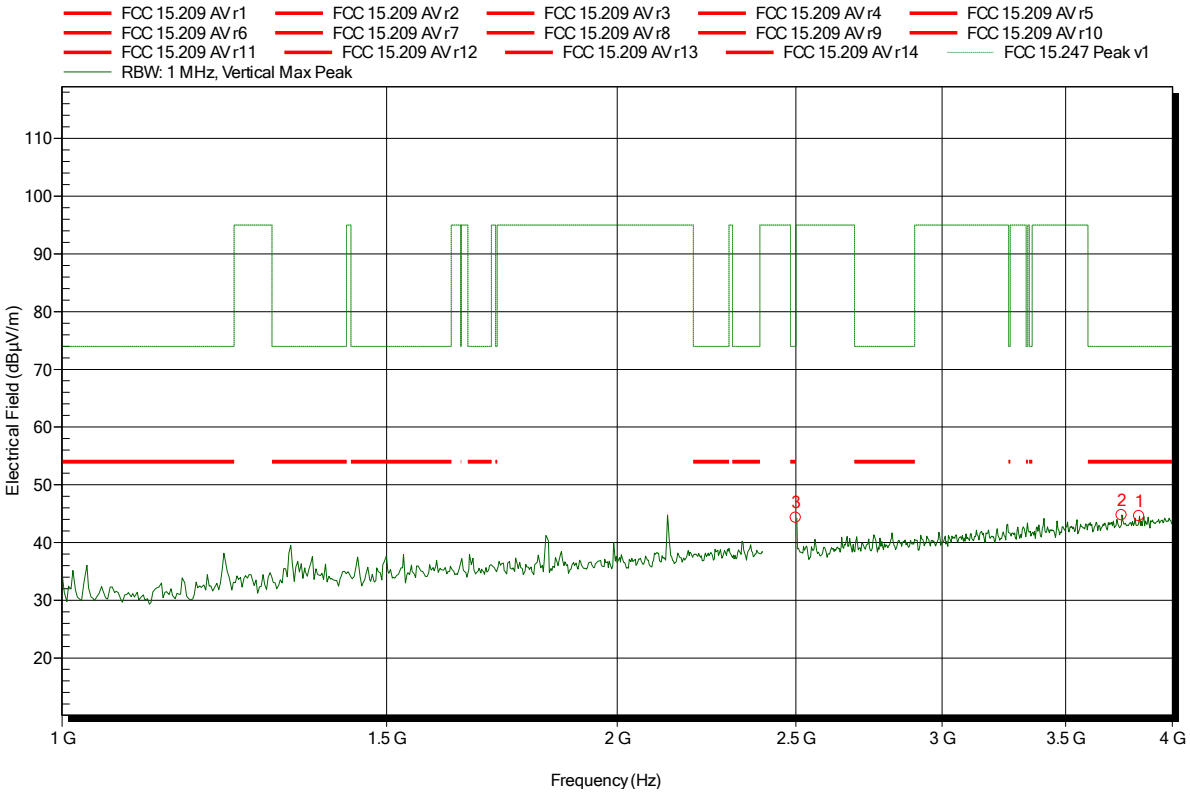

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.5 GHz	44.28 dBµV/m	74 dBµV/m	-29.72 dB	Pass
3.754 GHz	44.75 dBµV/m	74 dBµV/m	-29.25 dB	Pass
3.838 GHz	44.57 dBµV/m	74 dBµV/m	-29.43 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Stub" ant.: A2 (-9)
Test Date:	2015-05-20
Note:	EUT vertical, ant.: A2; higher bandedge

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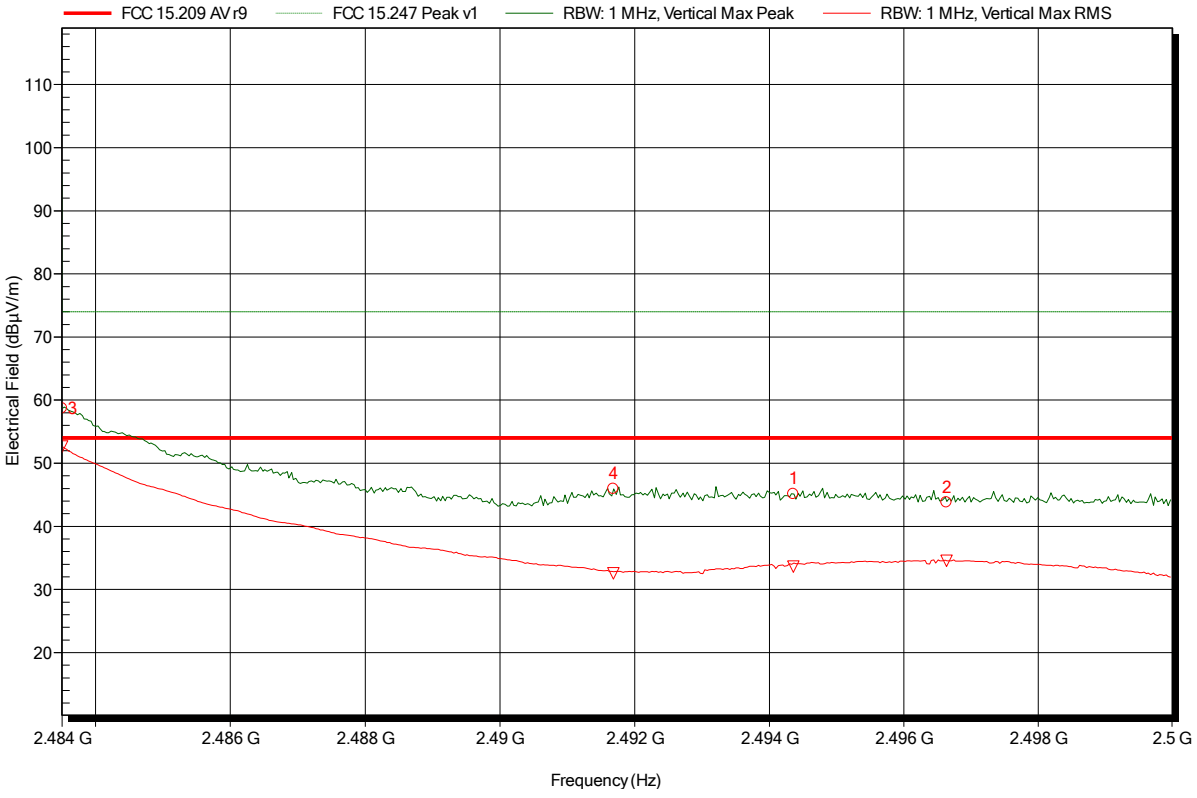

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.484 GHz	58.72 dBµV/m	74 dBµV/m	-15.28 dB	Pass
2.492 GHz	45.93 dBµV/m	74 dBµV/m	-28.07 dB	Pass
2.494 GHz	45.12 dBµV/m	74 dBµV/m	-28.88 dB	Pass
2.497 GHz	43.78 dBµV/m	74 dBµV/m	-30.22 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.484 GHz	52.64 dBµV/m	54 dBµV/m	-1.36 dB	Pass
2.492 GHz	32.57 dBµV/m	54 dBµV/m	-21.43 dB	Pass
2.494 GHz	33.62 dBµV/m	54 dBµV/m	-20.38 dB	Pass
2.497 GHz	34.56 dBµV/m	54 dBµV/m	-19.44 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Stub" ant.: A2 (-9)
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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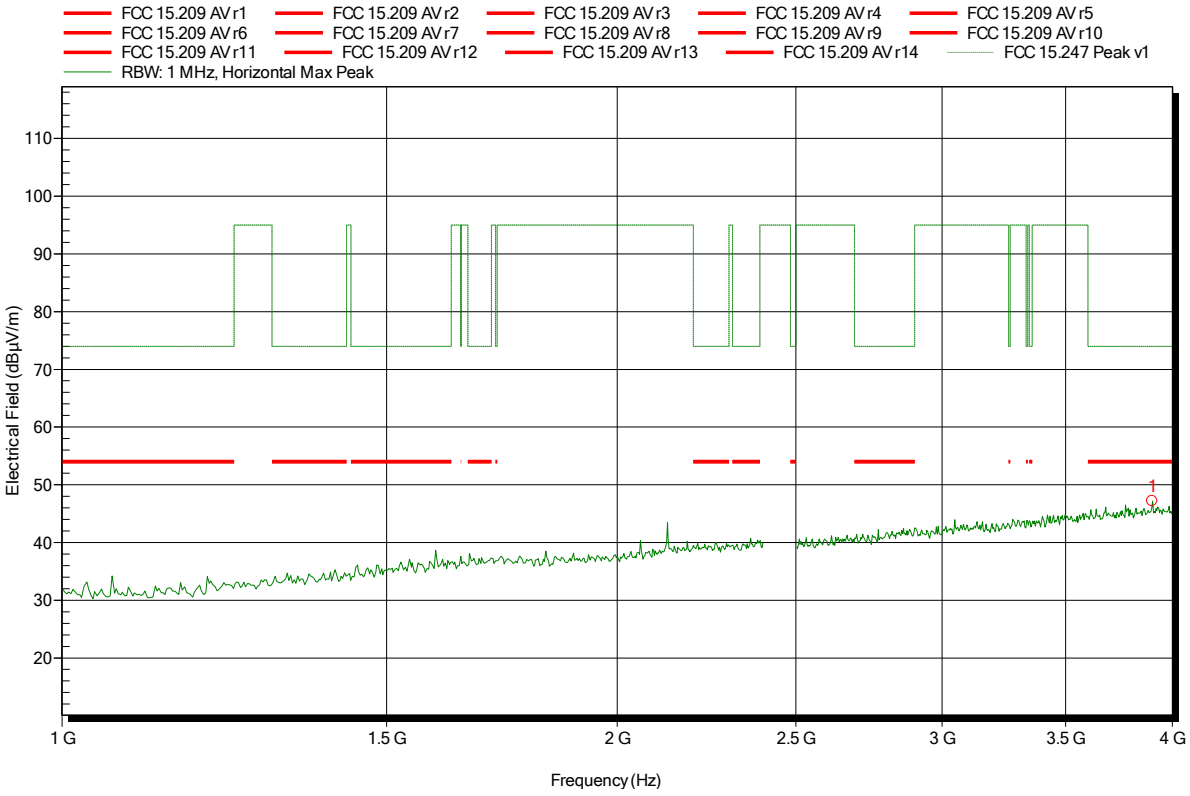

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.901 GHz	47.15 dBµV/m	74 dBµV/m	-26.85 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Stub" ant.: A2 (-9)
Test Date:	2015-05-20
Note:	EUT vertical ant.: A2; higher bandedge

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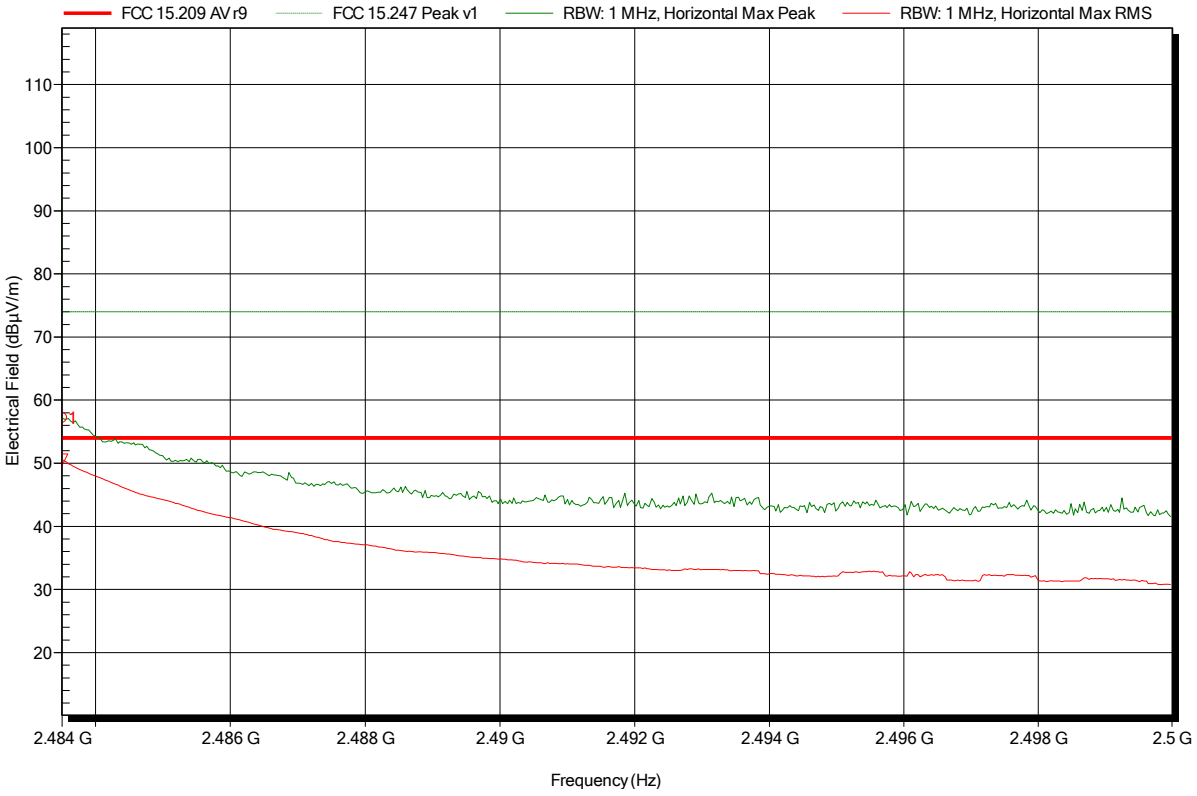

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.484 GHz	57.15 dBµV/m	74 dBµV/m	-16.85 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.484 GHz	50.58 dBµV/m	54 dBµV/m	-3.42 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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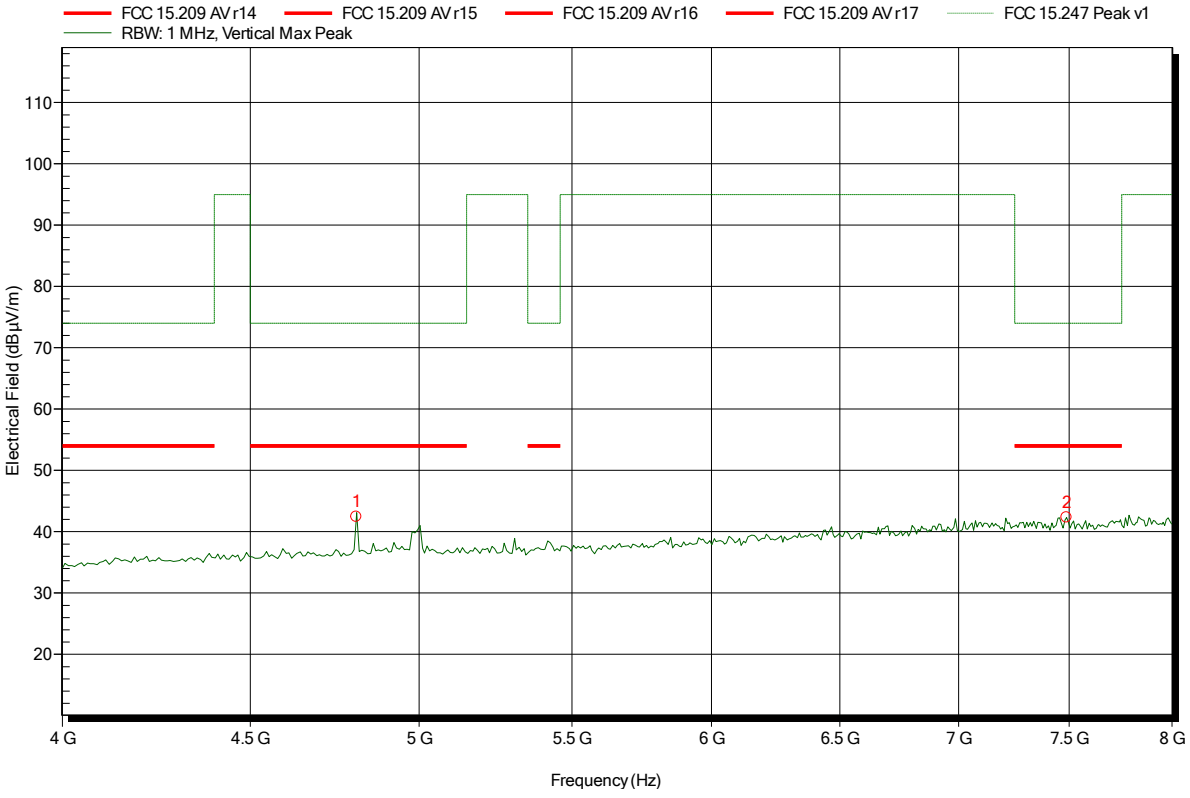

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.808 GHz	42.43 dBµV/m	74 dBµV/m	-31.57 dB	Pass
7.488 GHz	42.32 dBµV/m	74 dBµV/m	-31.68 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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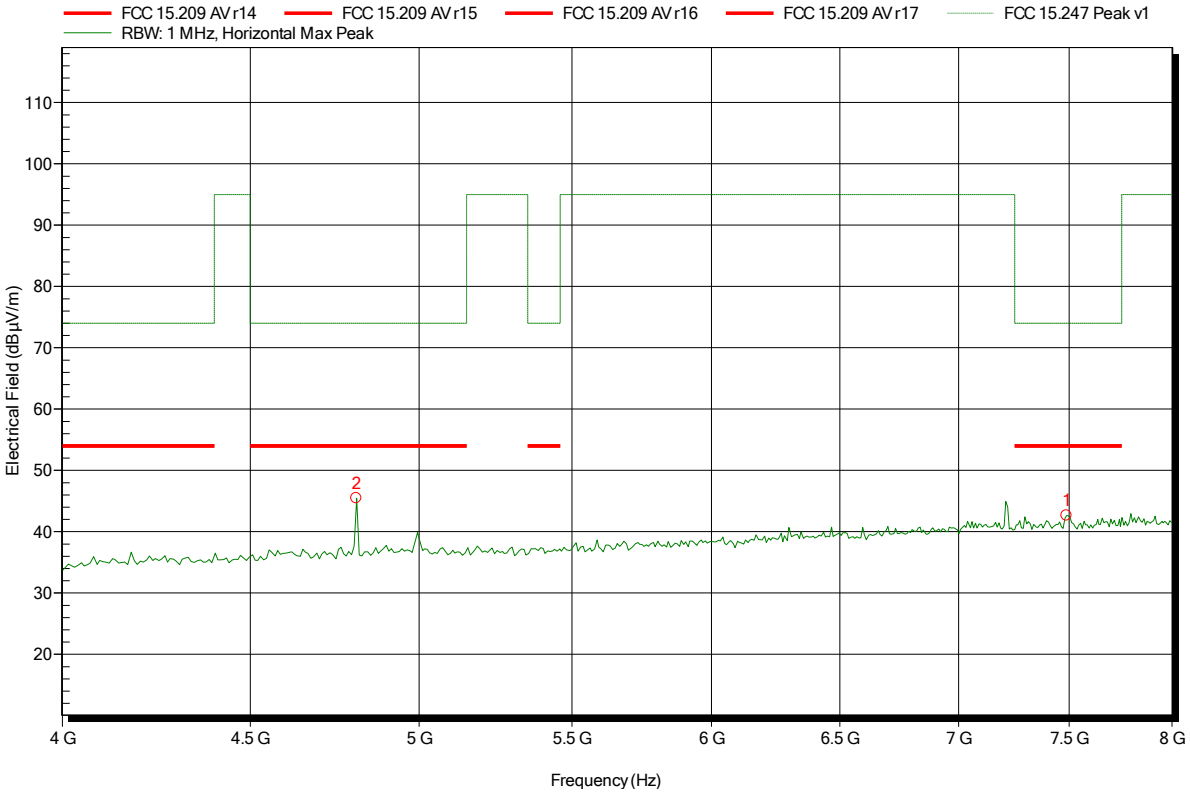

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.808 GHz	45.48 dBµV/m	74 dBµV/m	-28.52 dB	Pass
7.488 GHz	42.62 dBµV/m	74 dBµV/m	-31.38 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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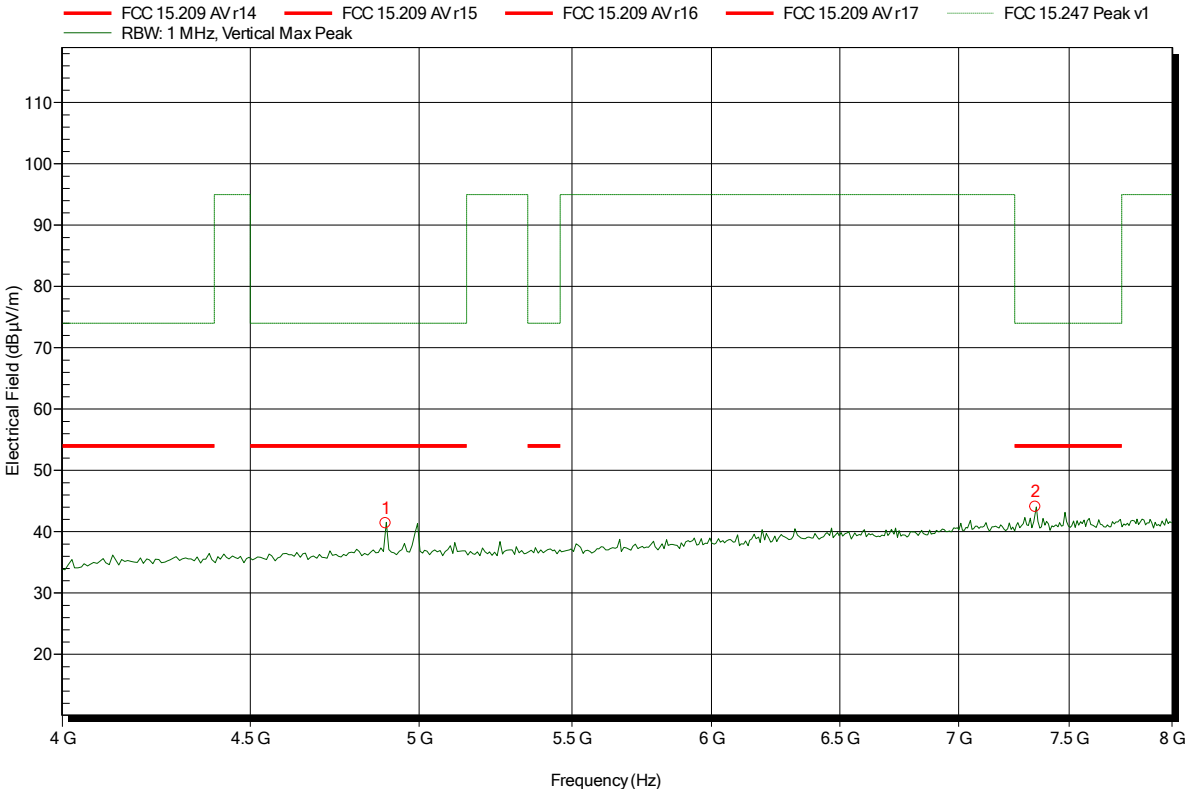

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.896 GHz	41.38 dBµV/m	74 dBµV/m	-32.62 dB	Pass
7.344 GHz	44.07 dBµV/m	74 dBµV/m	-29.93 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
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Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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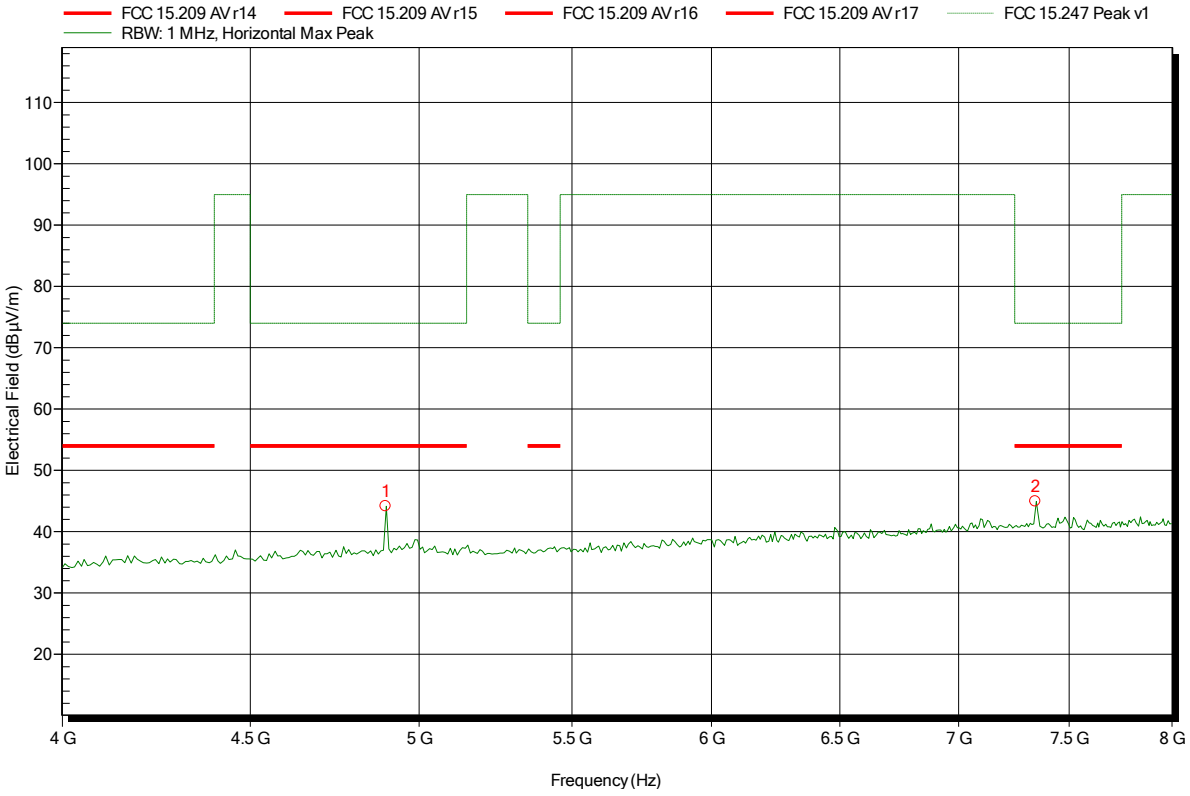

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.896 GHz	44.17 dBµV/m	74 dBµV/m	-29.83 dB	Pass
7.344 GHz	44.96 dBµV/m	74 dBµV/m	-29.04 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A2 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A2

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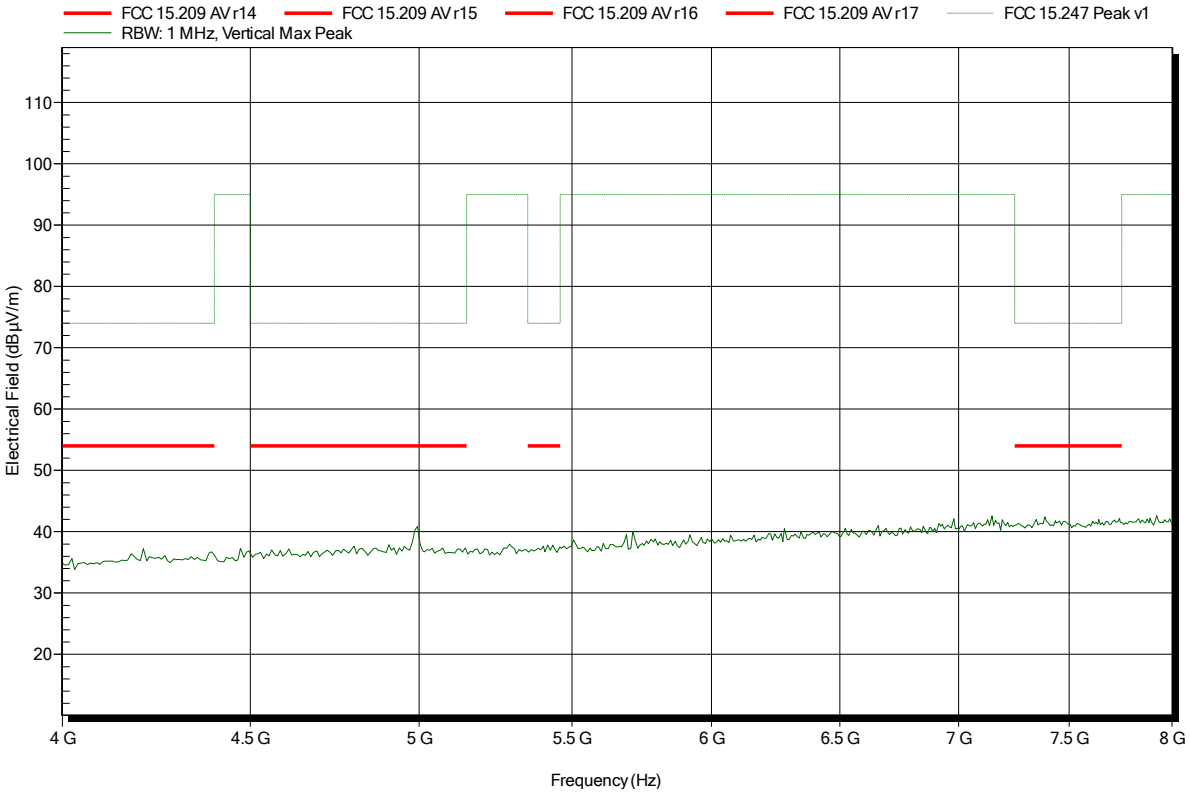

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

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EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
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Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A2 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A2

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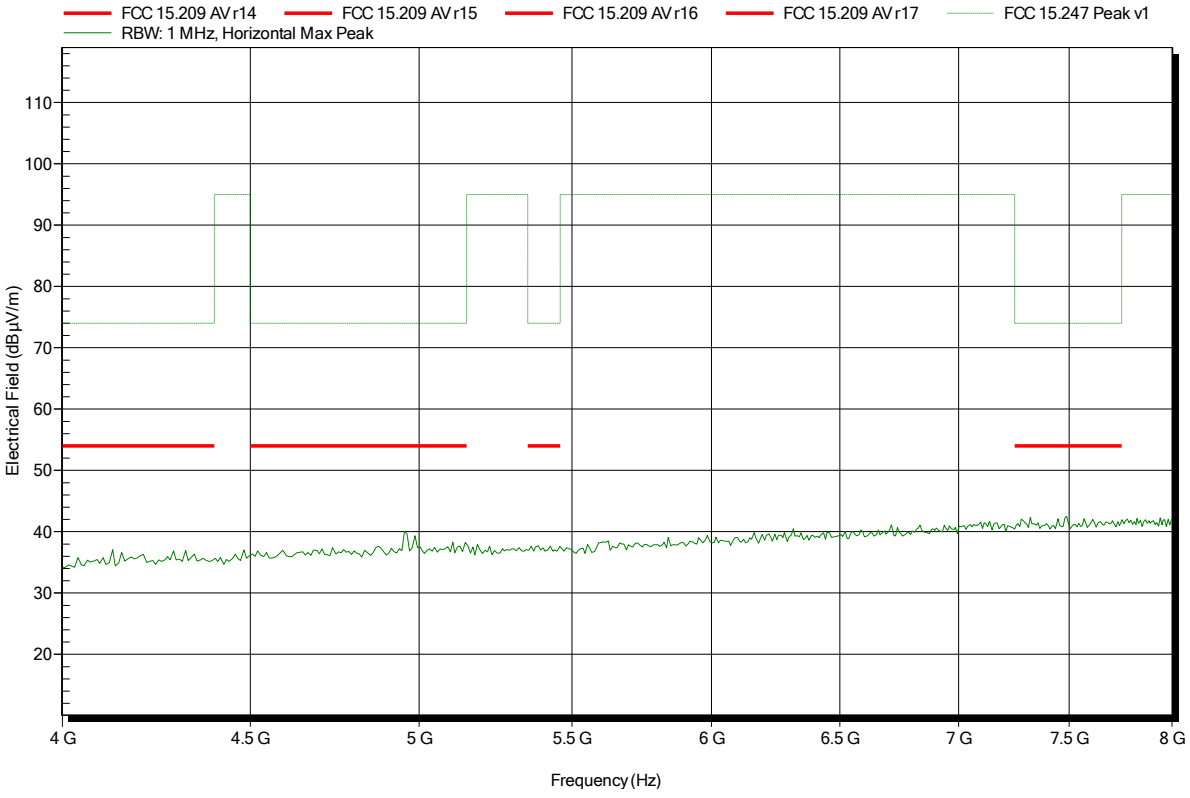

Spurious emissions according to FCC part 15 Subpart C § 15.247

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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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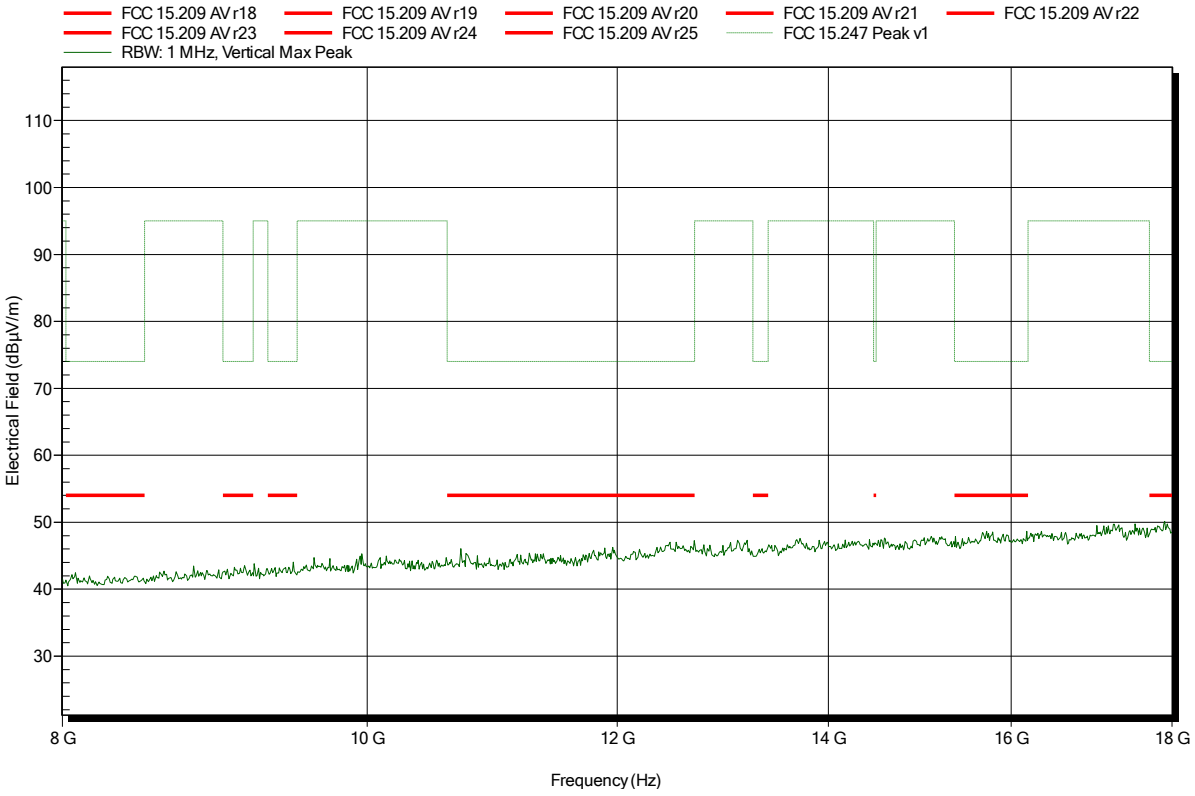

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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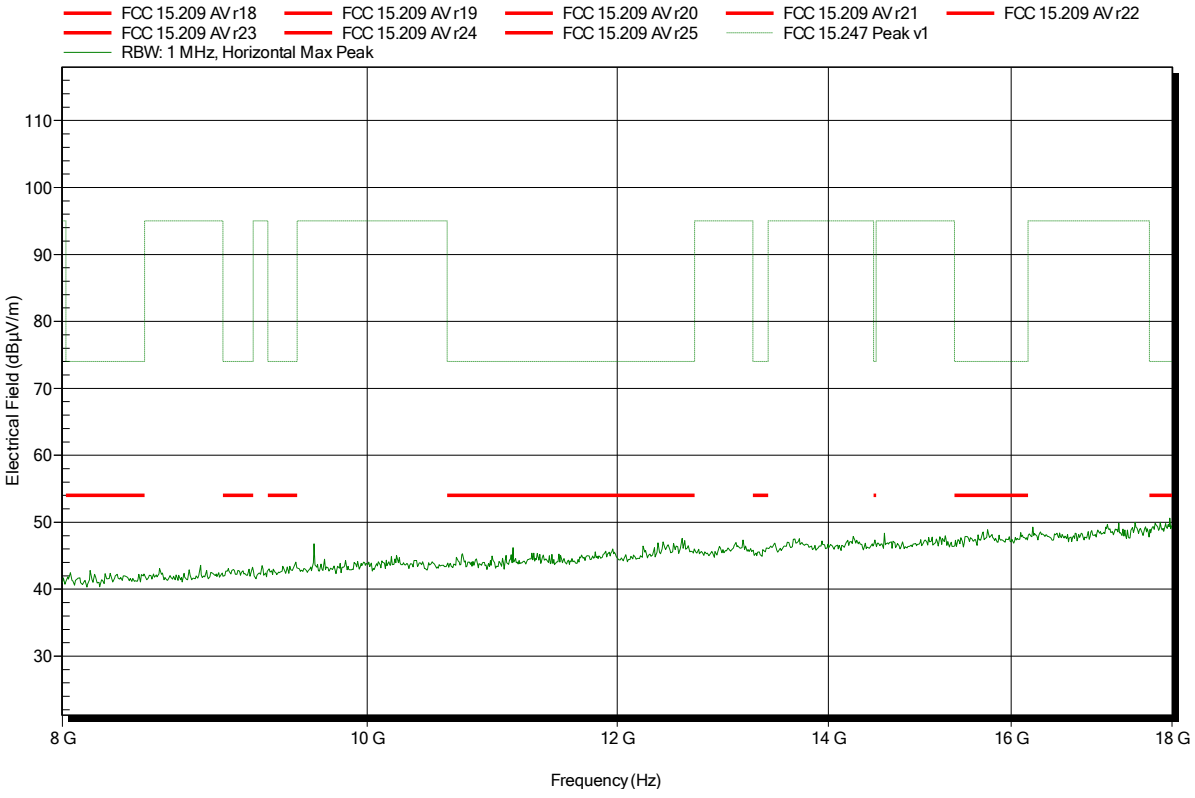

Spurious emissions according to FCC part 15 Subpart C § 15.247

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Applicant:	Atmel Automotive GmbH
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Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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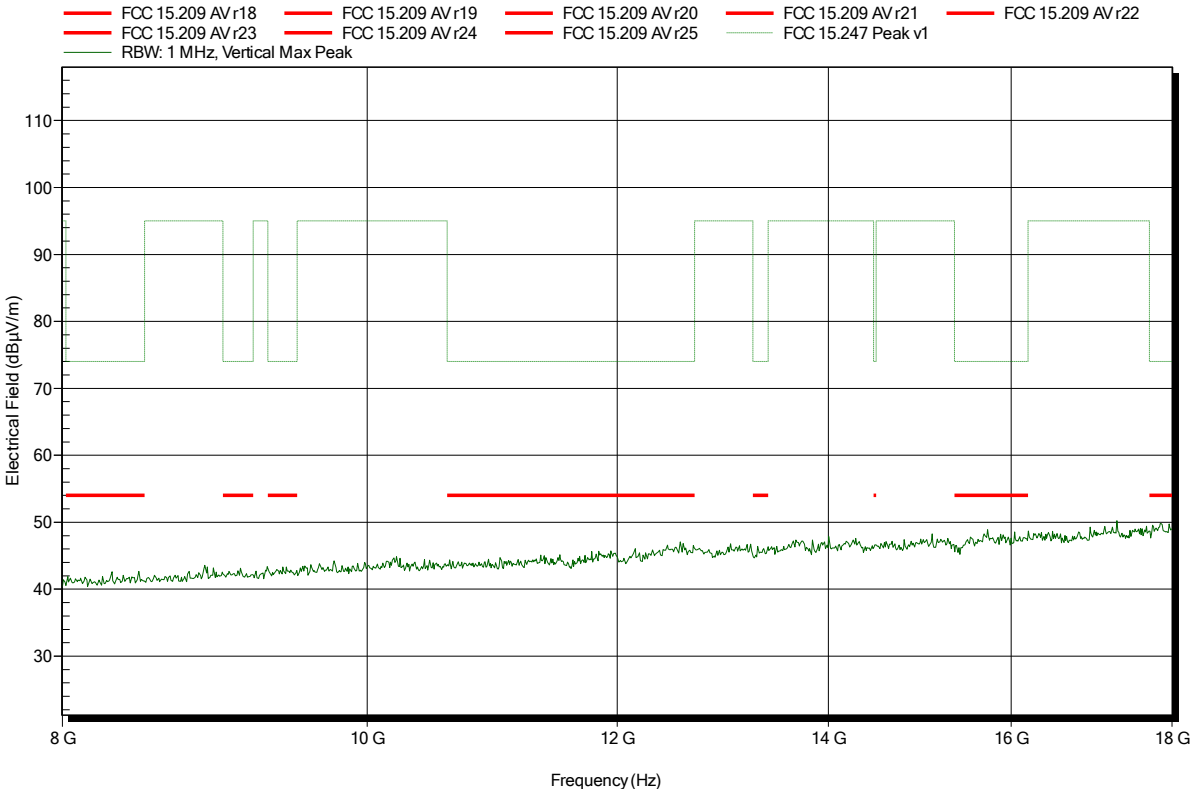

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Applicant:	Atmel Automotive GmbH
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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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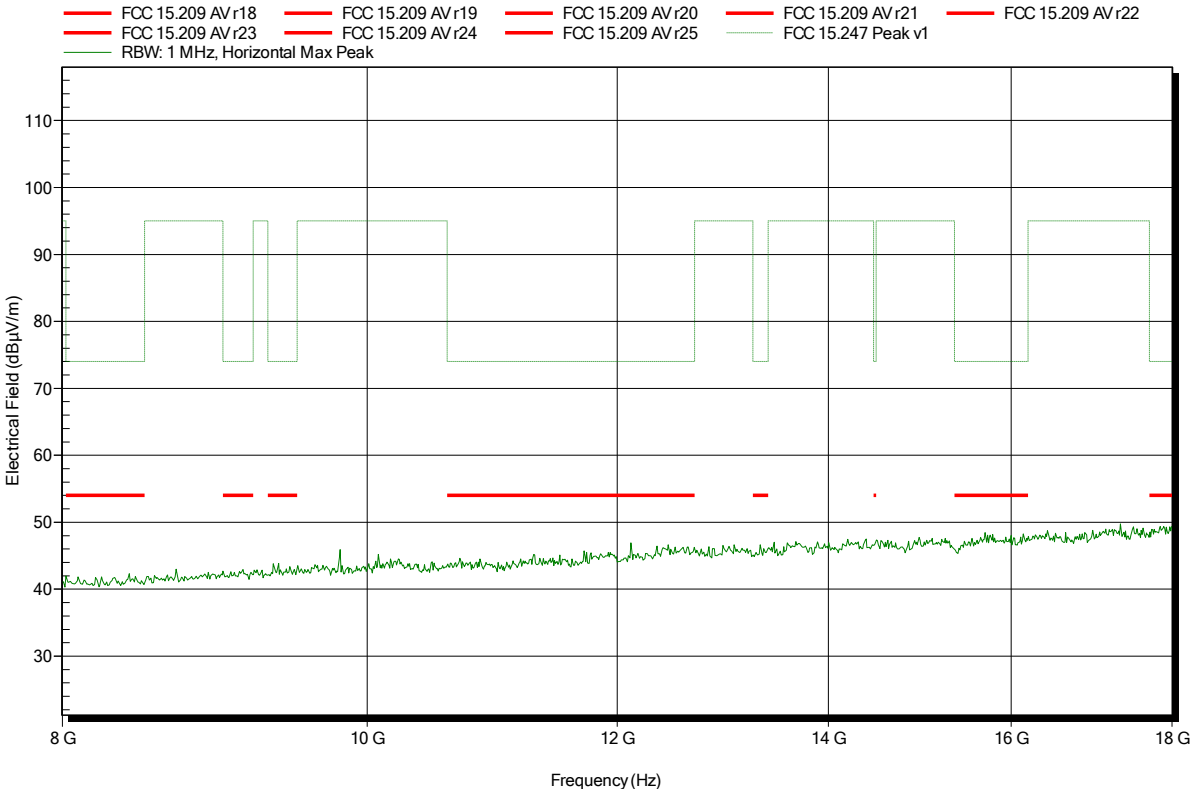

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Applicant:	Atmel Automotive GmbH
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Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A2 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A2

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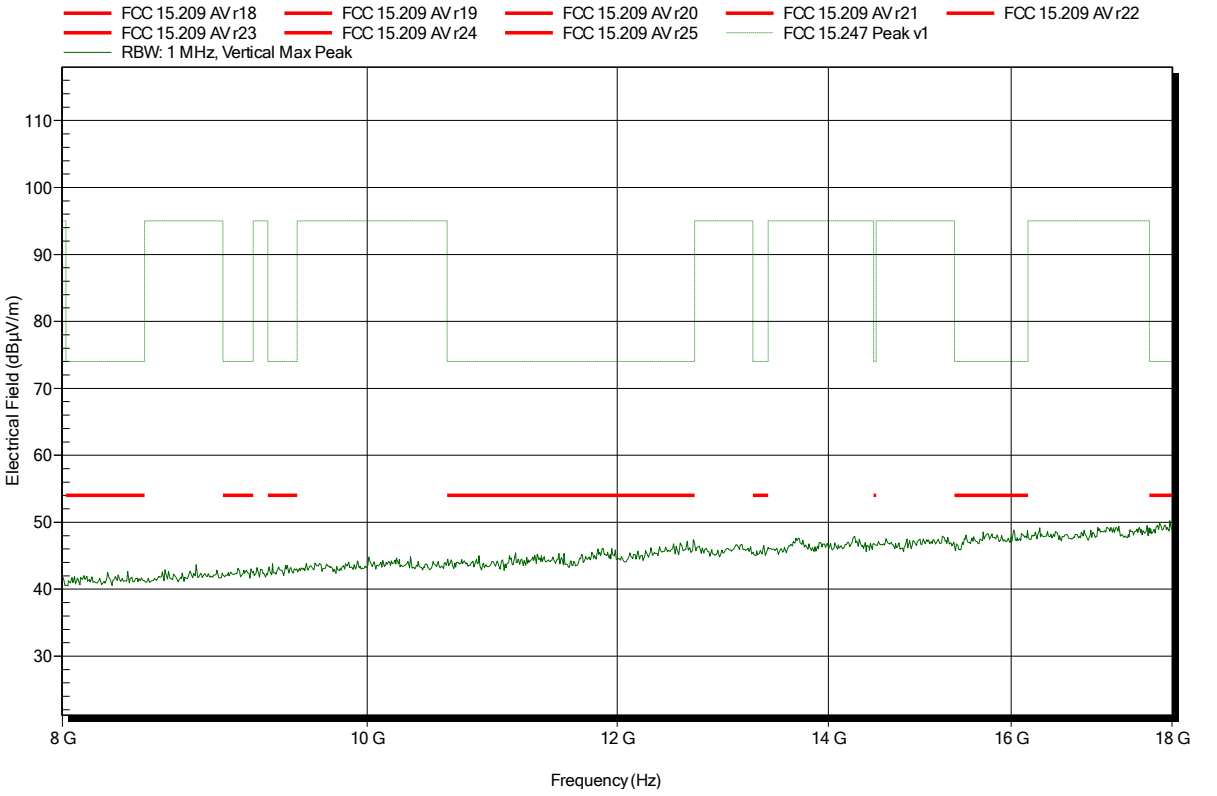

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EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
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Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A2 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A2

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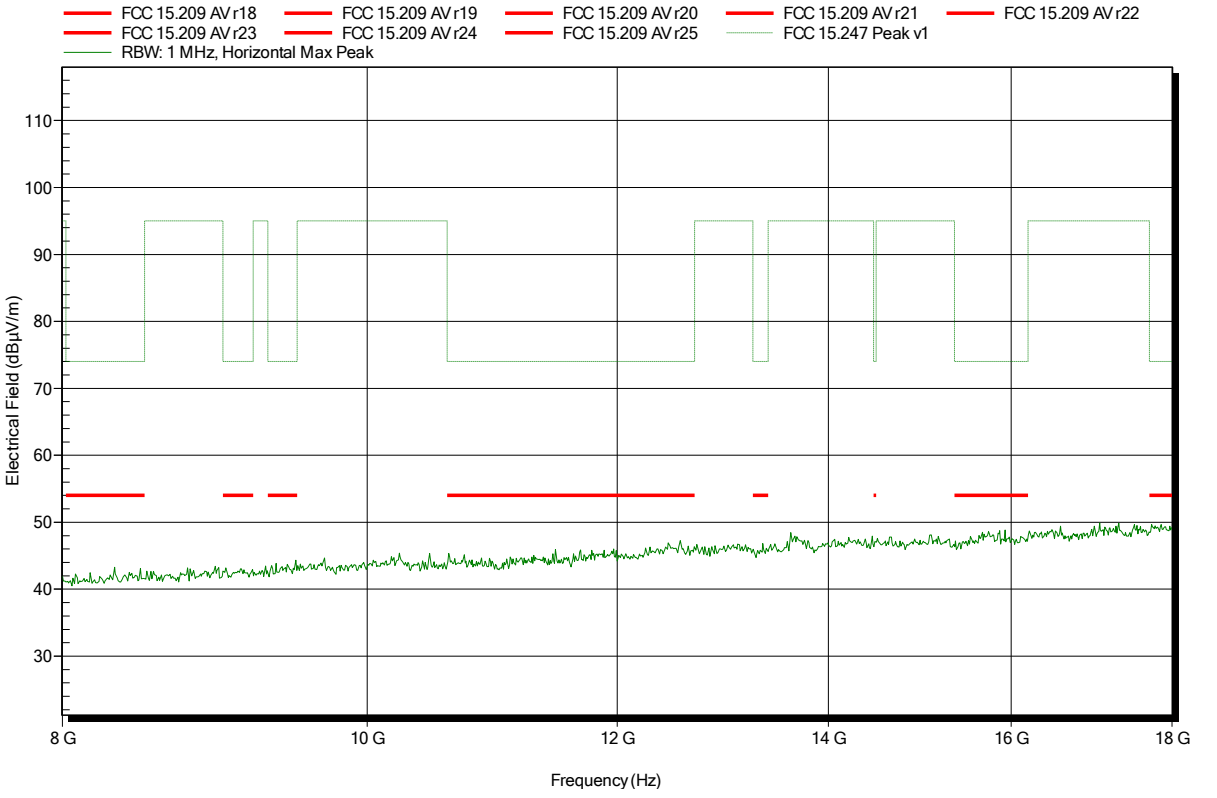

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EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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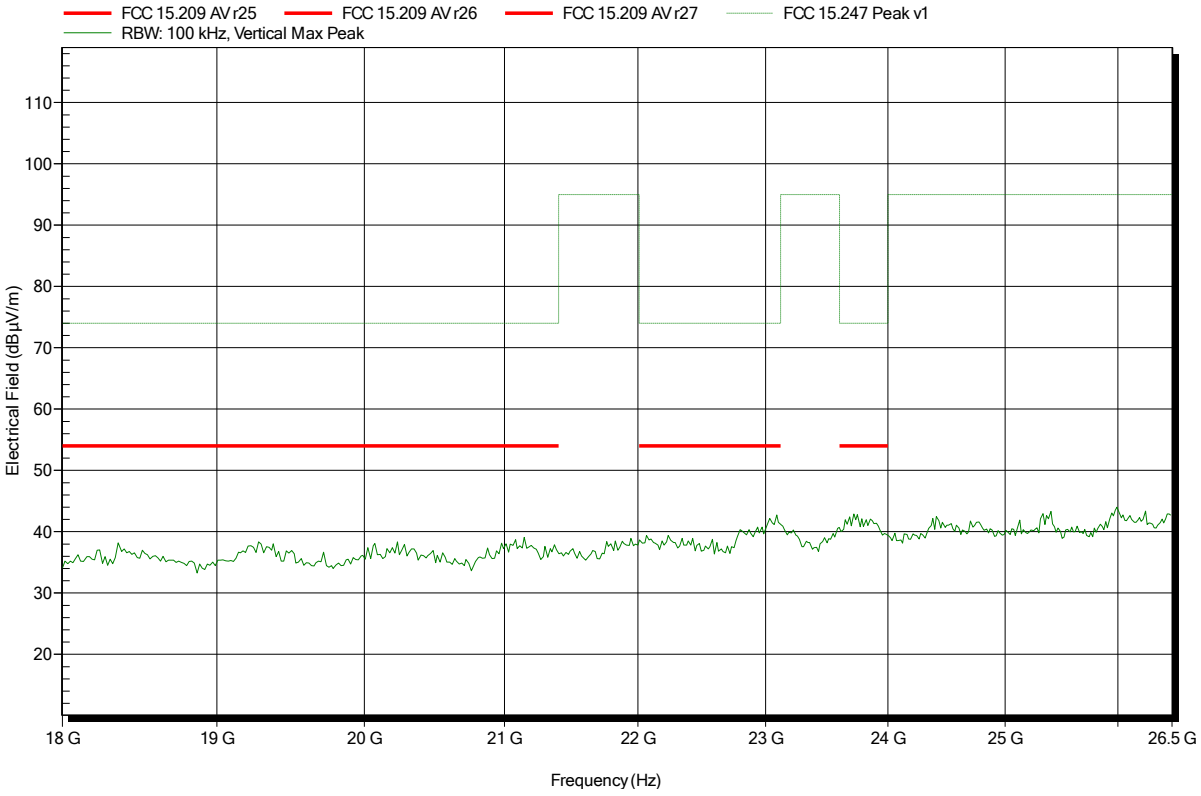

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Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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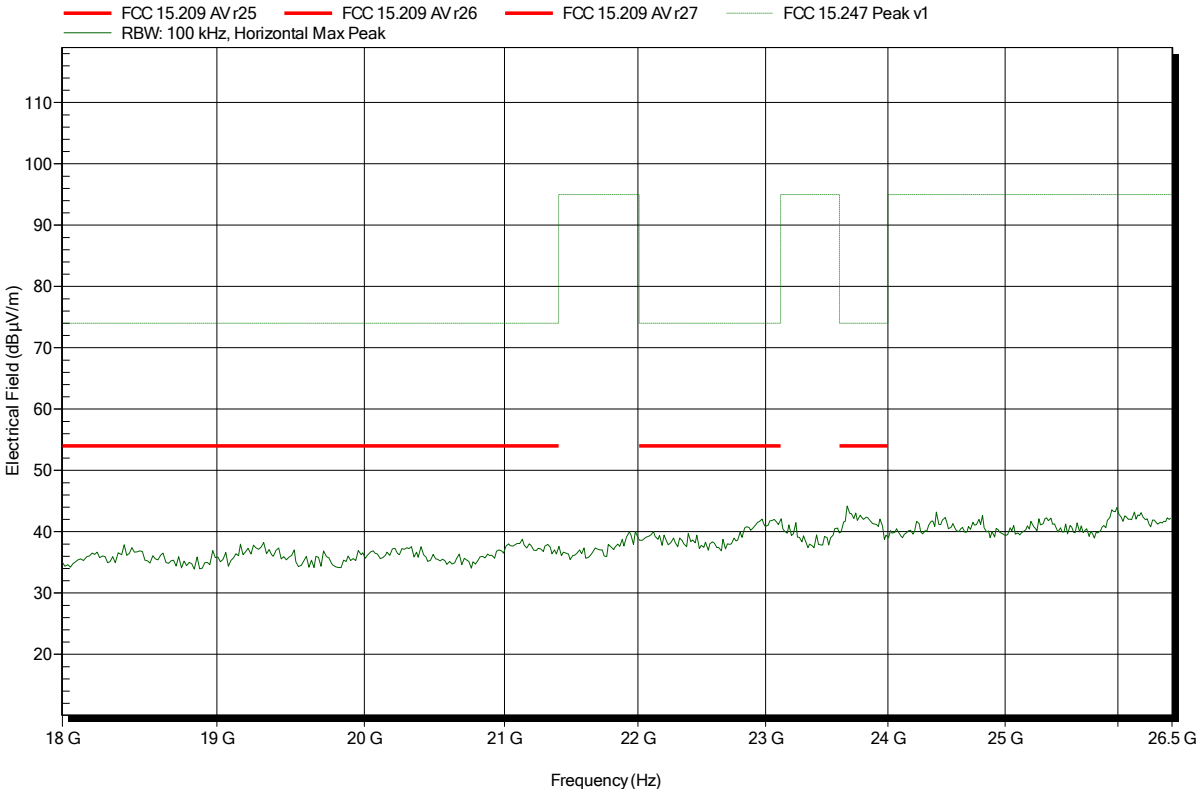

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Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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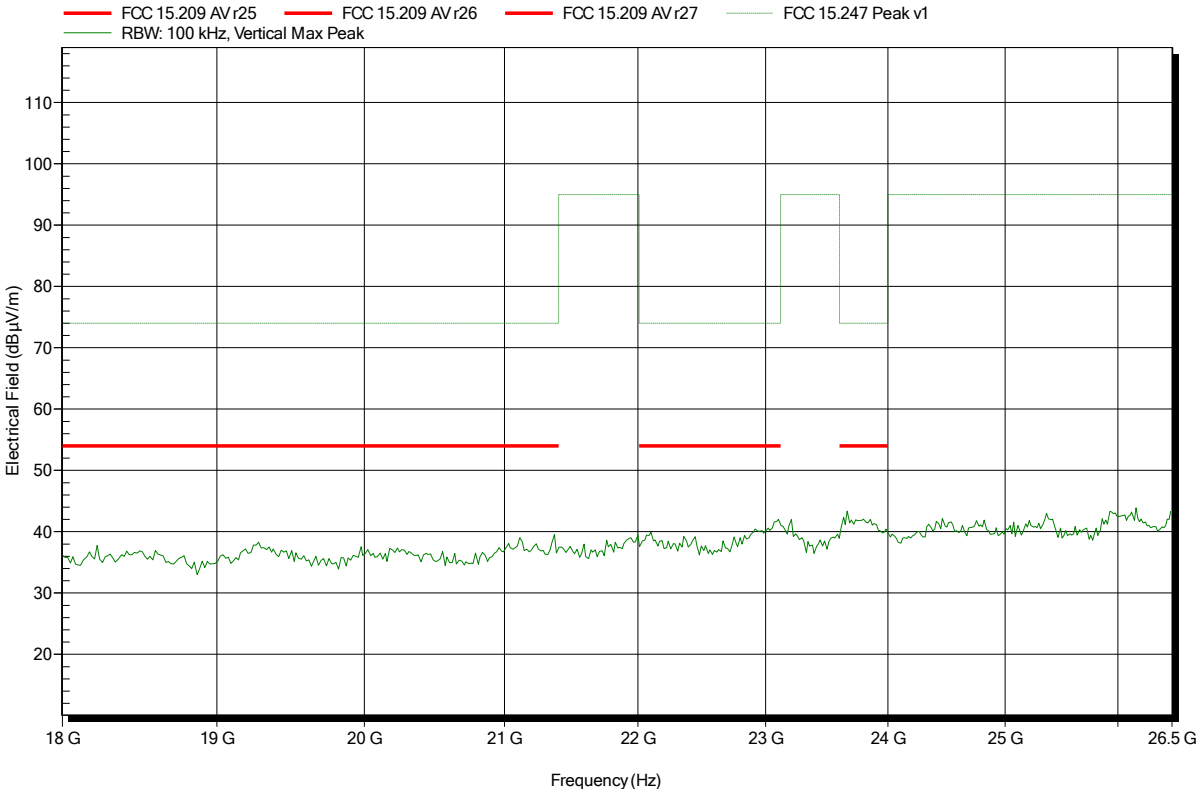

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Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Stub" ant.: A2
Test Date:	2015-05-19
Note:	EUT vertical, ant.: A2

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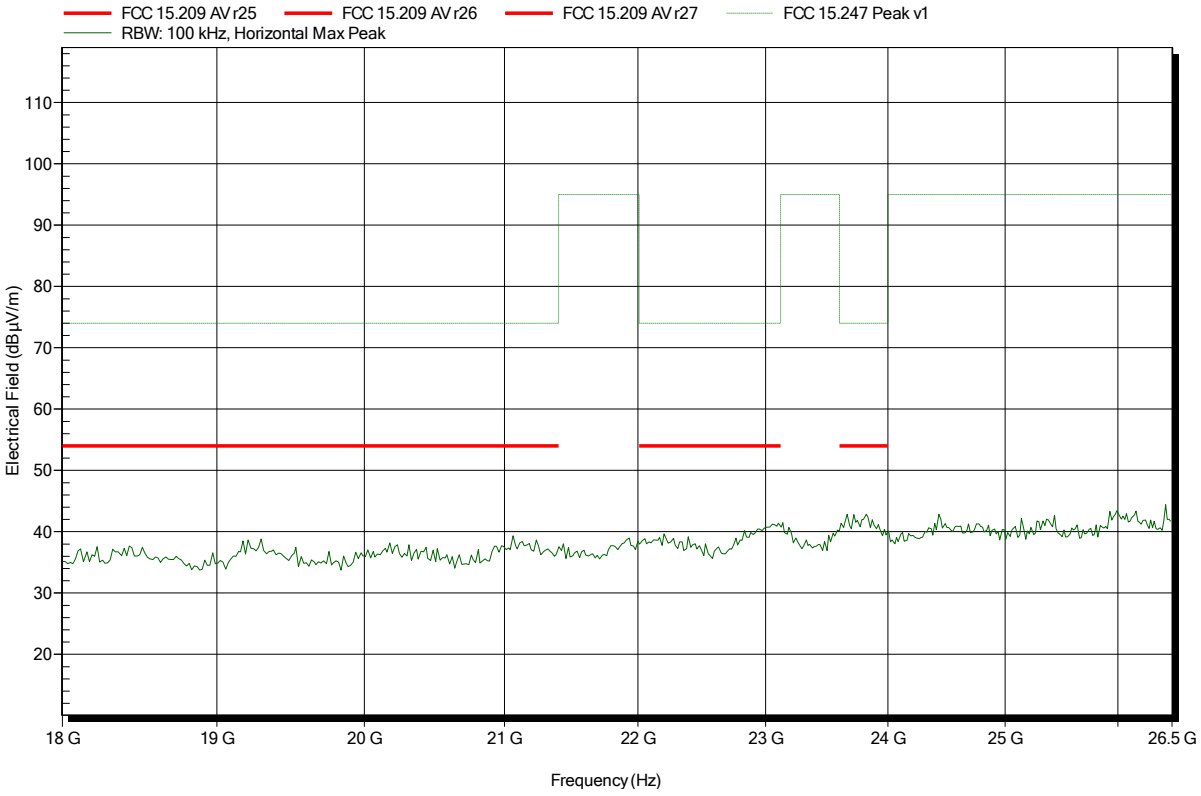

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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A2 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A2

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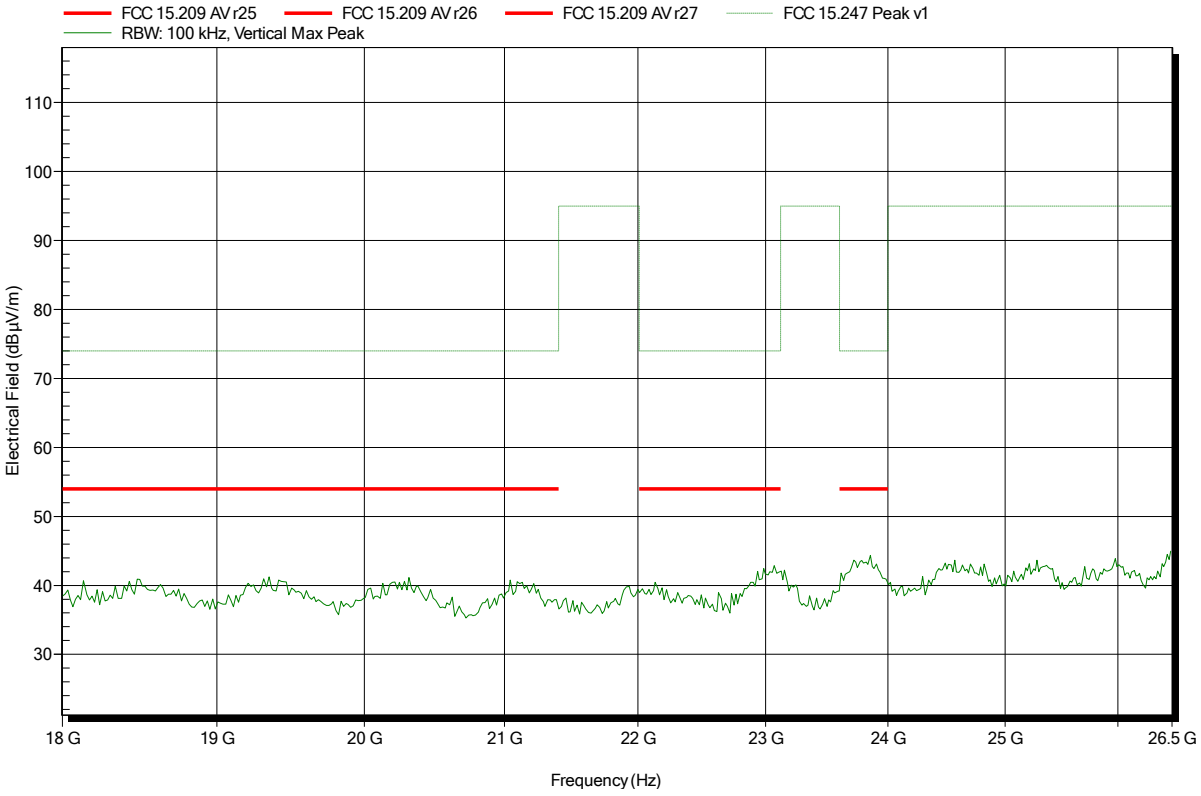

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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Stub" ant.: A2 (-9)
Test Date:	2015-05-20
Note:	EUT vertical an.: A2

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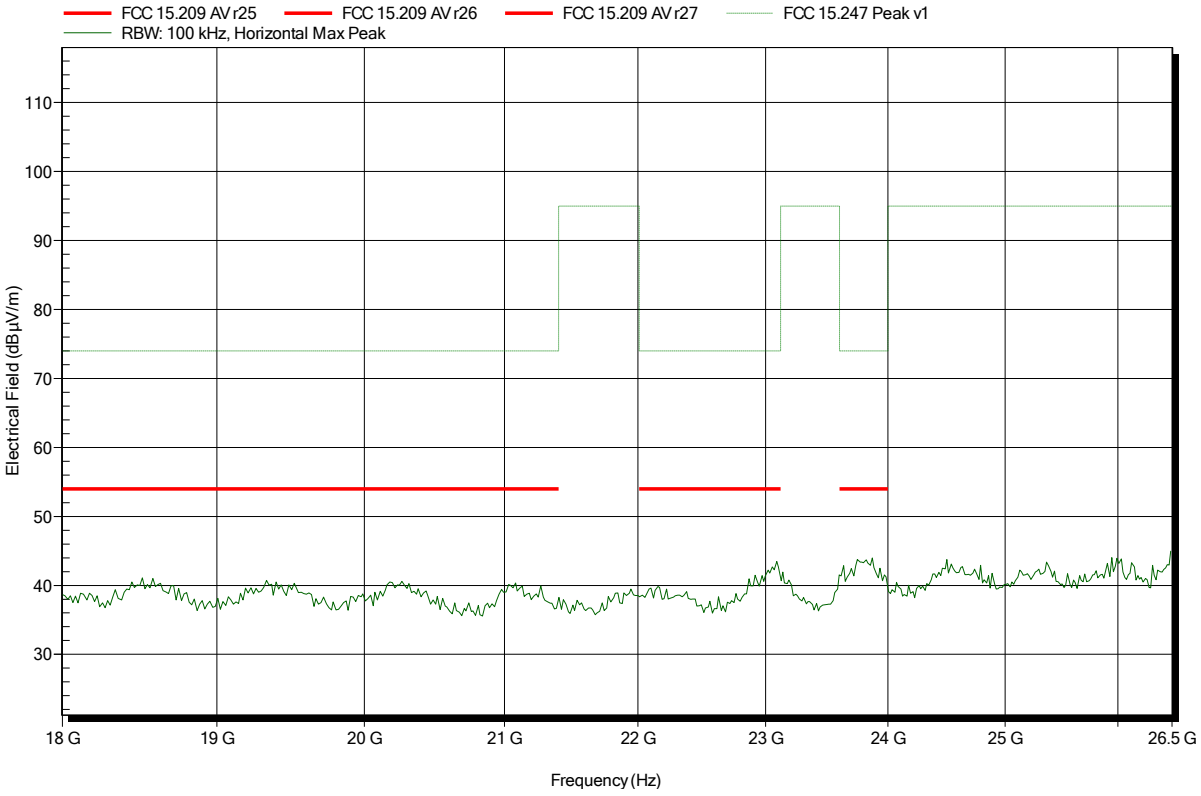

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Project number: G0M-1505-4730

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EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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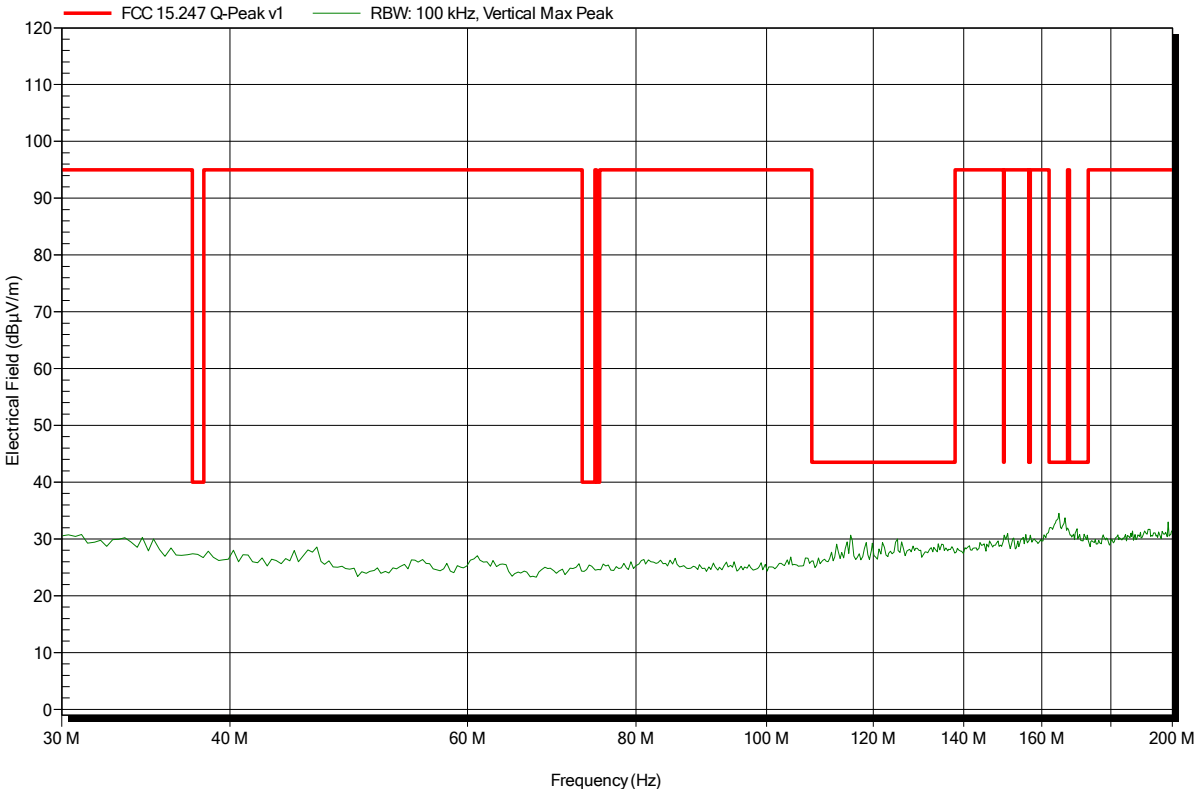

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Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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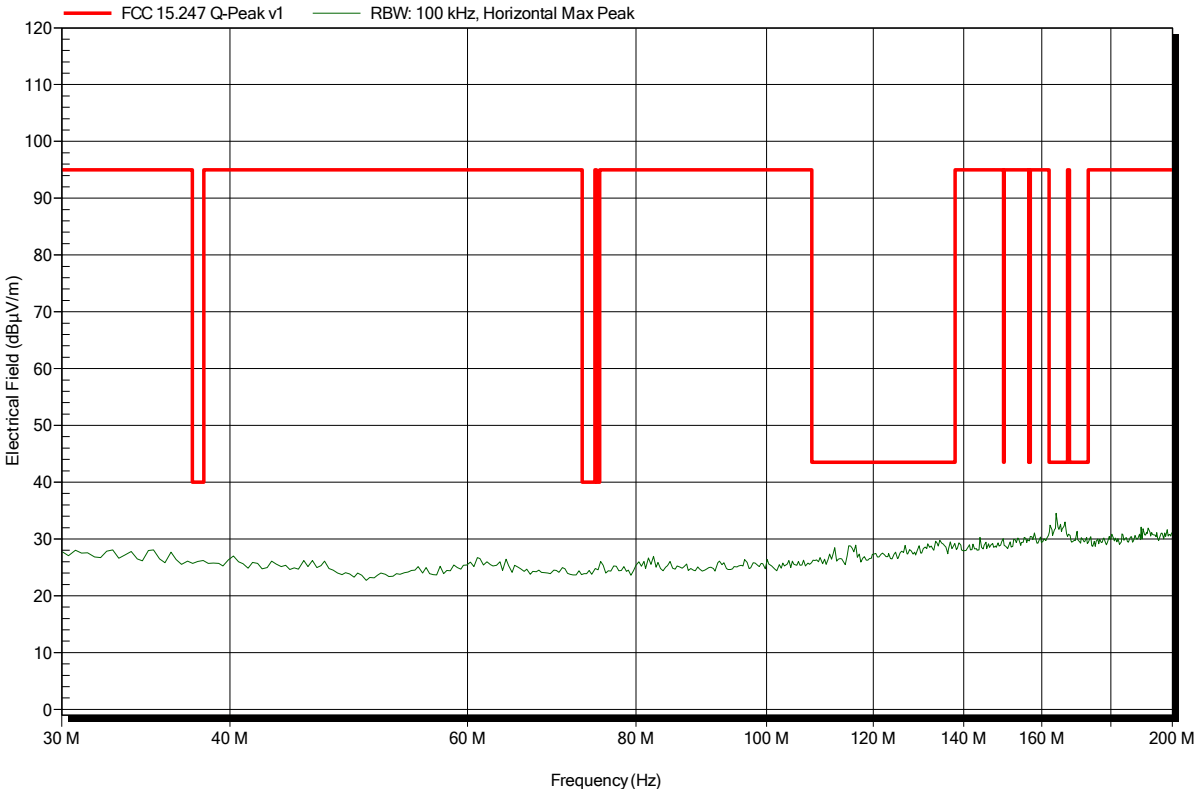

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Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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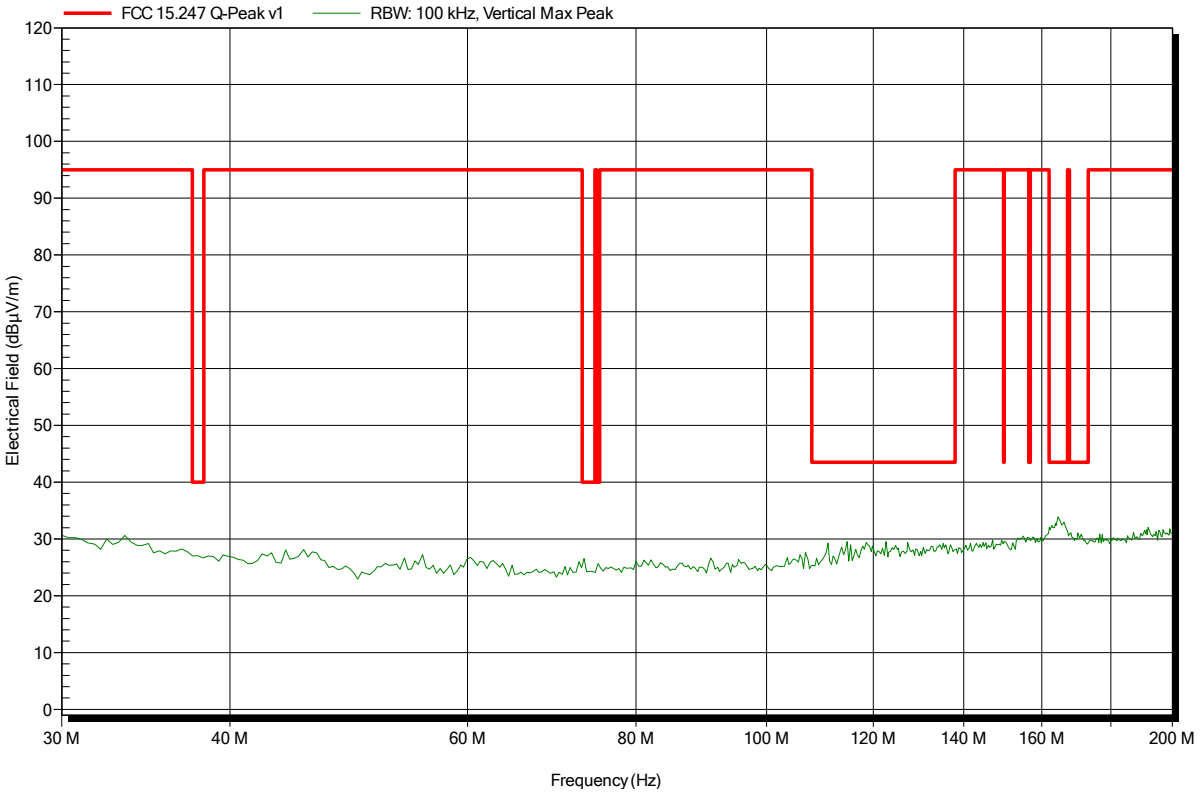

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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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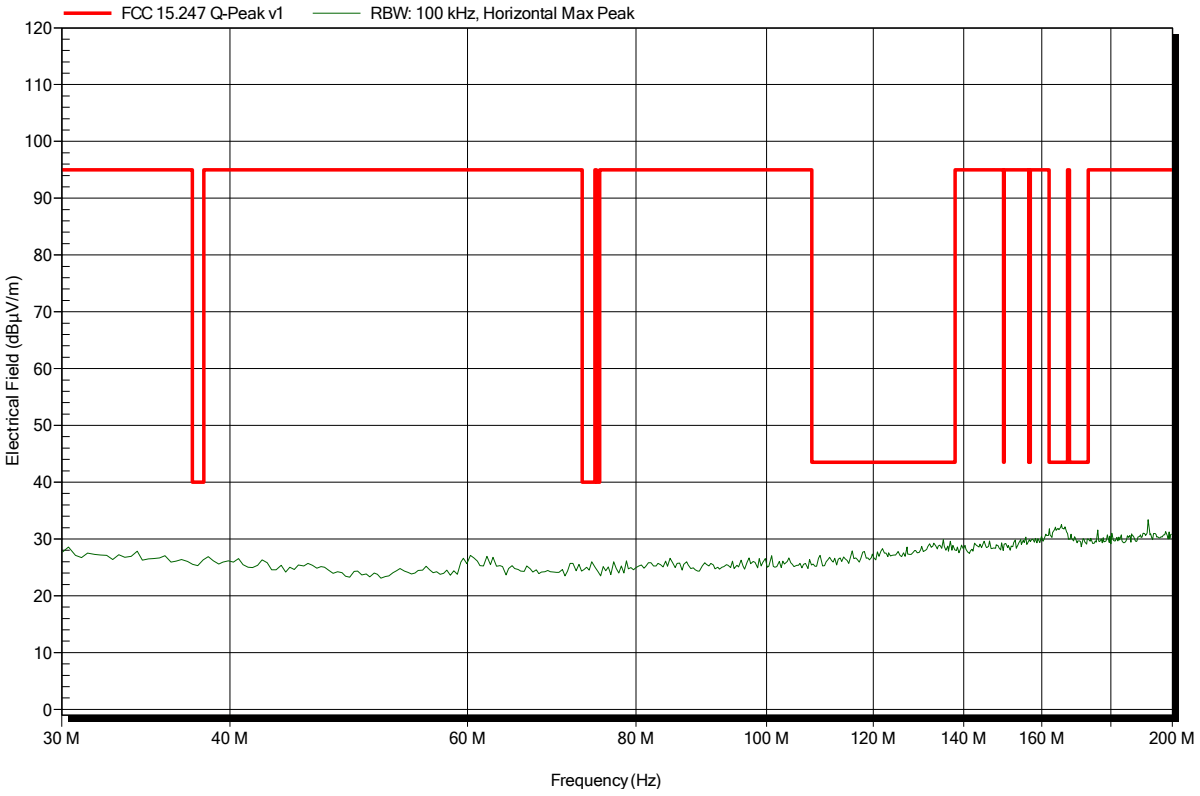

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Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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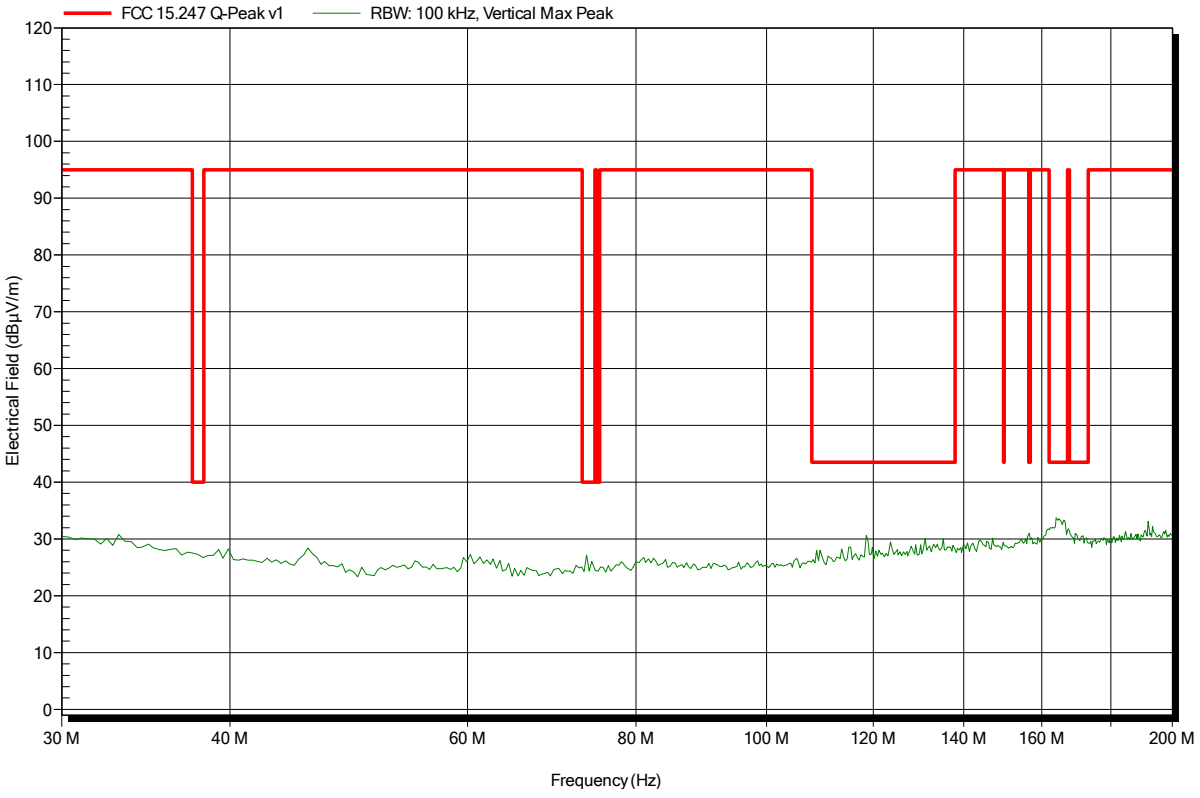

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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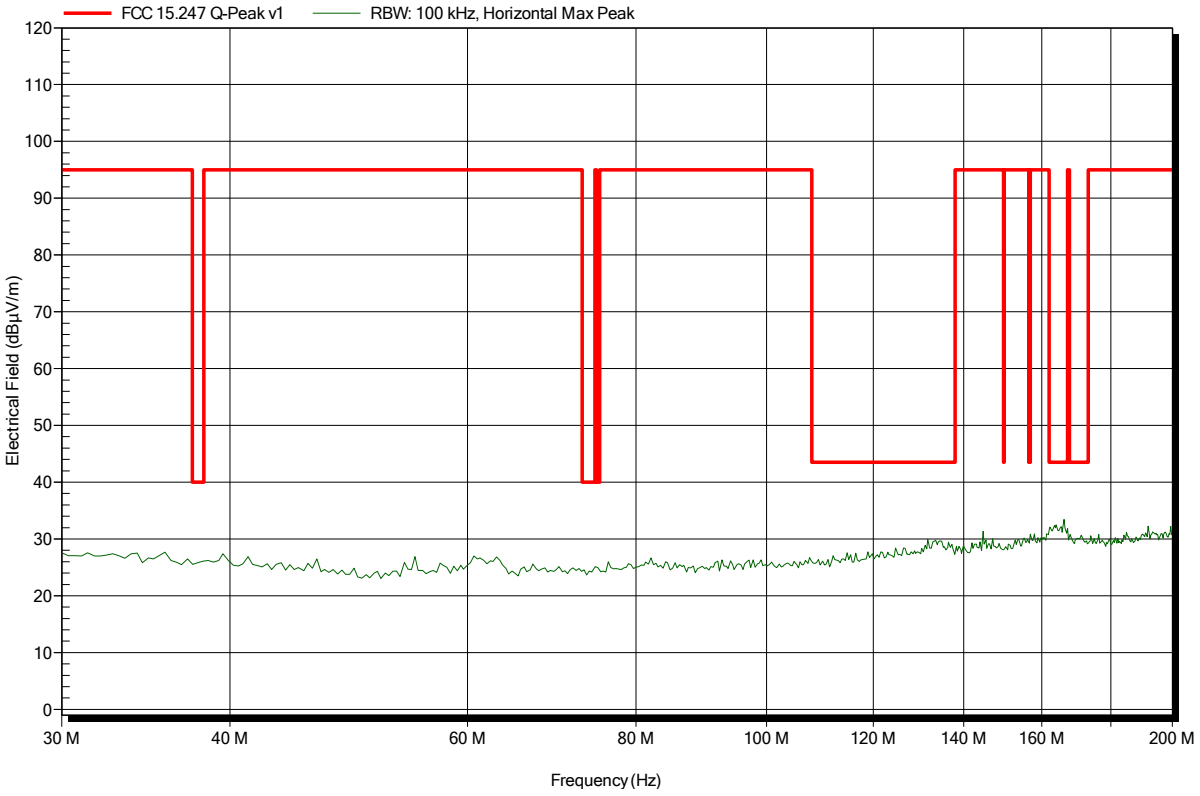

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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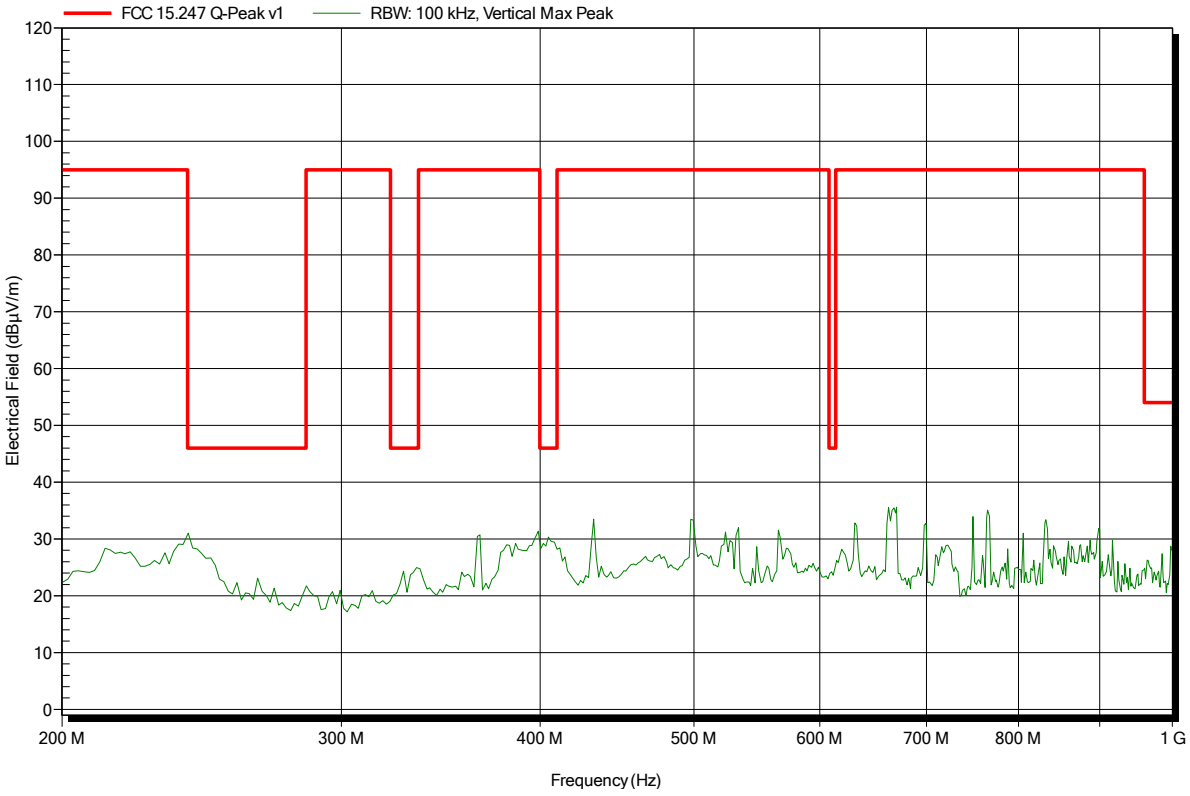

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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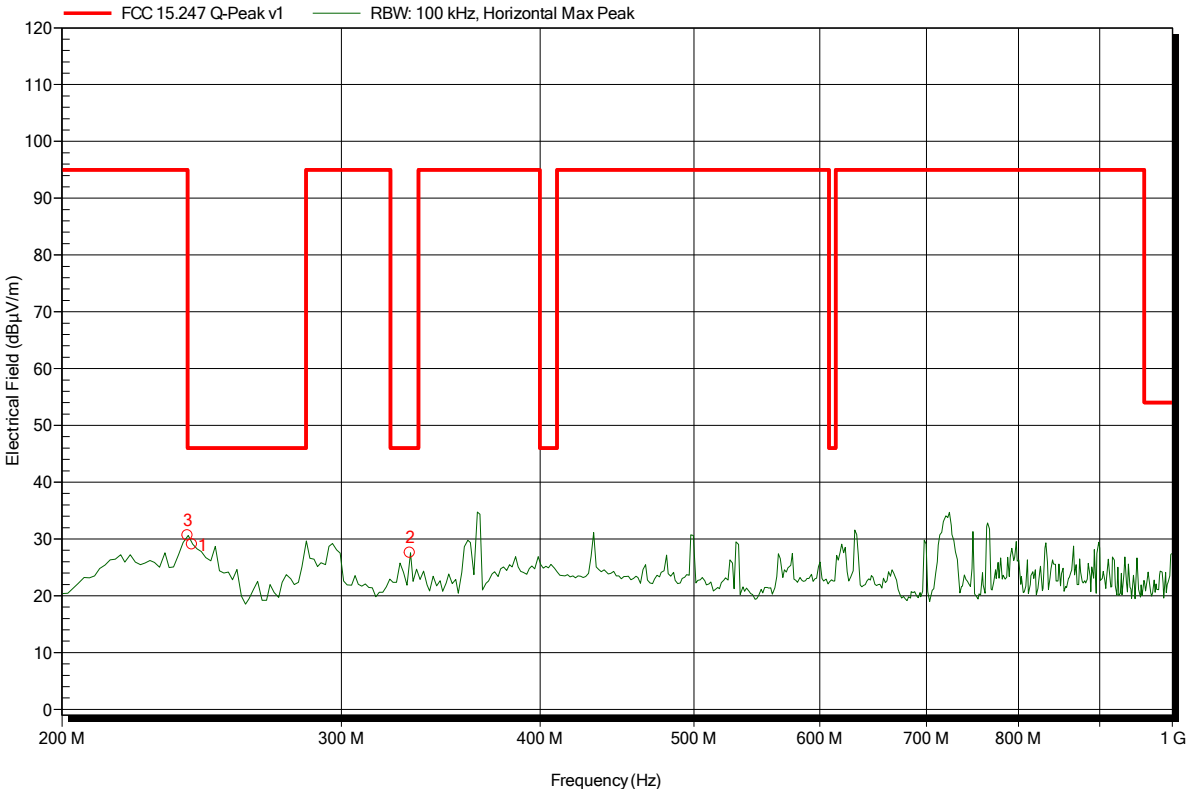

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
240 MHz	30.62 dBµV/m	46 dBµV/m	-15.38 dB	Pass
241.6 MHz	29.06 dBµV/m	46 dBµV/m	-16.94 dB	Pass
331.2 MHz	27.56 dBµV/m	46 dBµV/m	-18.44 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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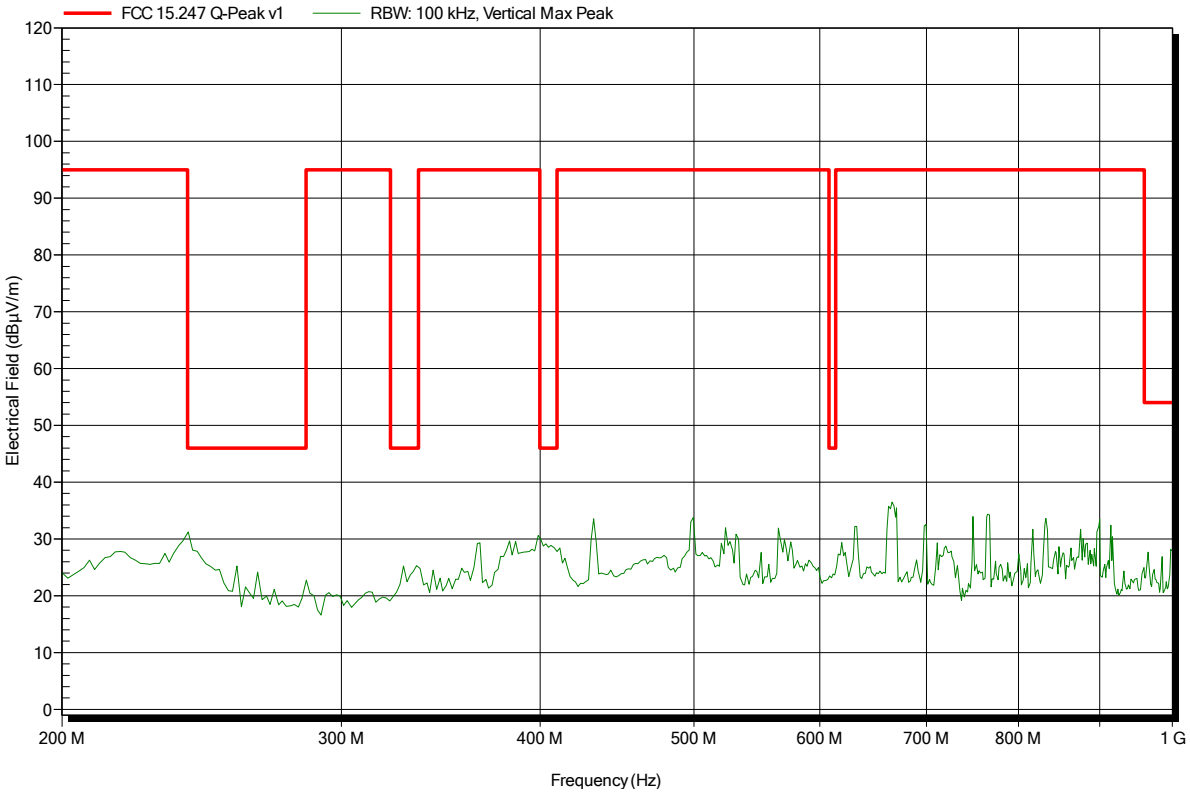

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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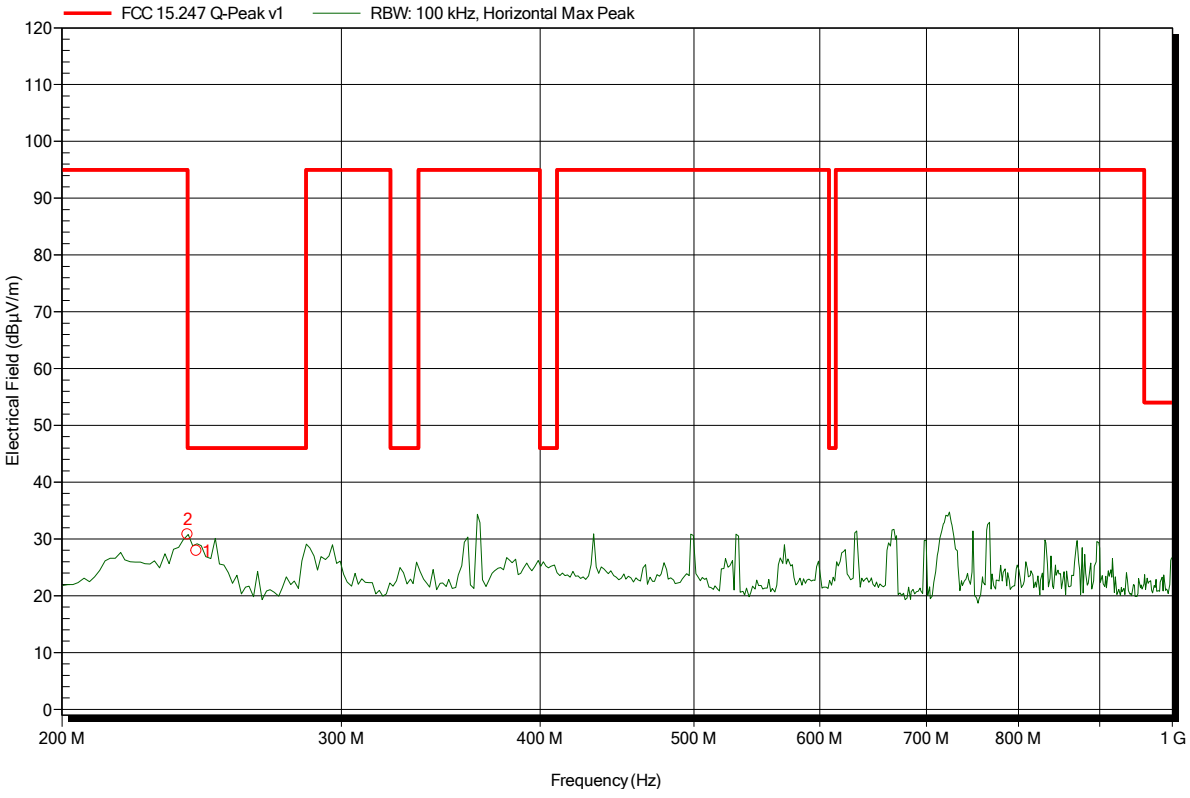

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
240 MHz	30.78 dBµV/m	46 dBµV/m	-15.22 dB	Pass
243.2 MHz	27.91 dBµV/m	46 dBµV/m	-18.09 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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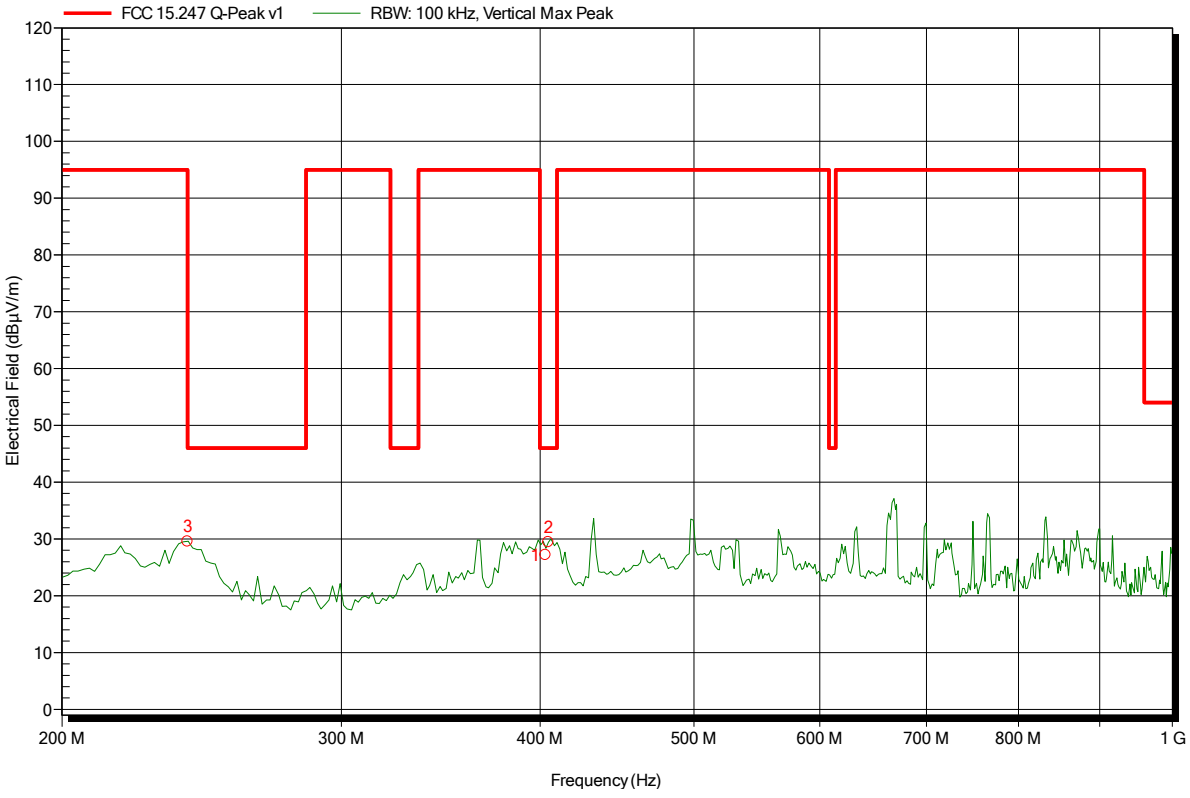

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
240 MHz	29.56 dBµV/m	46 dBµV/m	-16.44 dB	Pass
403.2 MHz	27.15 dBµV/m	46 dBµV/m	-18.85 dB	Pass
404.8 MHz	29.41 dBµV/m	46 dBµV/m	-16.59 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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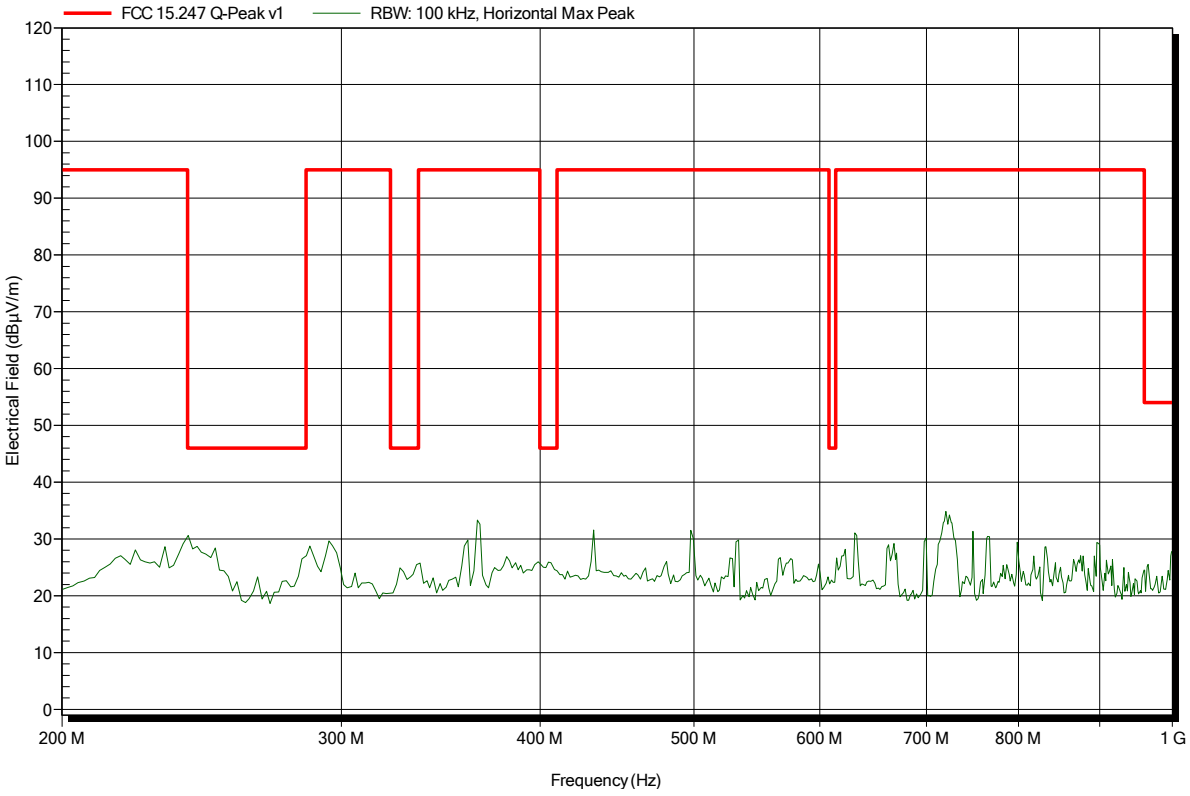

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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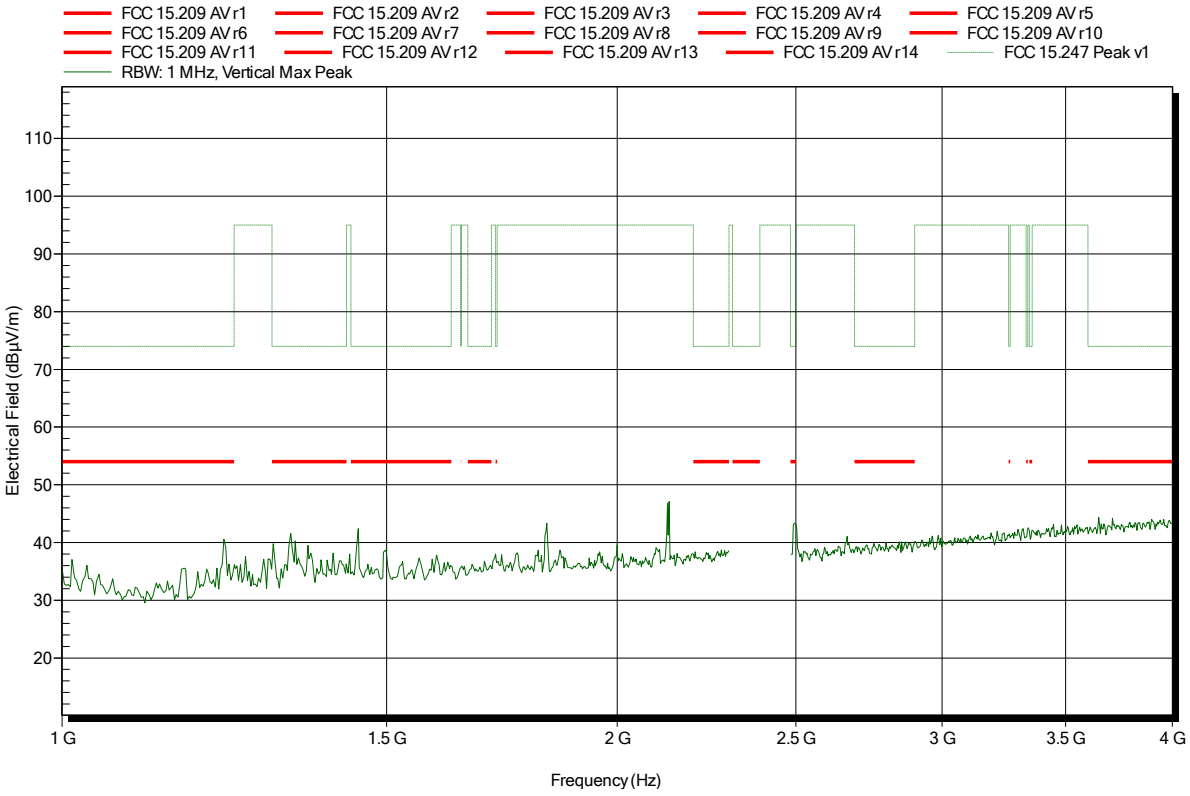

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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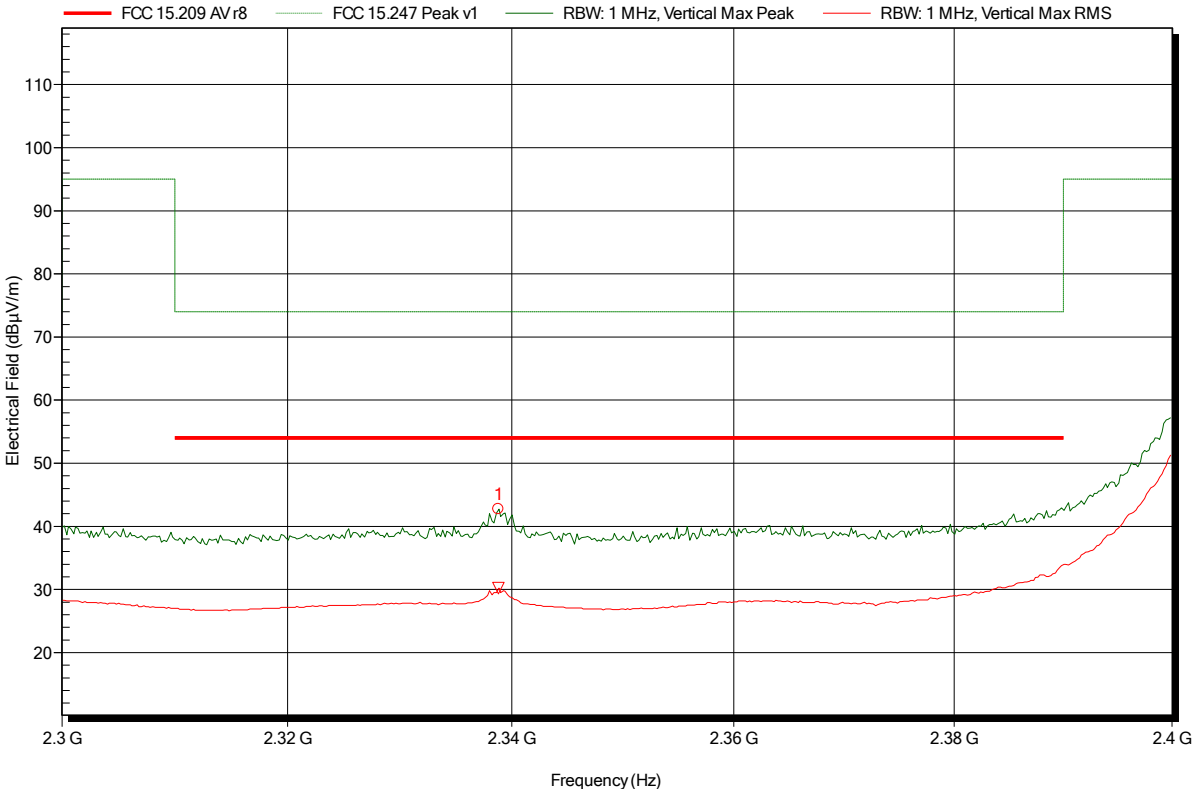

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.339 GHz	42.71 dBµV/m	74 dBµV/m	-31.29 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.339 GHz	30.2 dBµV/m	54 dBµV/m	-23.8 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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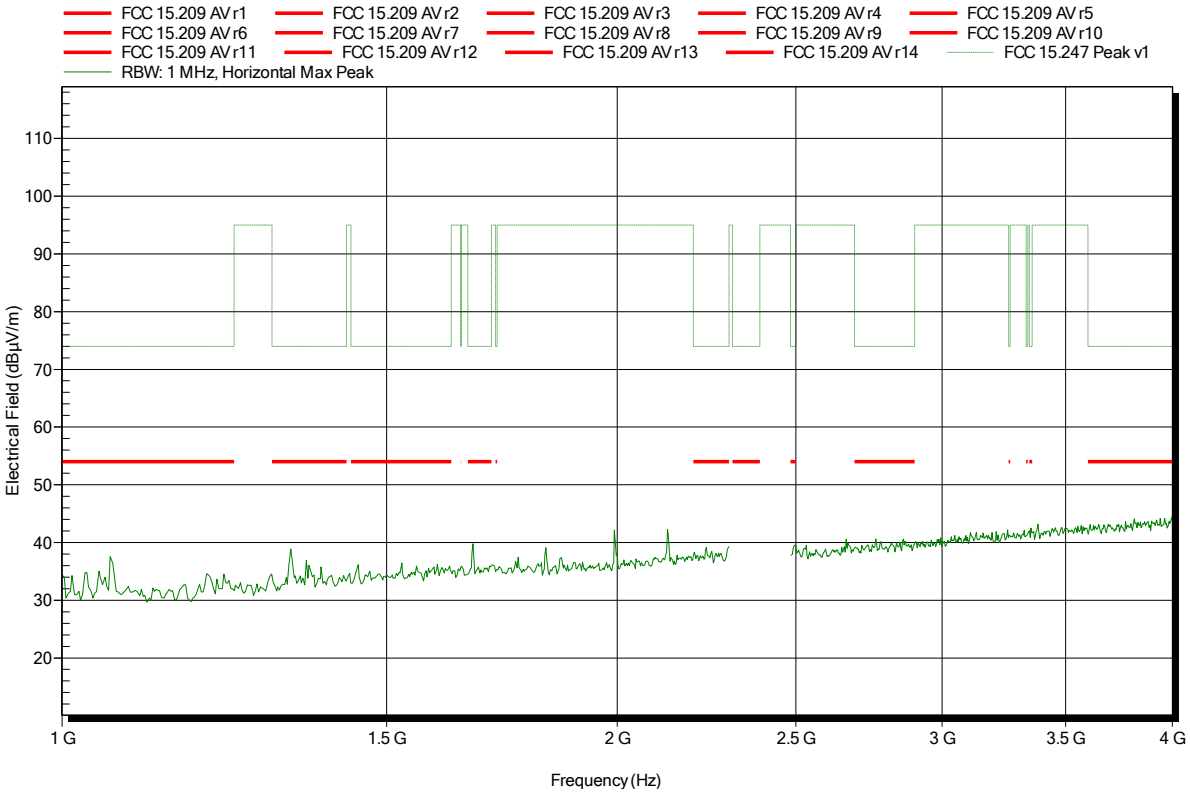

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal; lower bandedge

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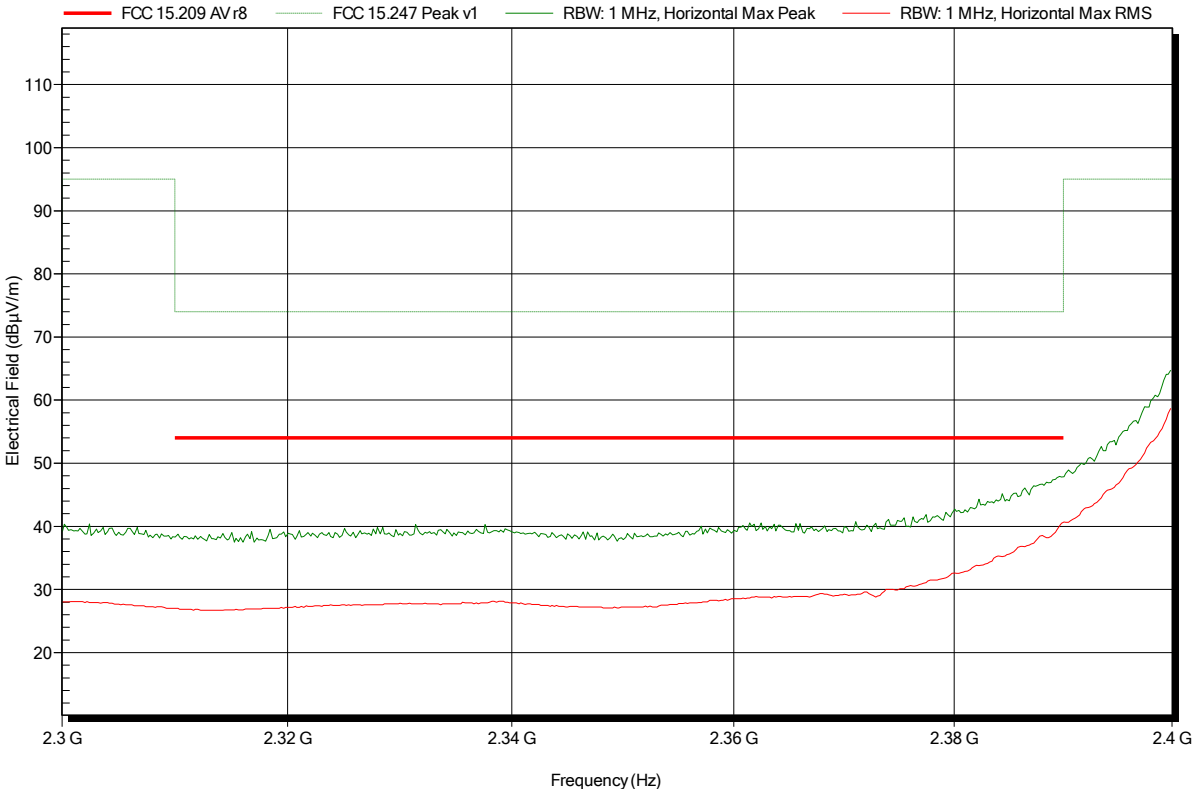

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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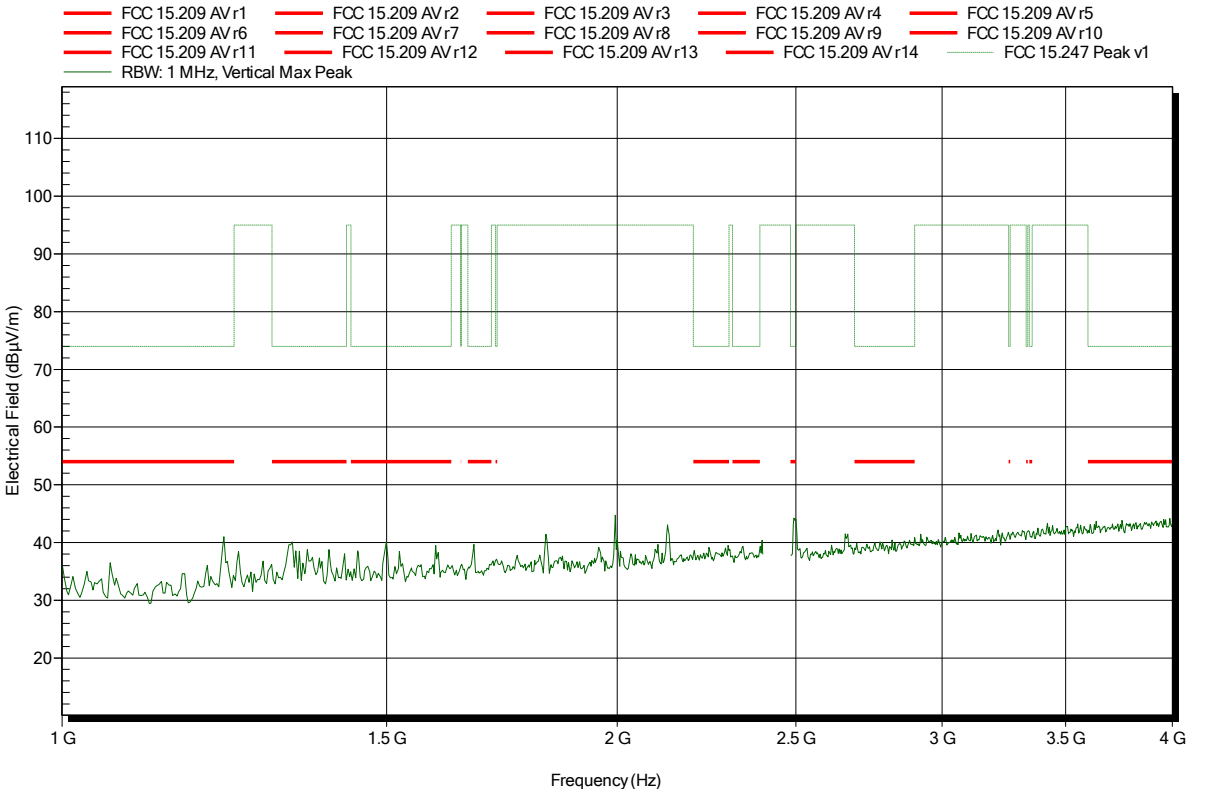

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A1 -90° horizontal

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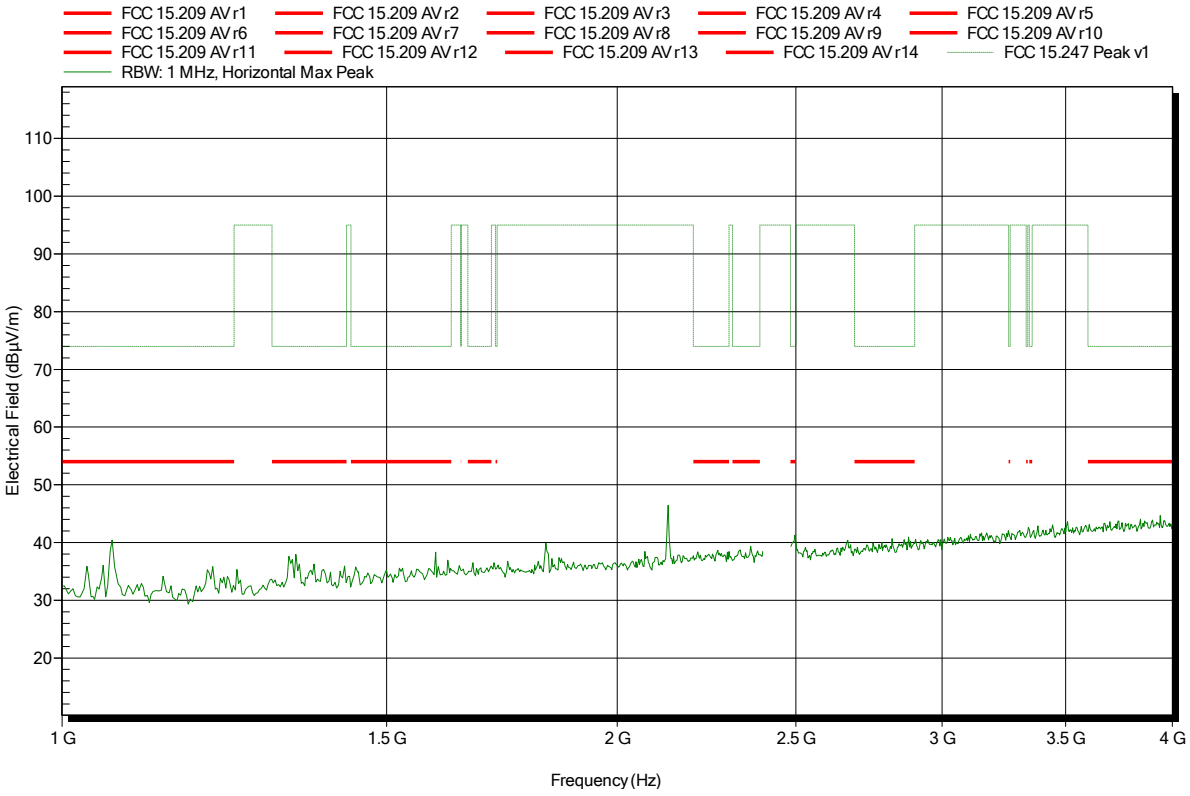

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A1 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A1 -90° horizontal

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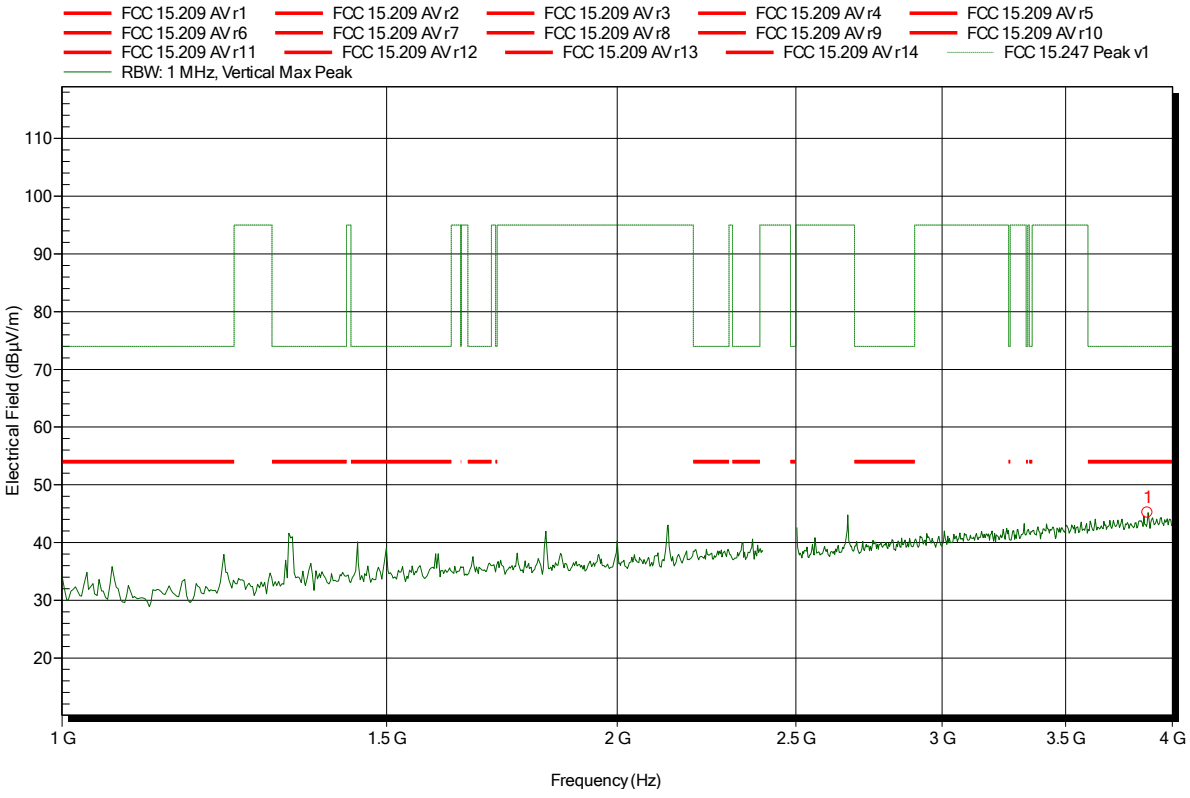

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.877 GHz	45.17 dBµV/m	74 dBµV/m	-28.83 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A1 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A1 -90° horizontal; higher bandedge

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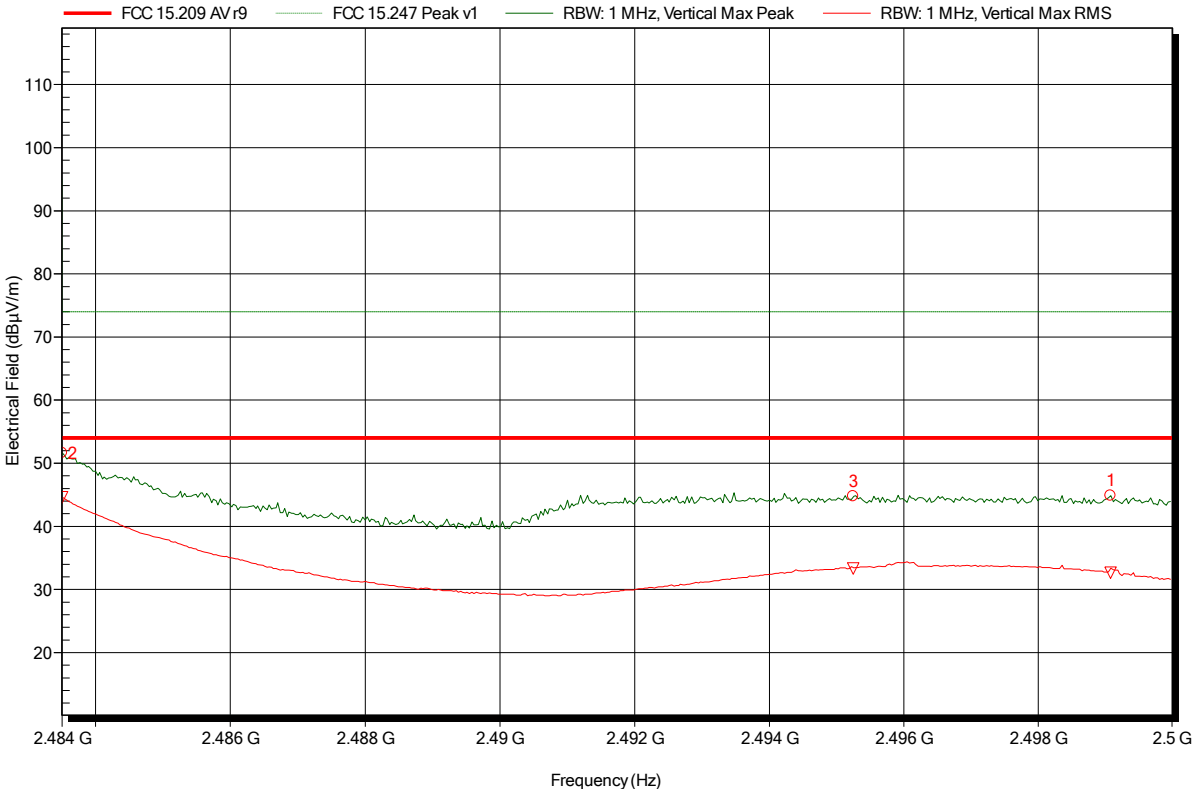

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.484 GHz	51.63 dBµV/m	74 dBµV/m	-22.37 dB	Pass
2.495 GHz	44.74 dBµV/m	74 dBµV/m	-29.26 dB	Pass
2.499 GHz	44.84 dBµV/m	74 dBµV/m	-29.16 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.484 GHz	44.6 dBµV/m	54 dBµV/m	-9.4 dB	Pass
2.495 GHz	33.33 dBµV/m	54 dBµV/m	-20.67 dB	Pass
2.499 GHz	32.67 dBµV/m	54 dBµV/m	-21.33 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A1 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A1 -90° horizontal

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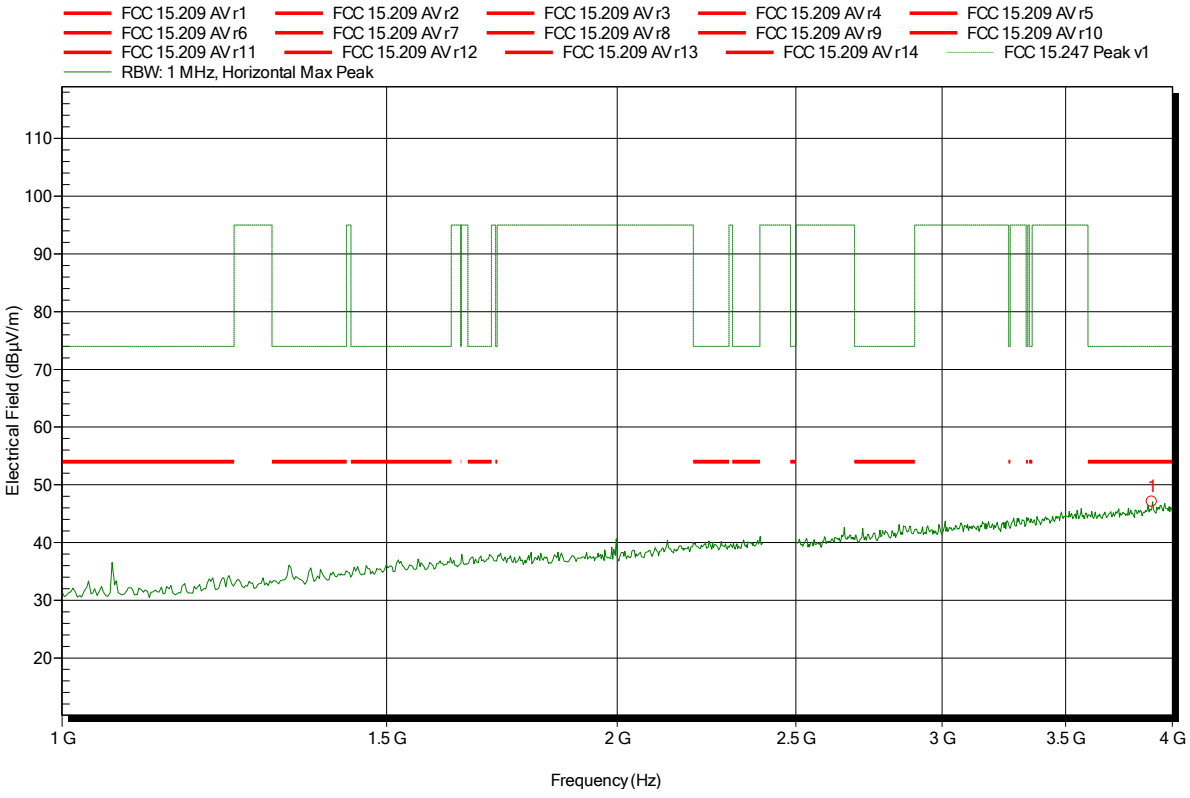

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.898 GHz	47.04 dBµV/m	74 dBµV/m	-26.96 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A1 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A1 -90° horizontal; higher bandedge

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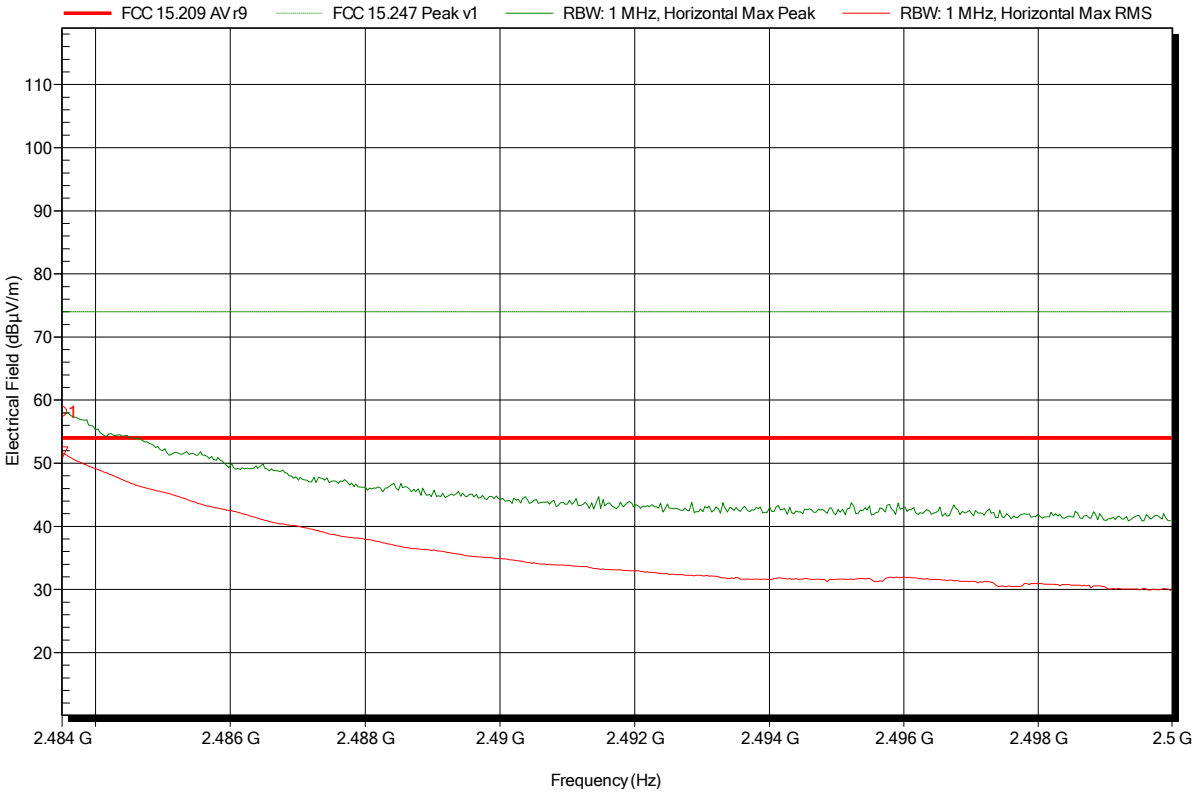

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.484 GHz	58.16 dBµV/m	74 dBµV/m	-15.84 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.484 GHz	51.69 dBµV/m	54 dBµV/m	-2.31 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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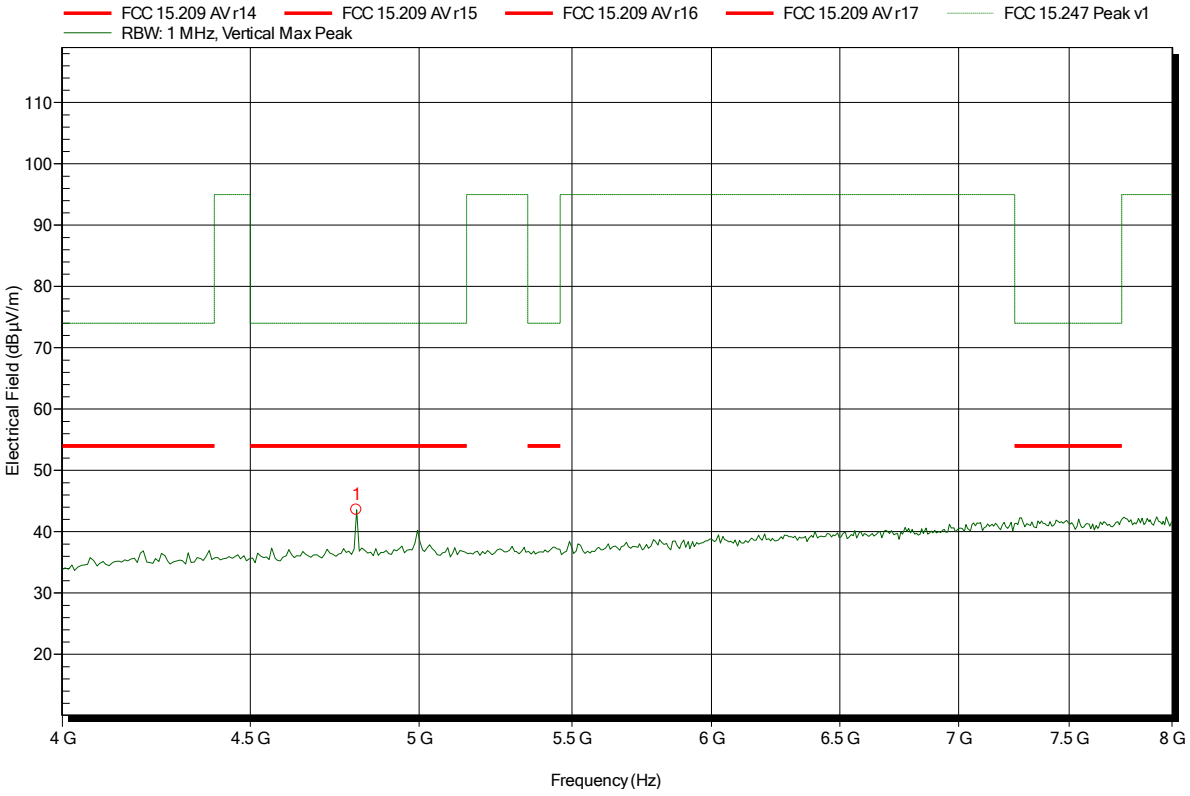

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.808 GHz	43.59 dBµV/m	74 dBµV/m	-30.41 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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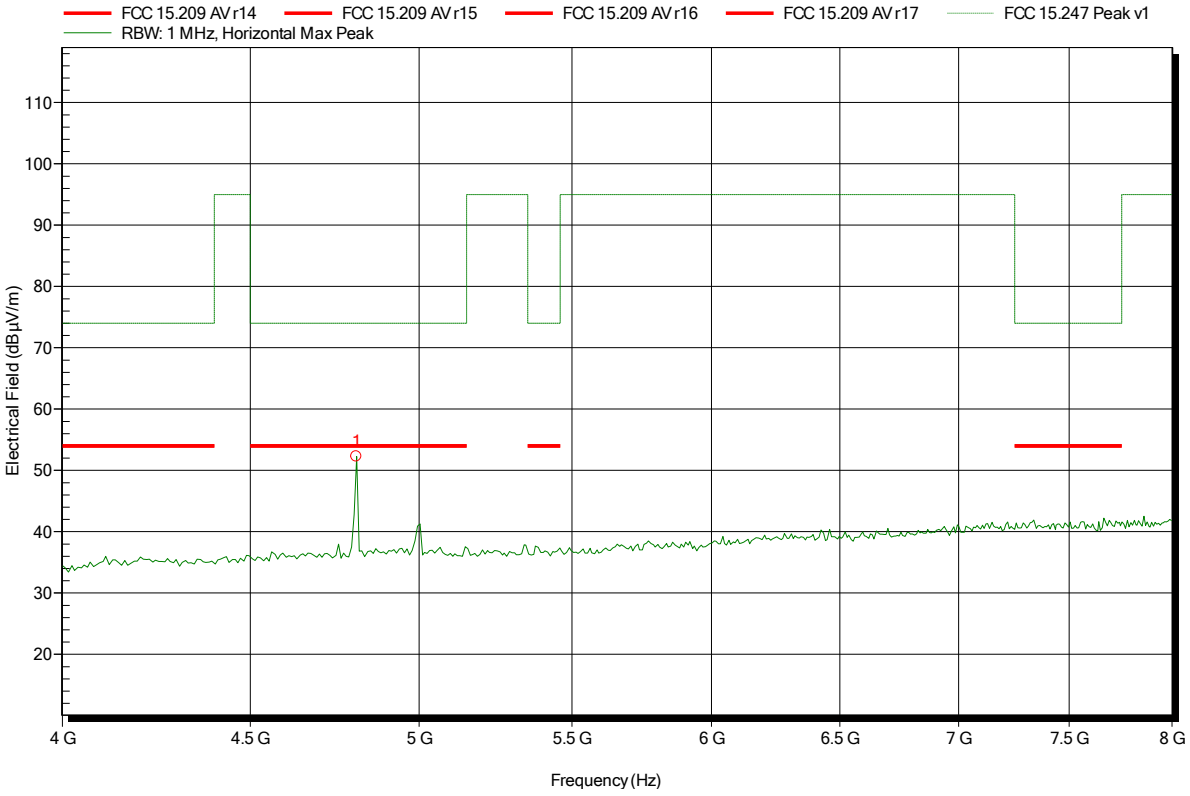

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.808 GHz	52.29 dBµV/m	74 dBµV/m	-21.71 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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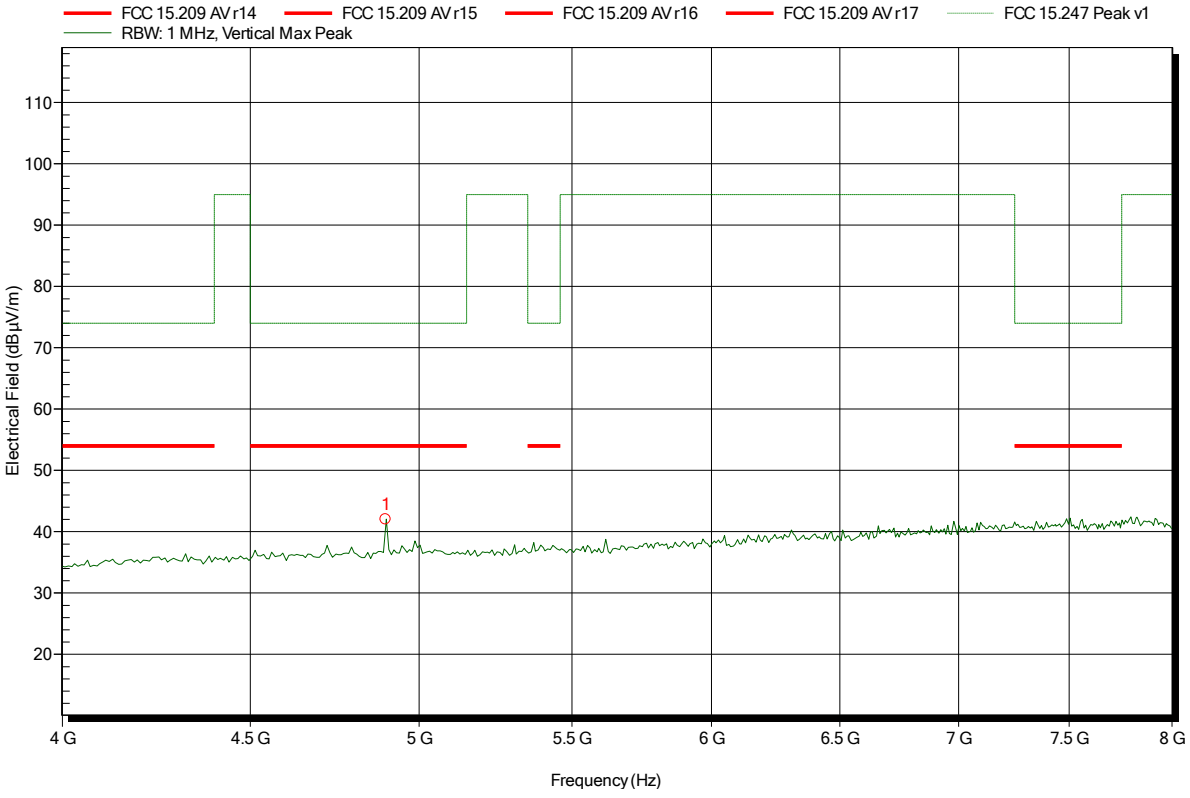

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.896 GHz	42.04 dBµV/m	74 dBµV/m	-31.96 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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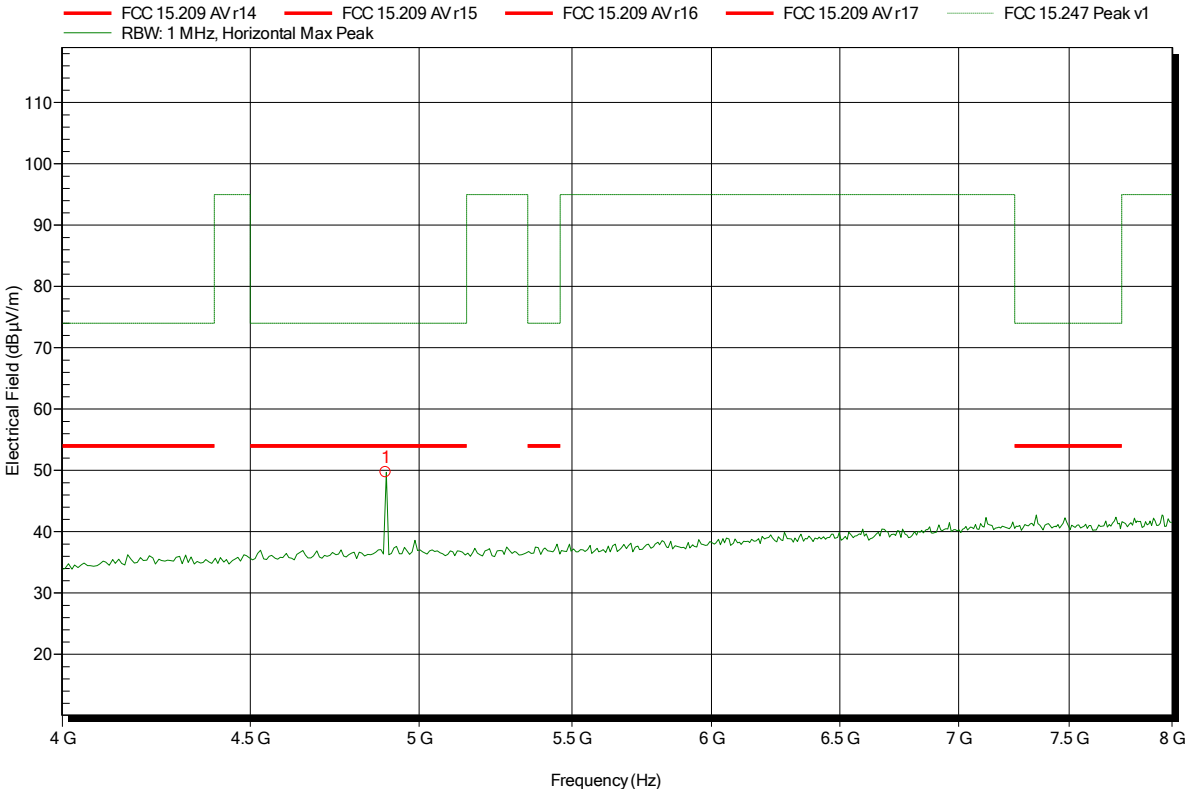

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.896 GHz	49.71 dBµV/m	74 dBµV/m	-24.29 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A1 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A1 -90° horizontal

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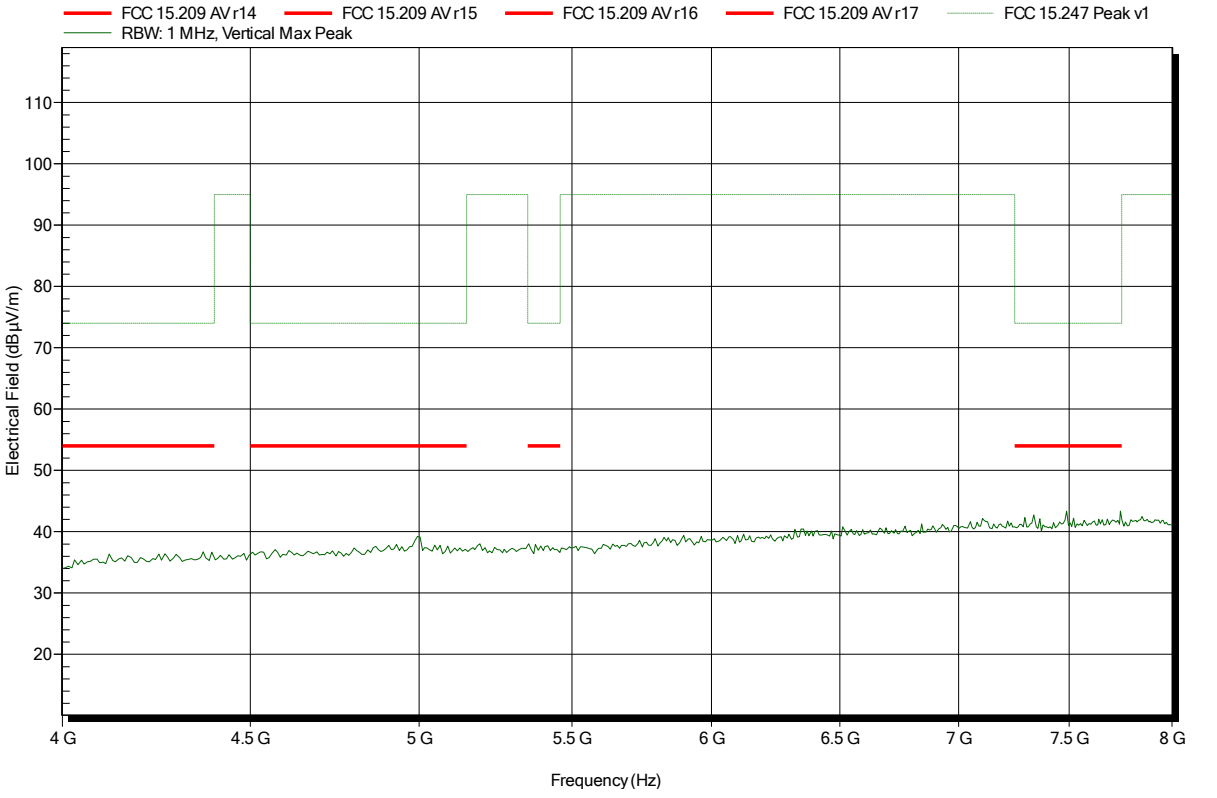

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A1 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A1 -90° horizontal

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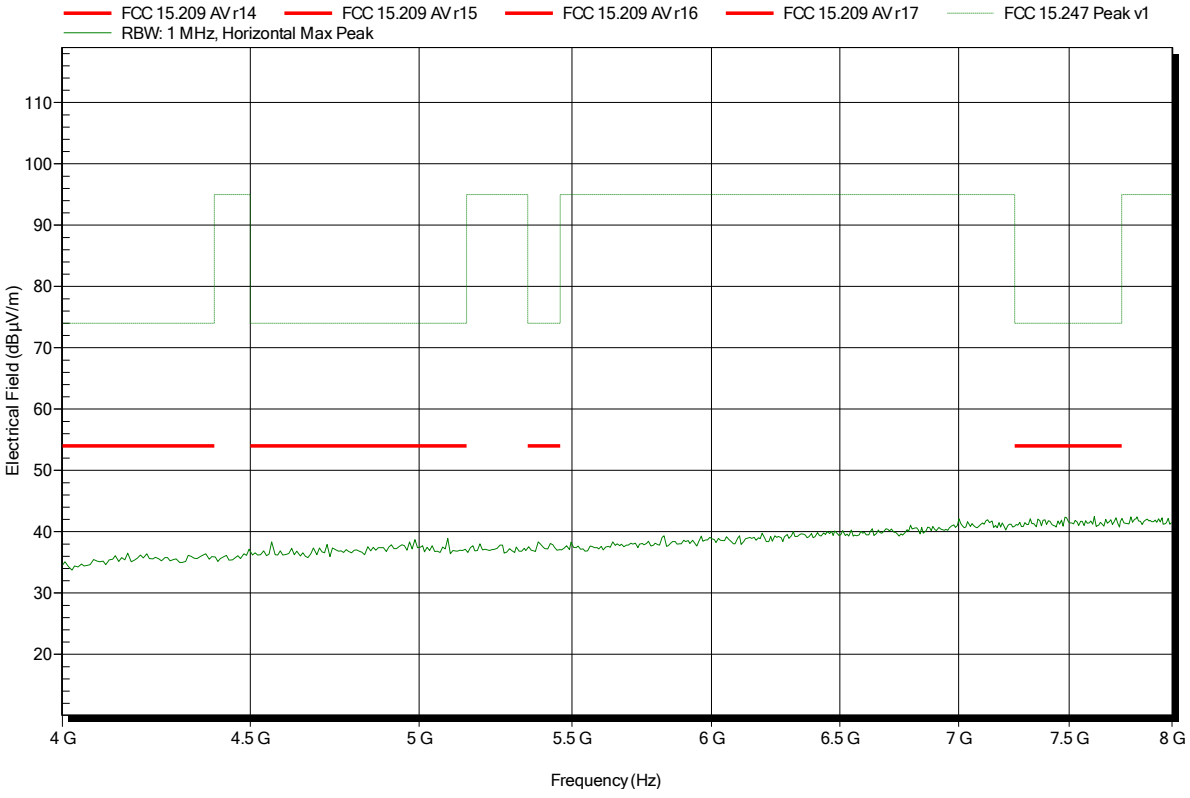

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

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EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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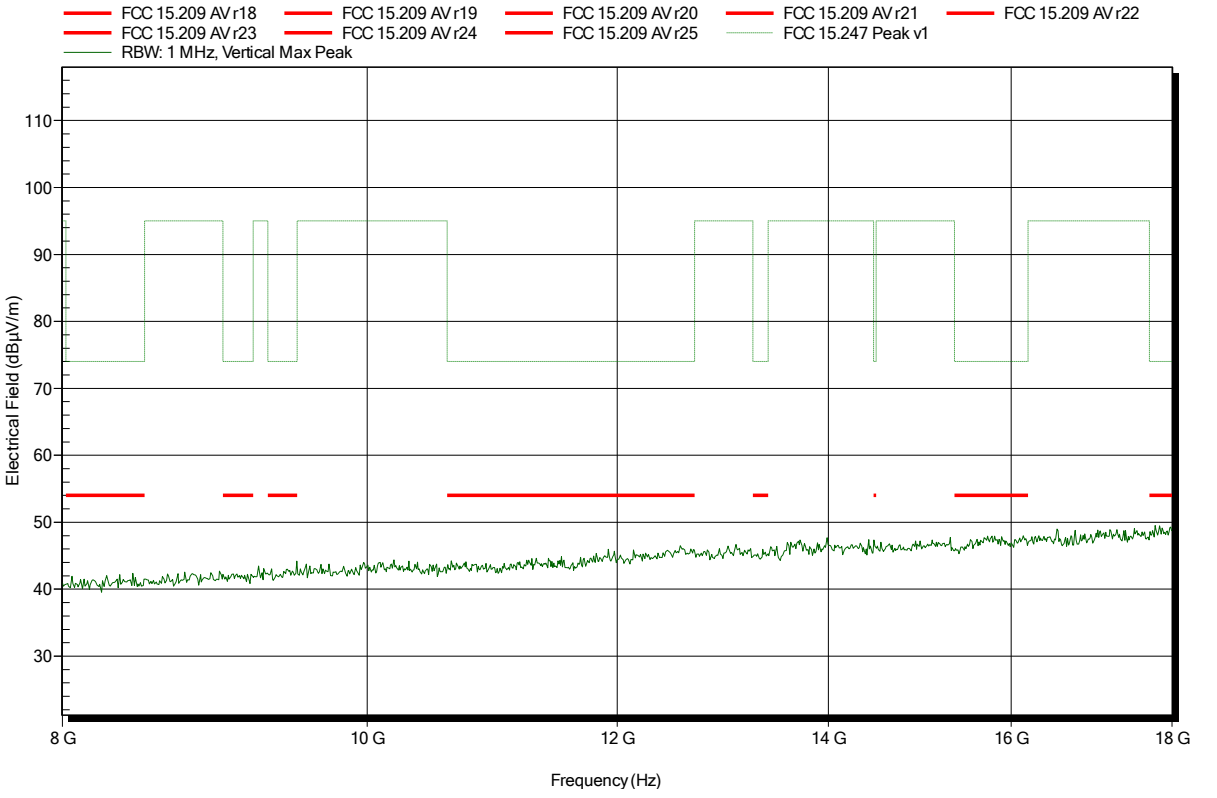

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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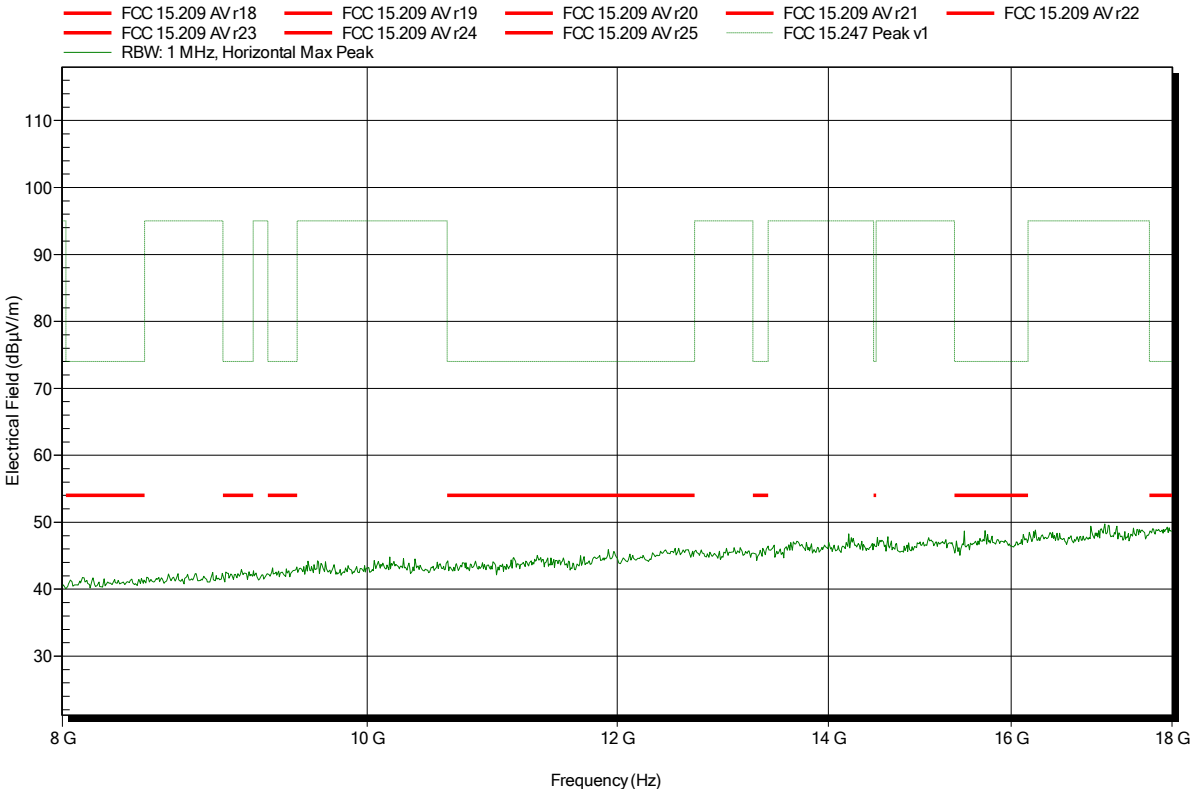

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

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Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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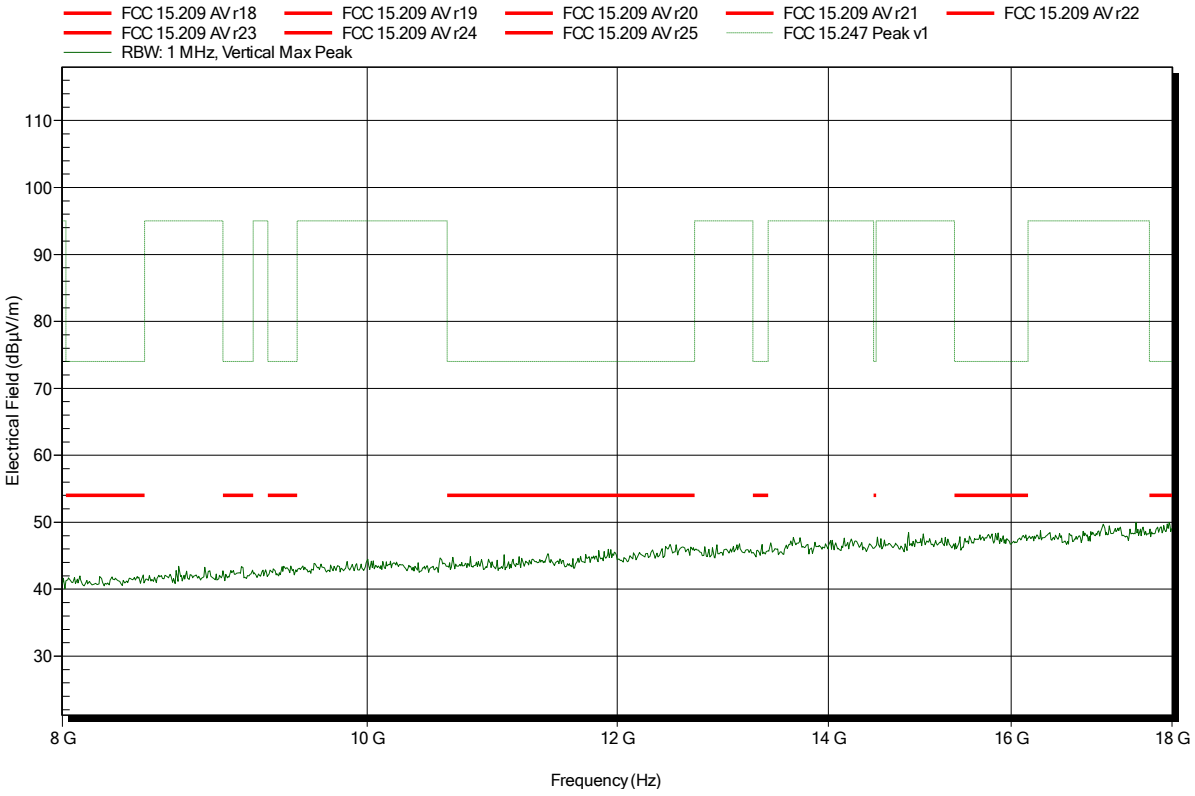

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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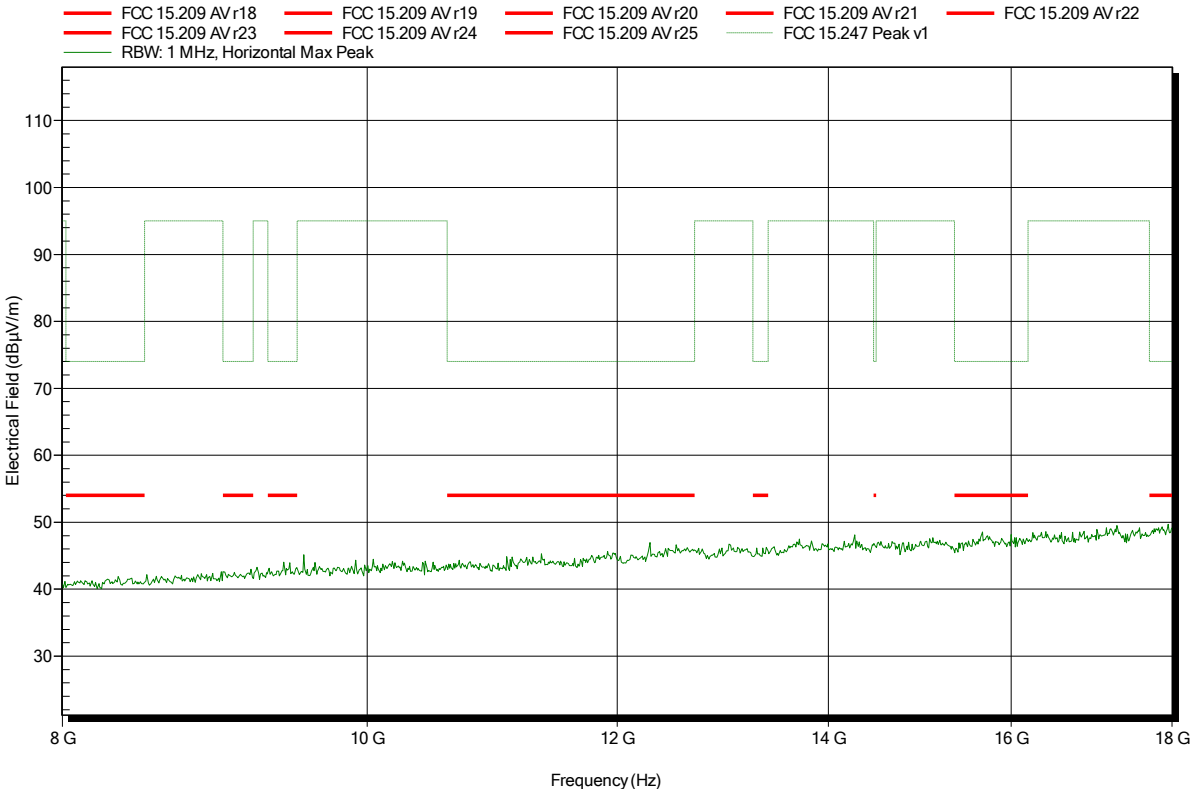

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Project number: G0M-1505-4730

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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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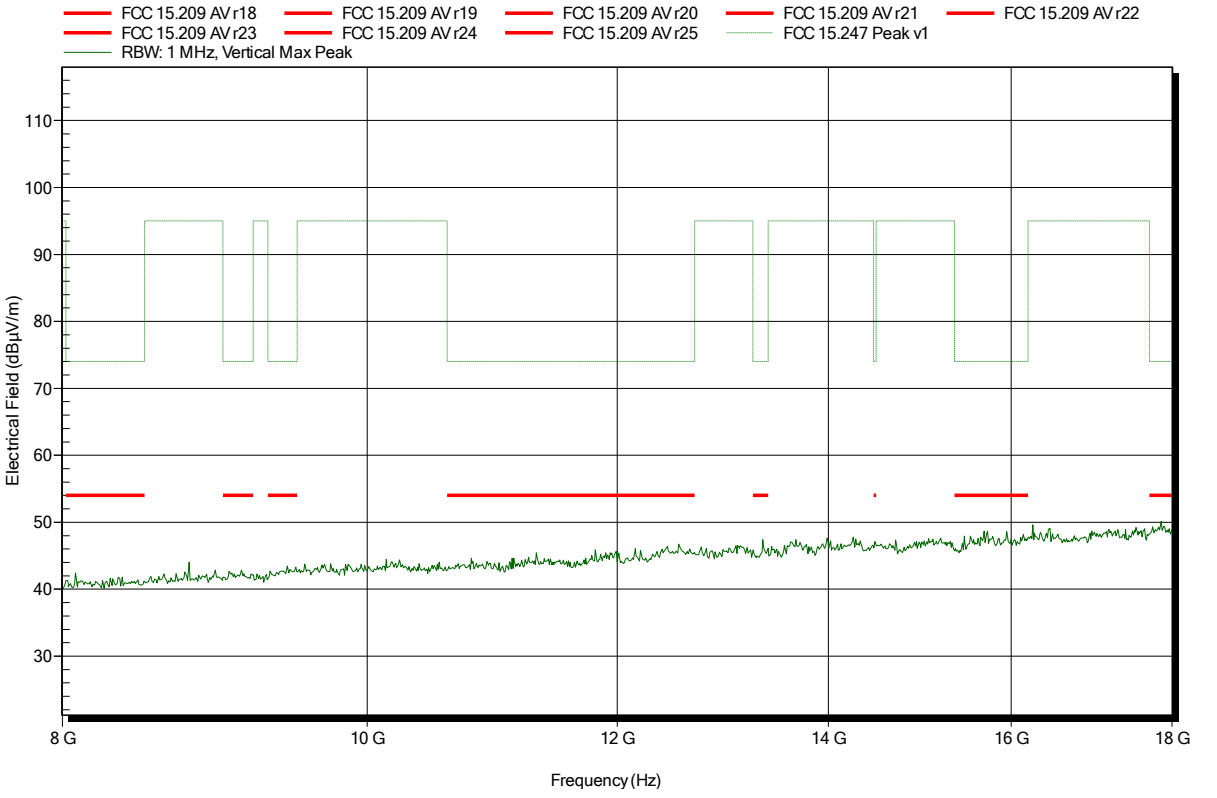

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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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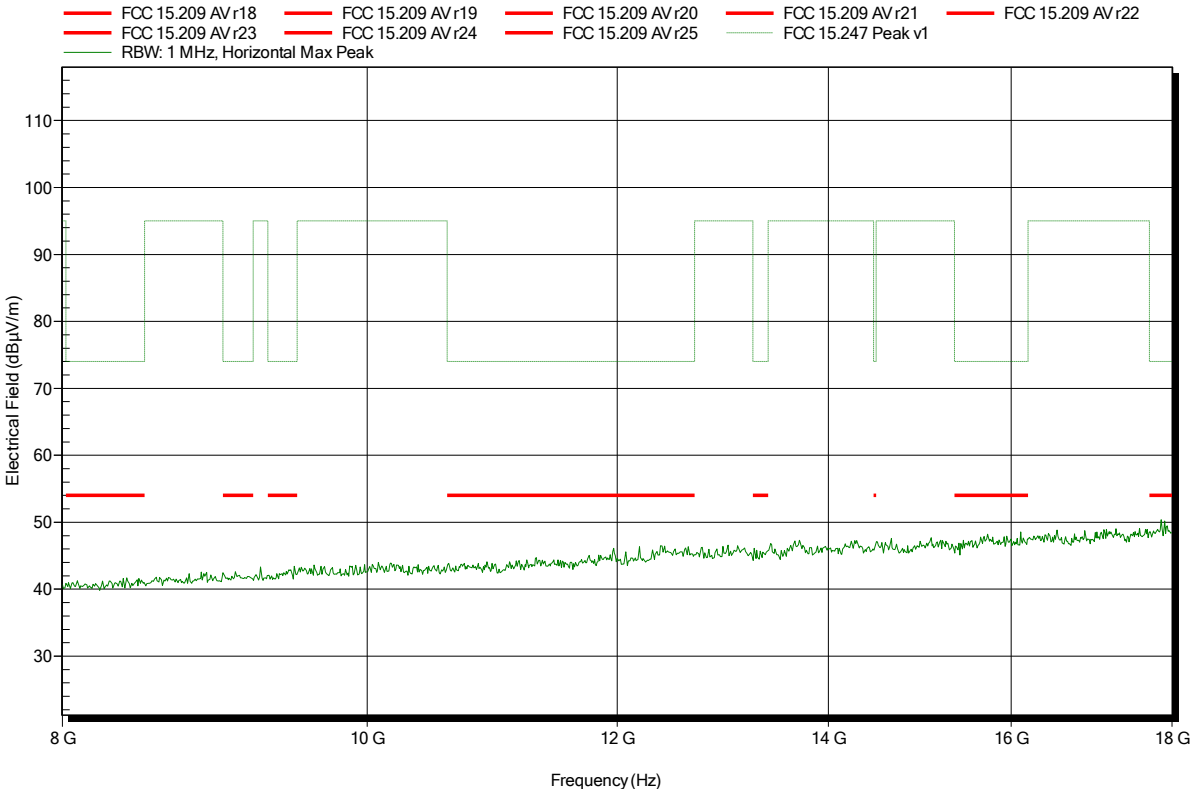

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Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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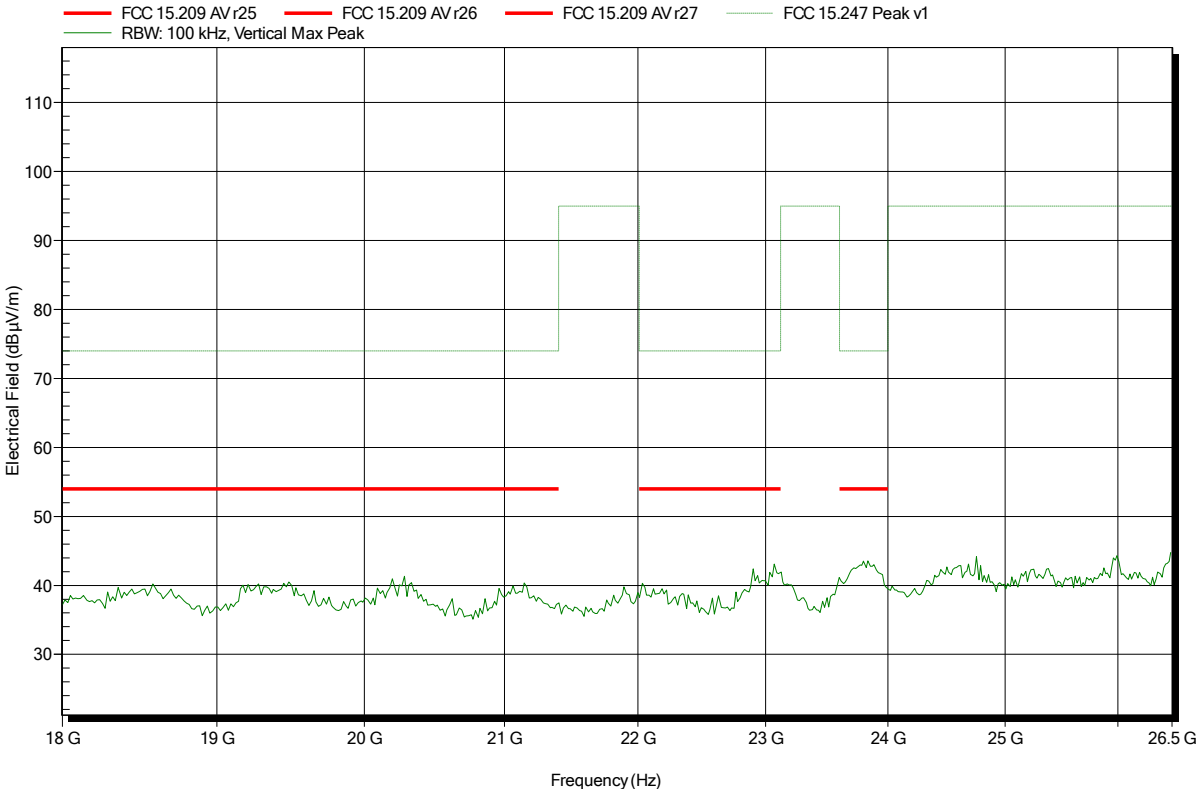

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Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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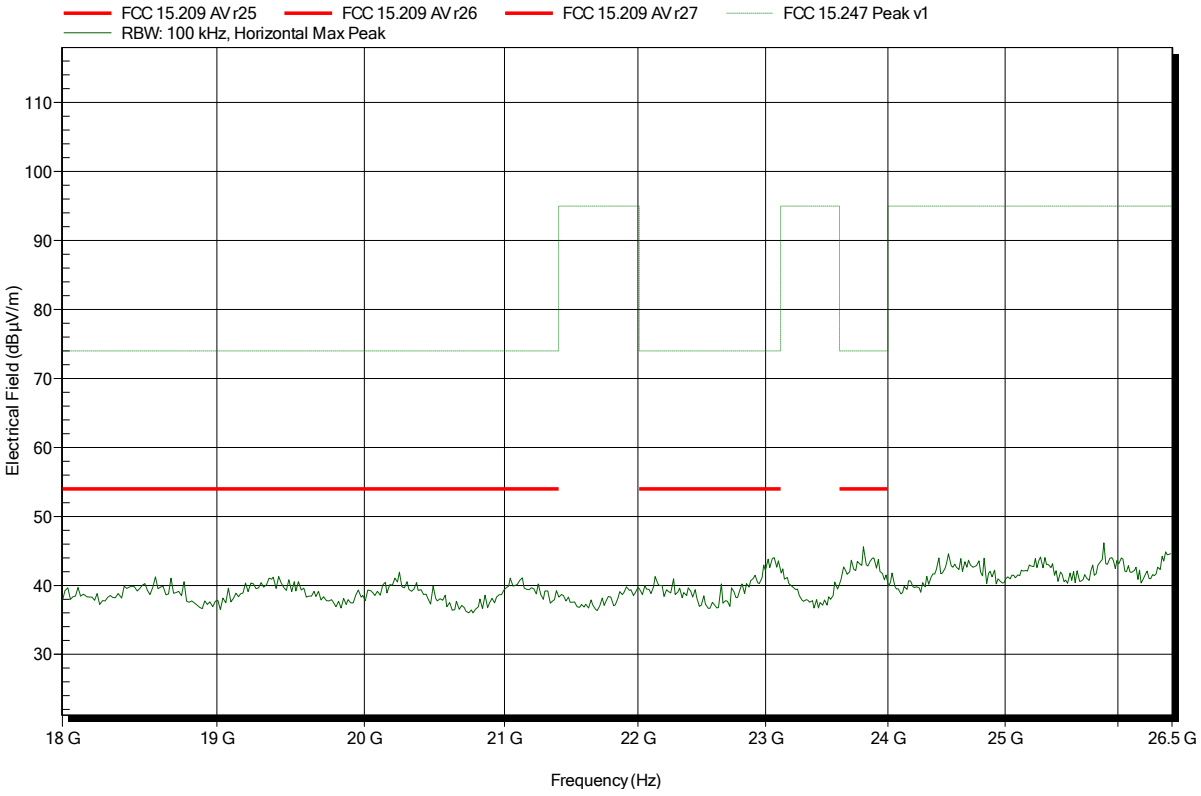

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Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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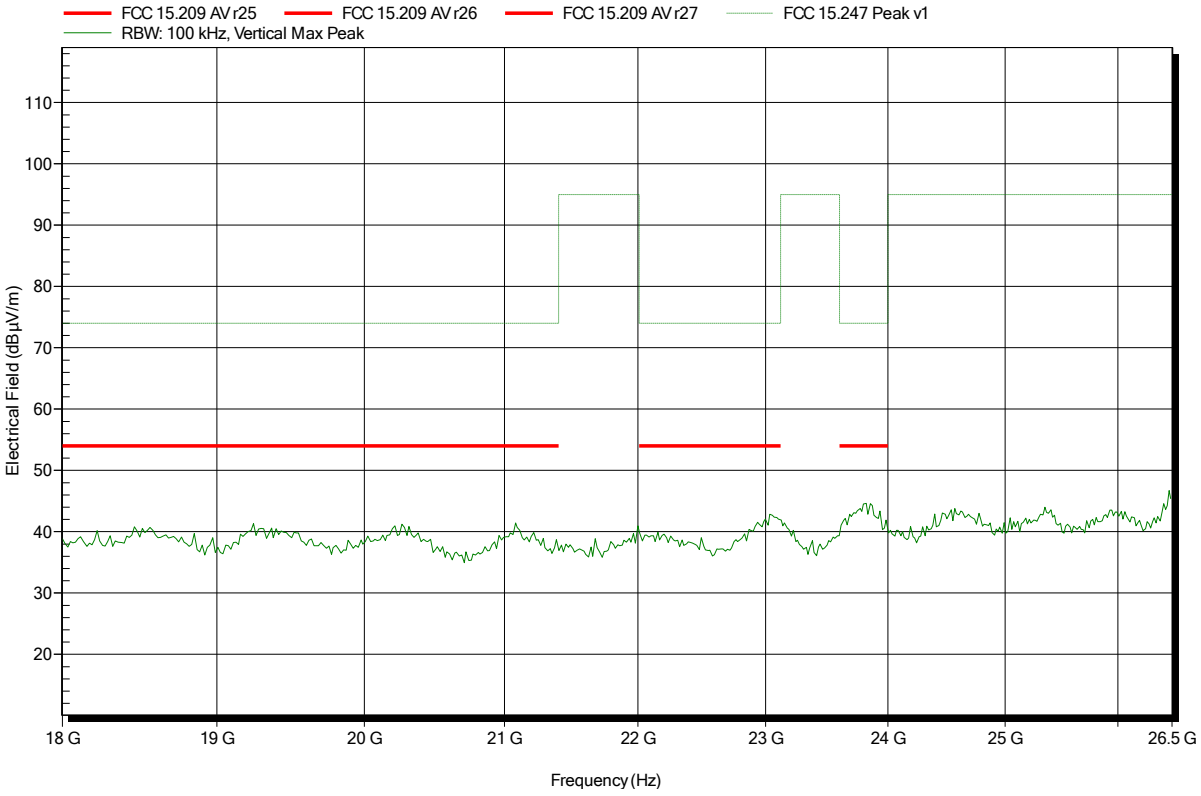

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Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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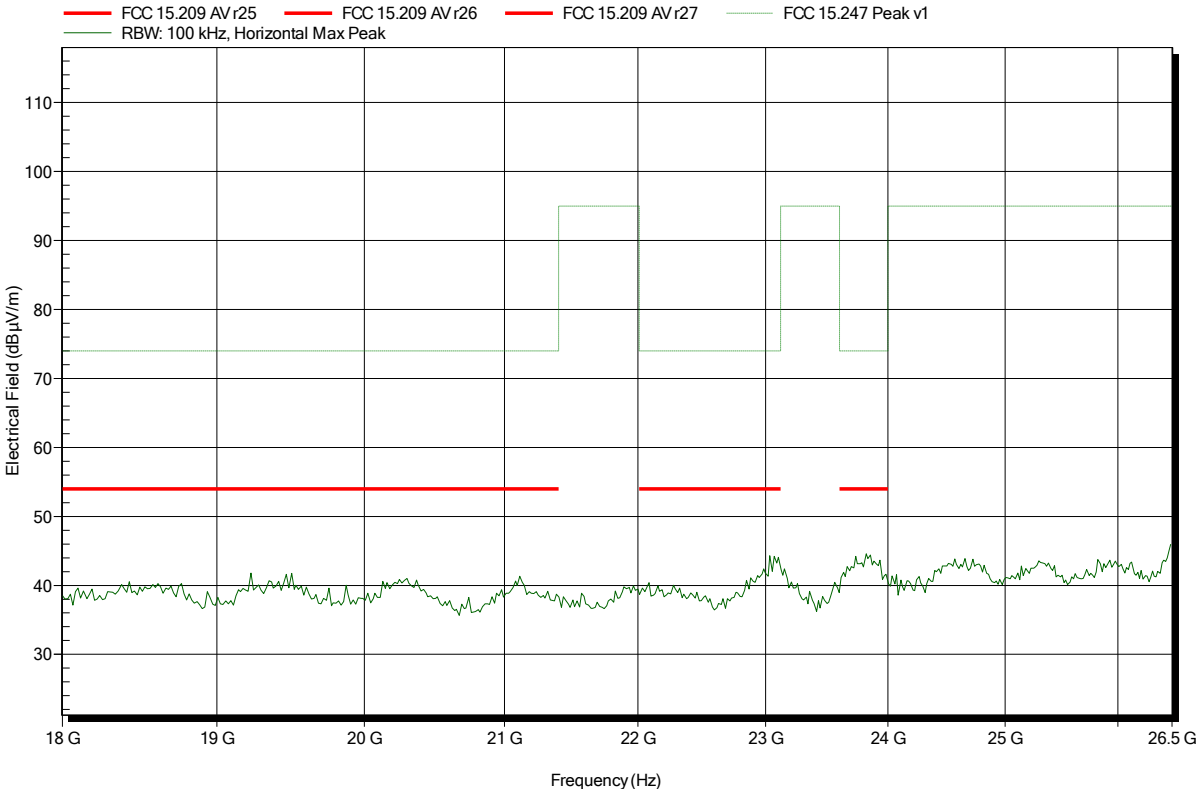

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Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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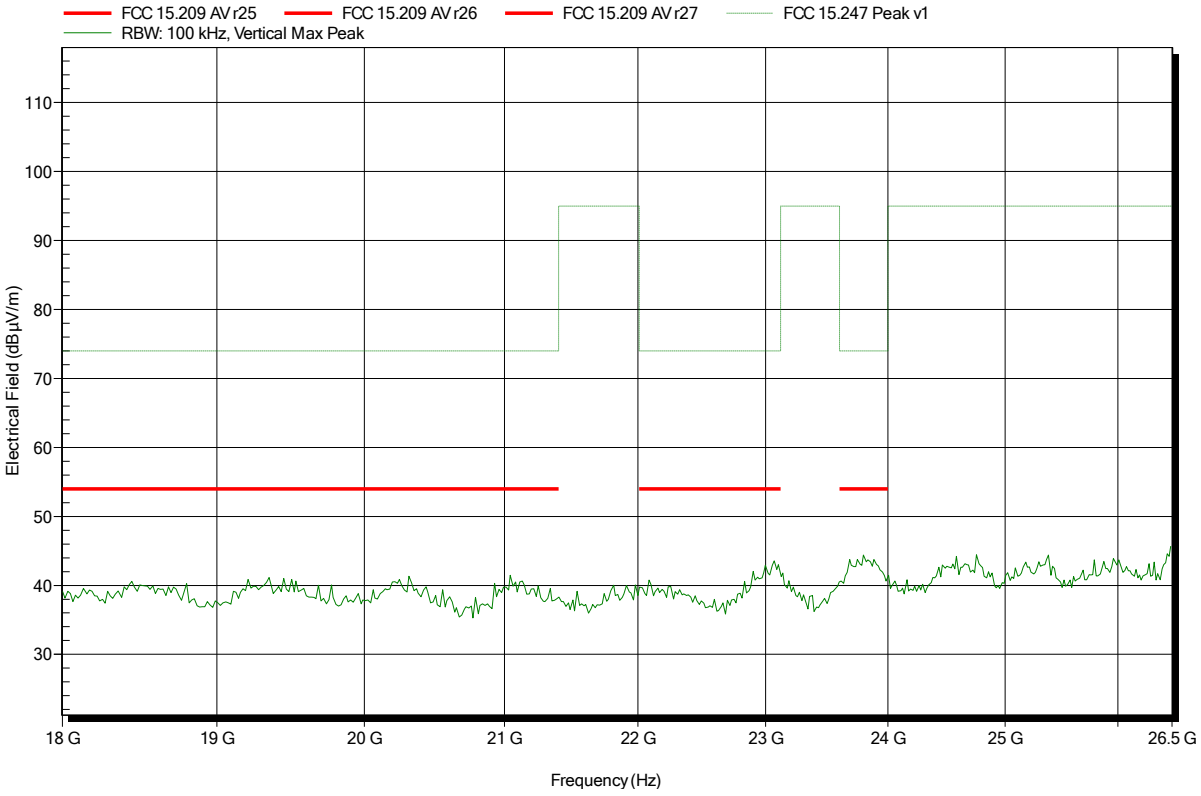

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Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A1
Test Date:	2015-05-13
Note:	EUT horizontal, ant.: A1 -90° horizontal

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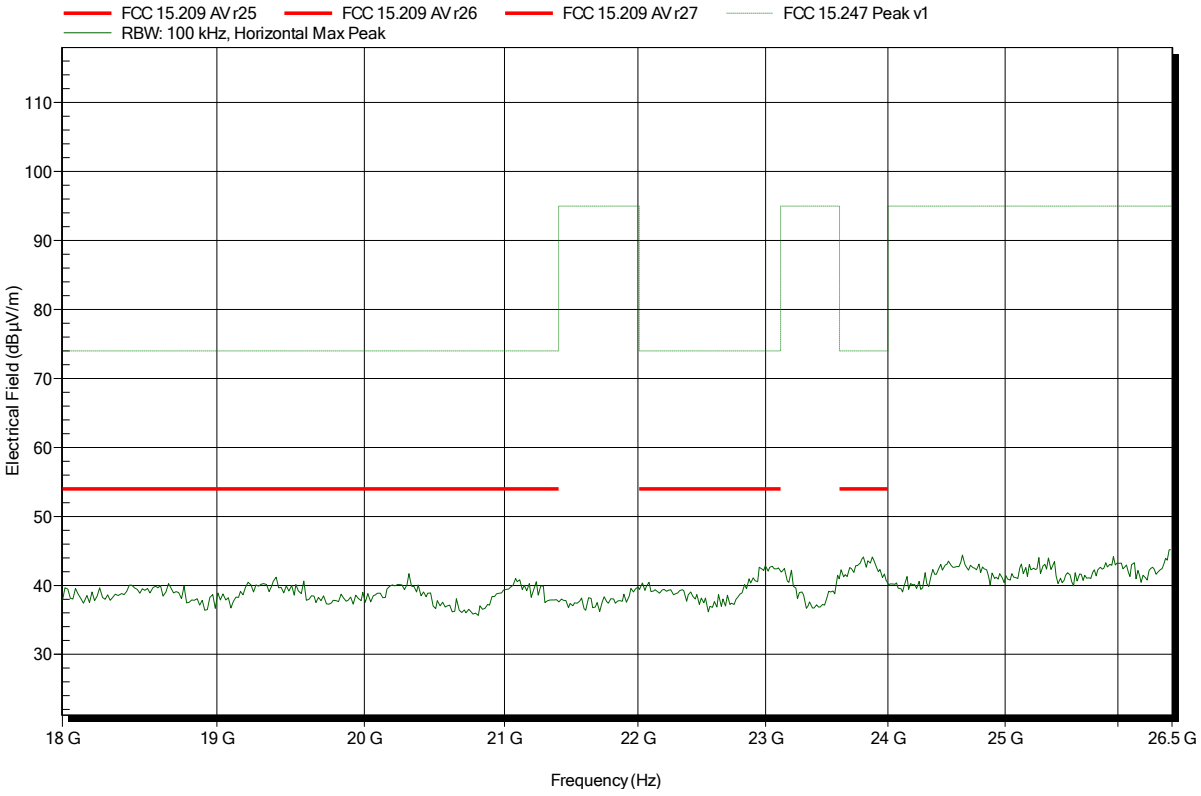

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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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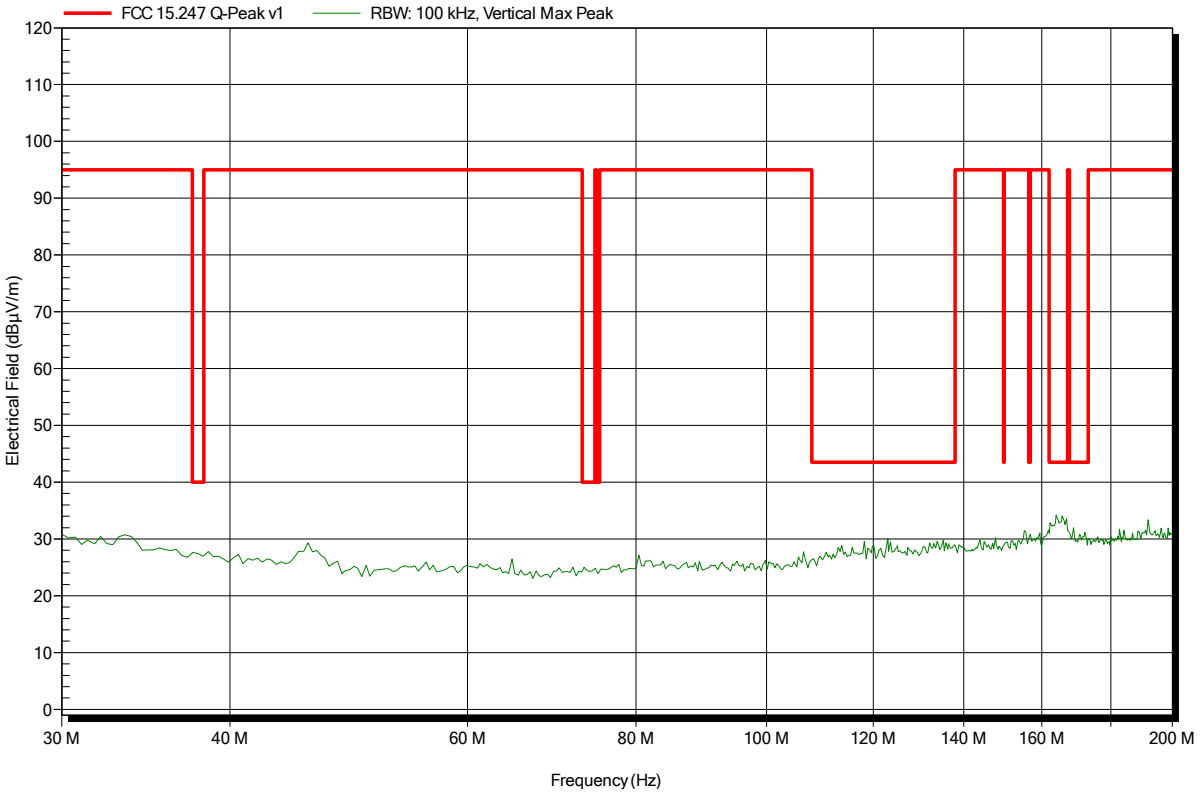

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Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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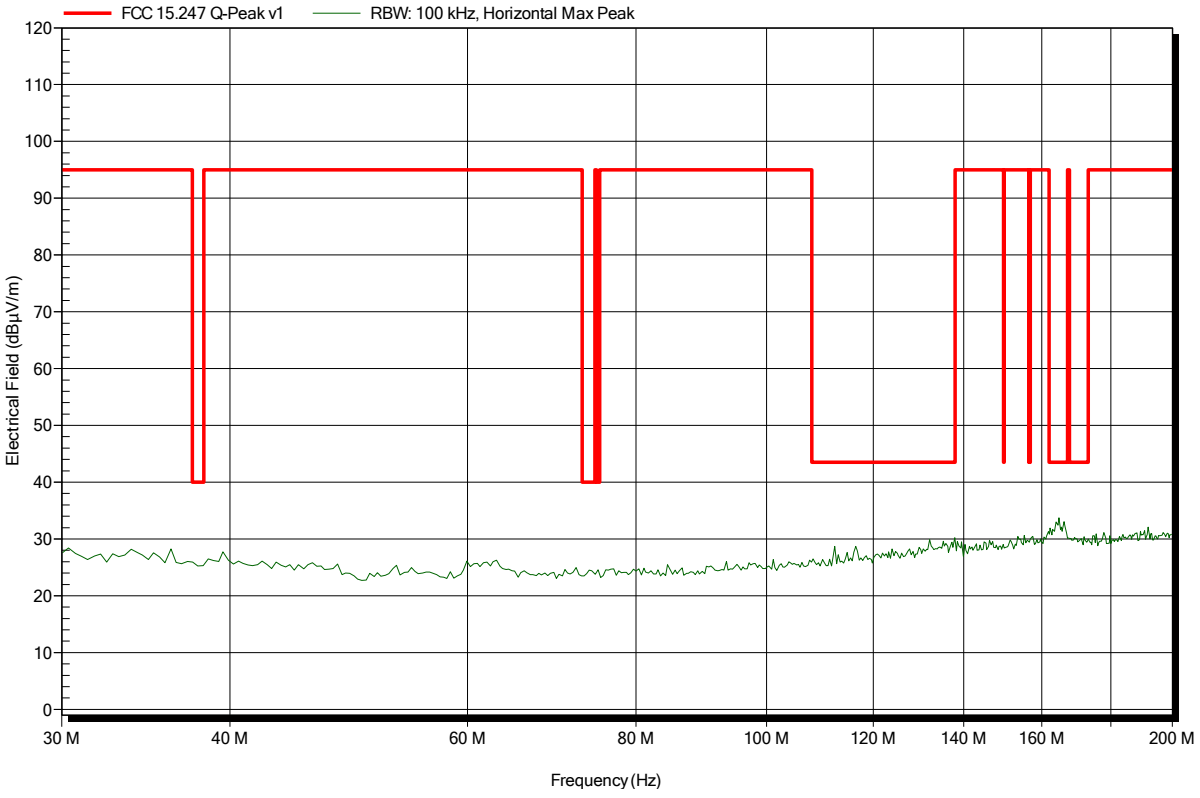

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Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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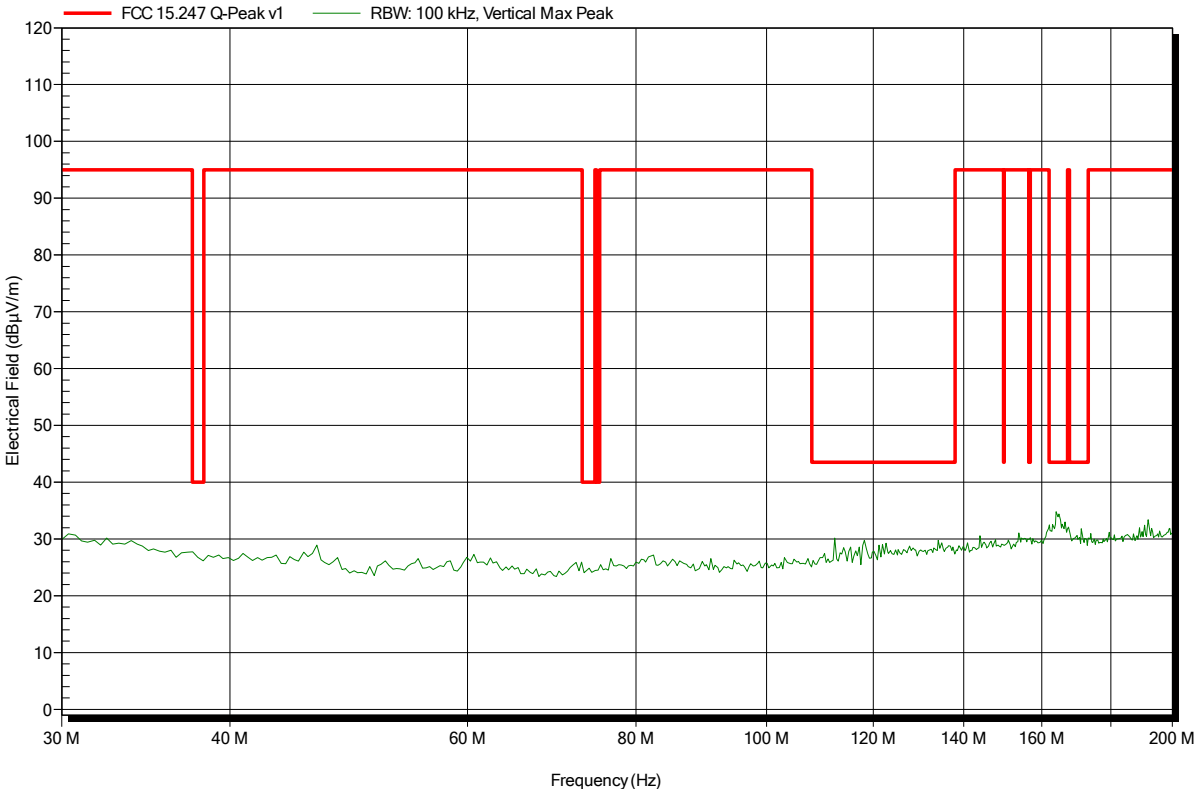

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Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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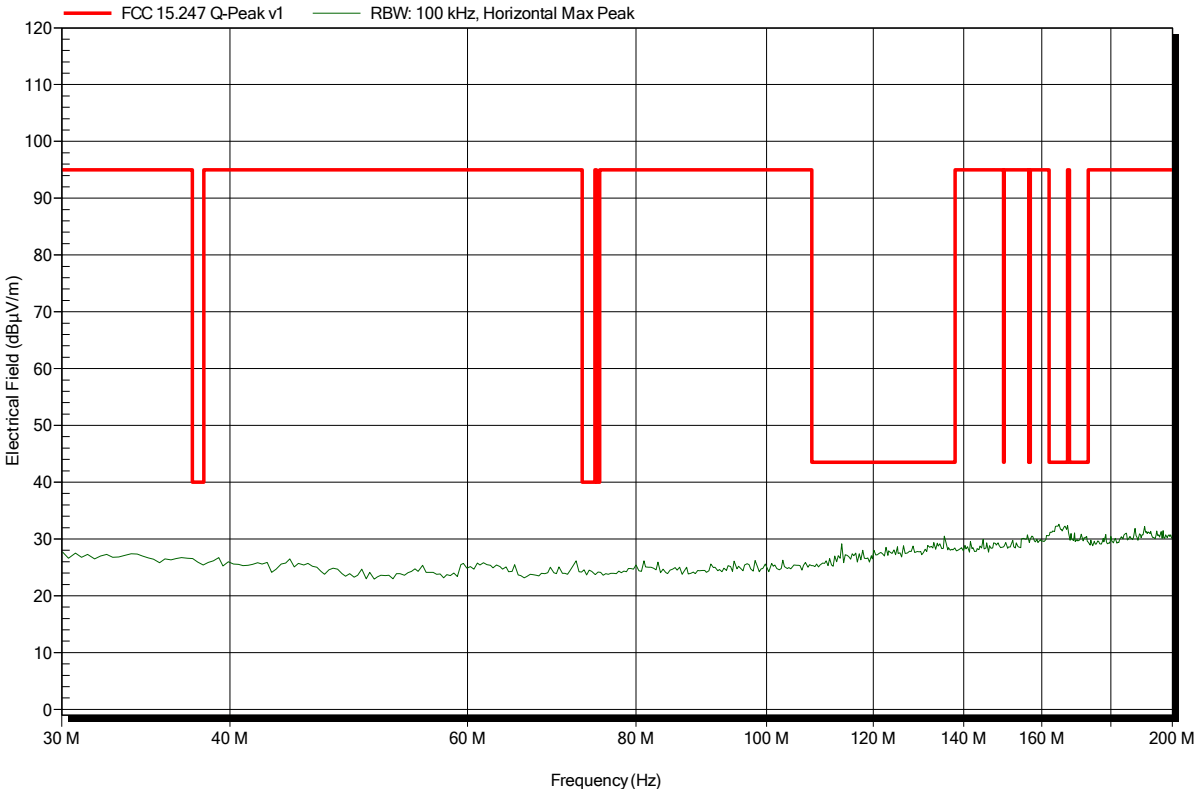

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Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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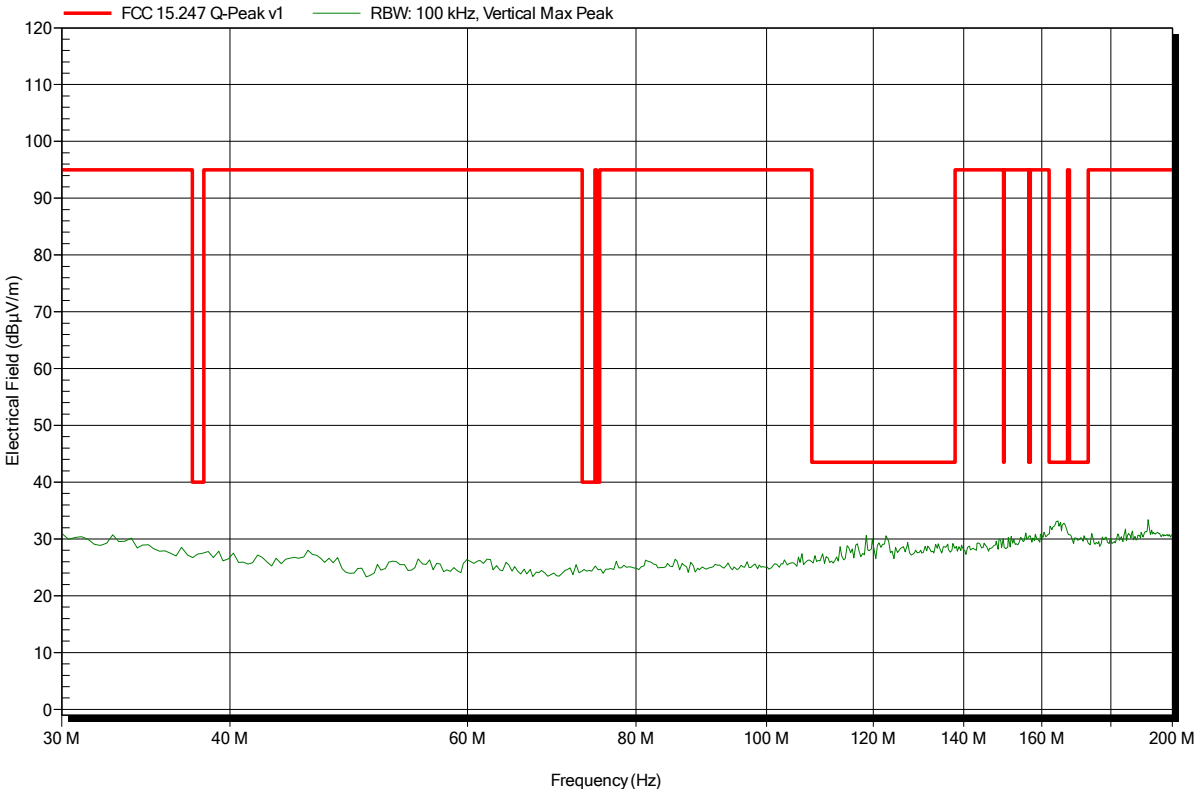

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Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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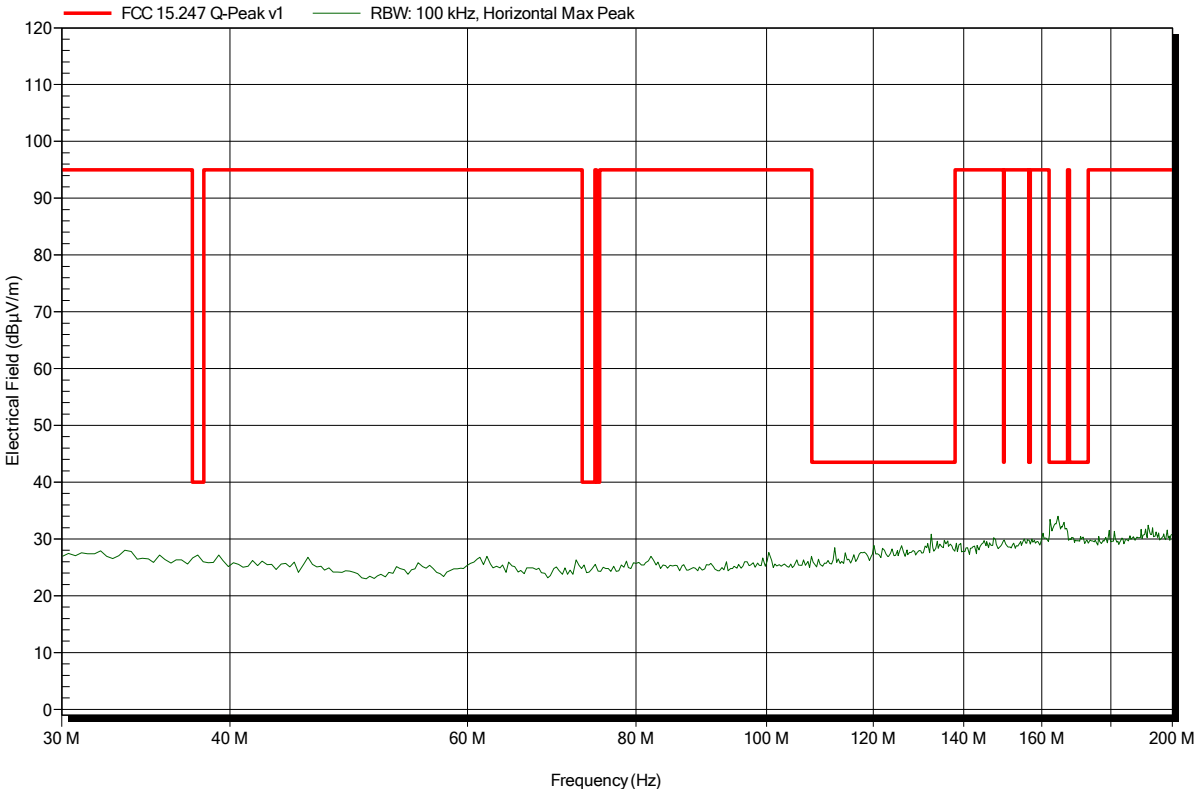

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Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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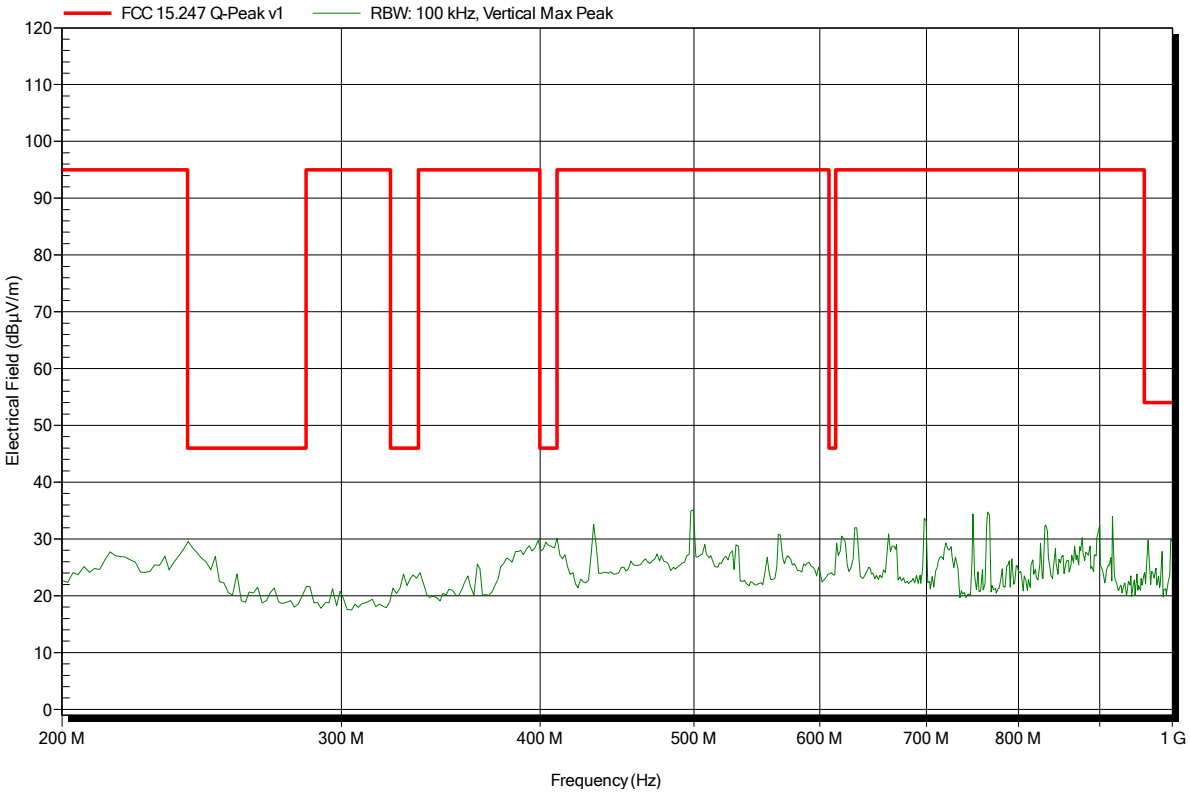

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Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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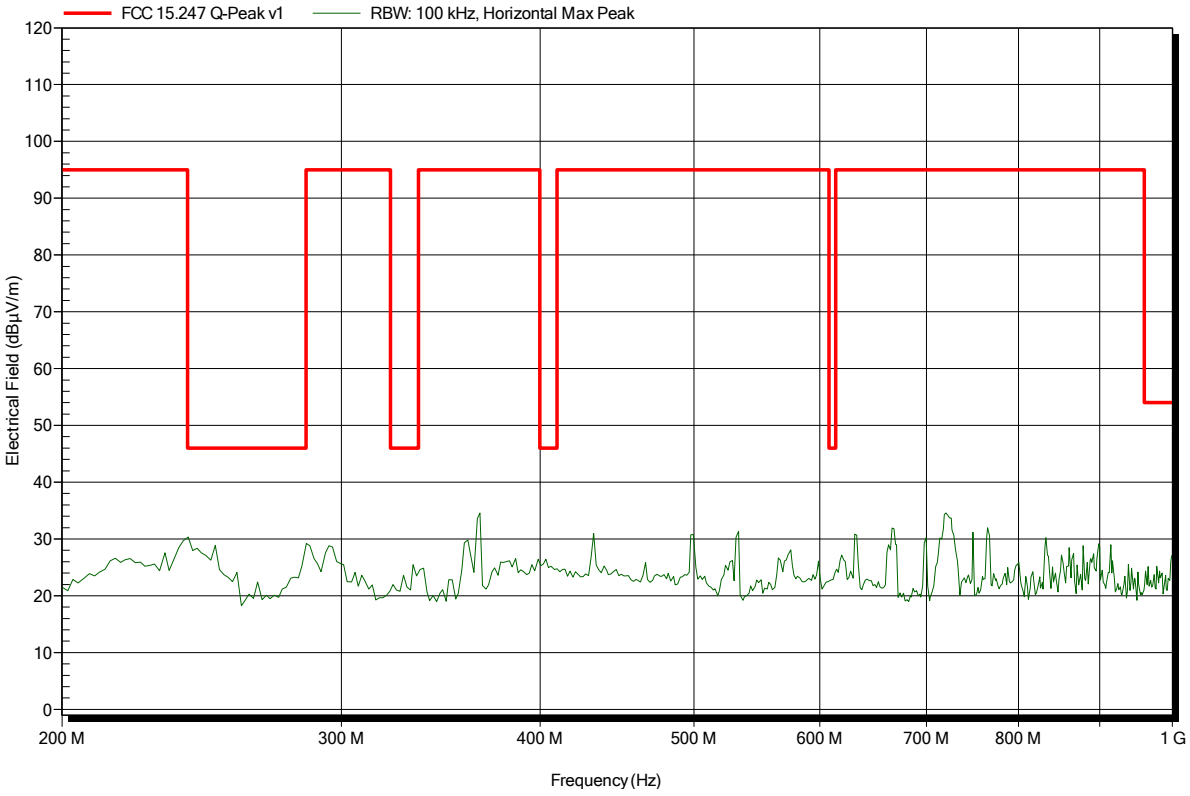

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Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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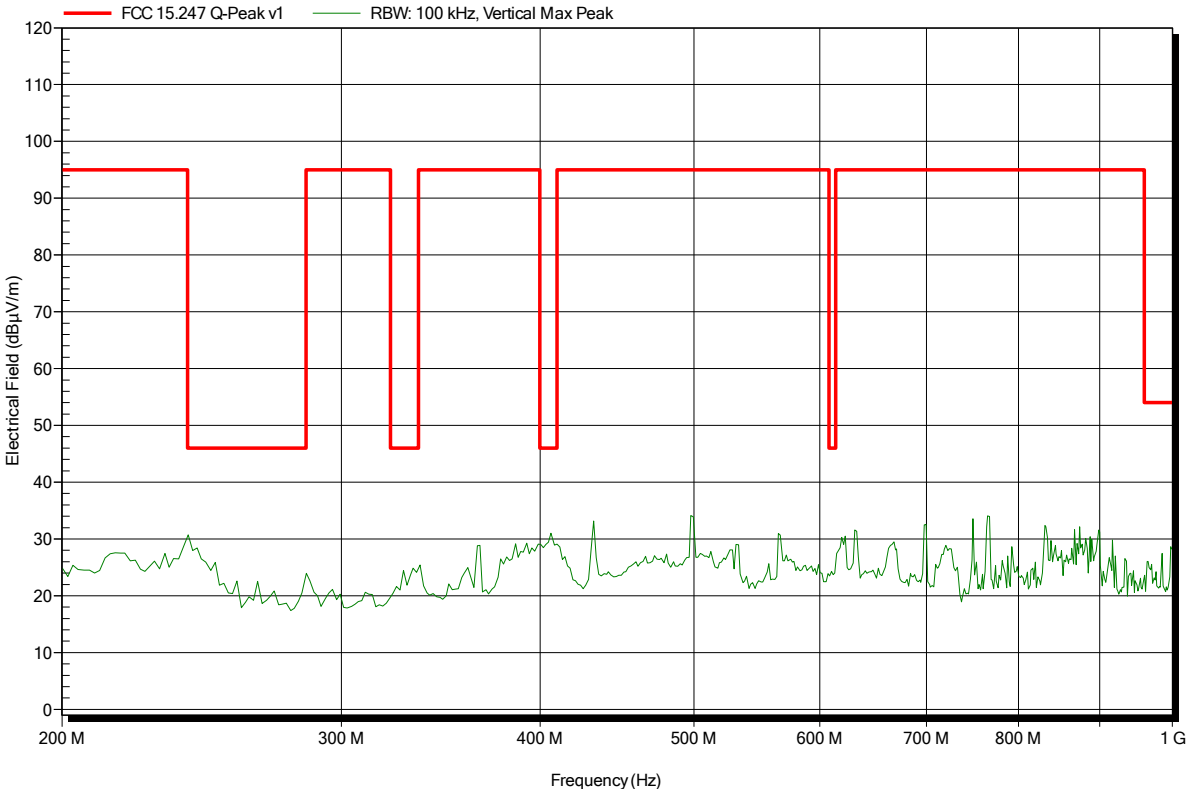

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Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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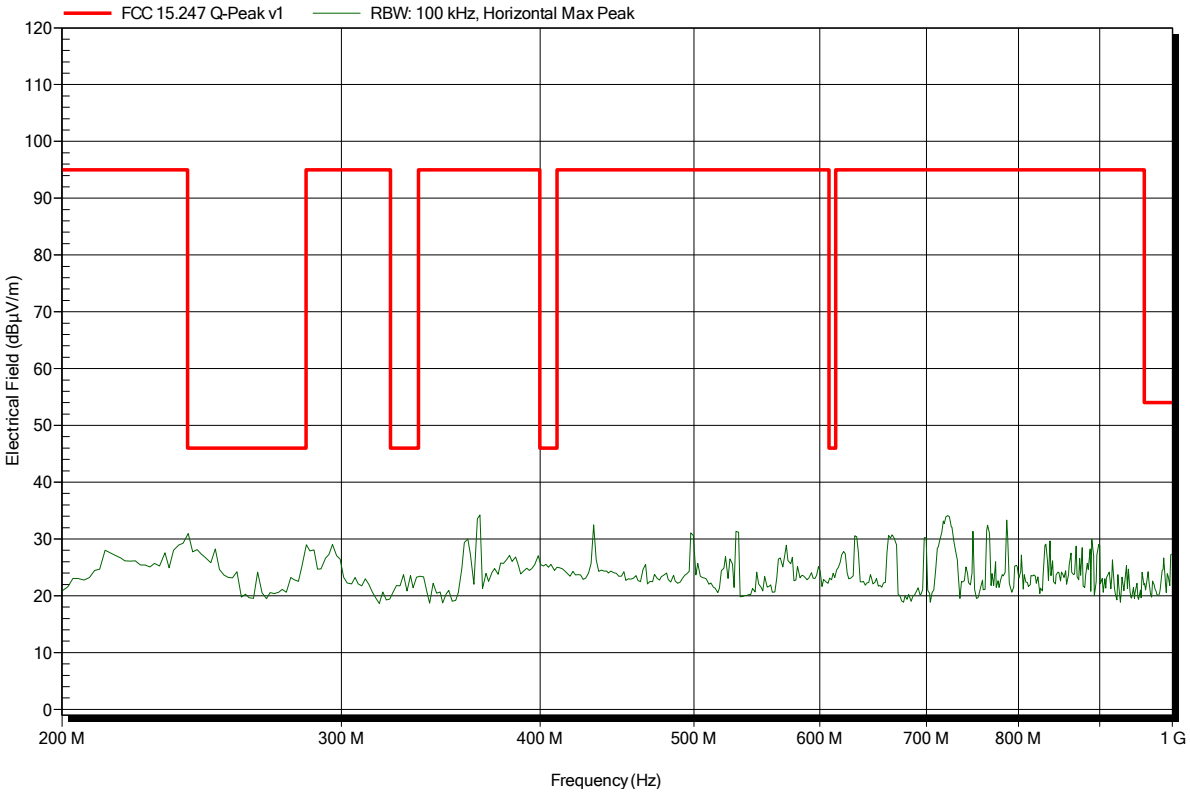

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Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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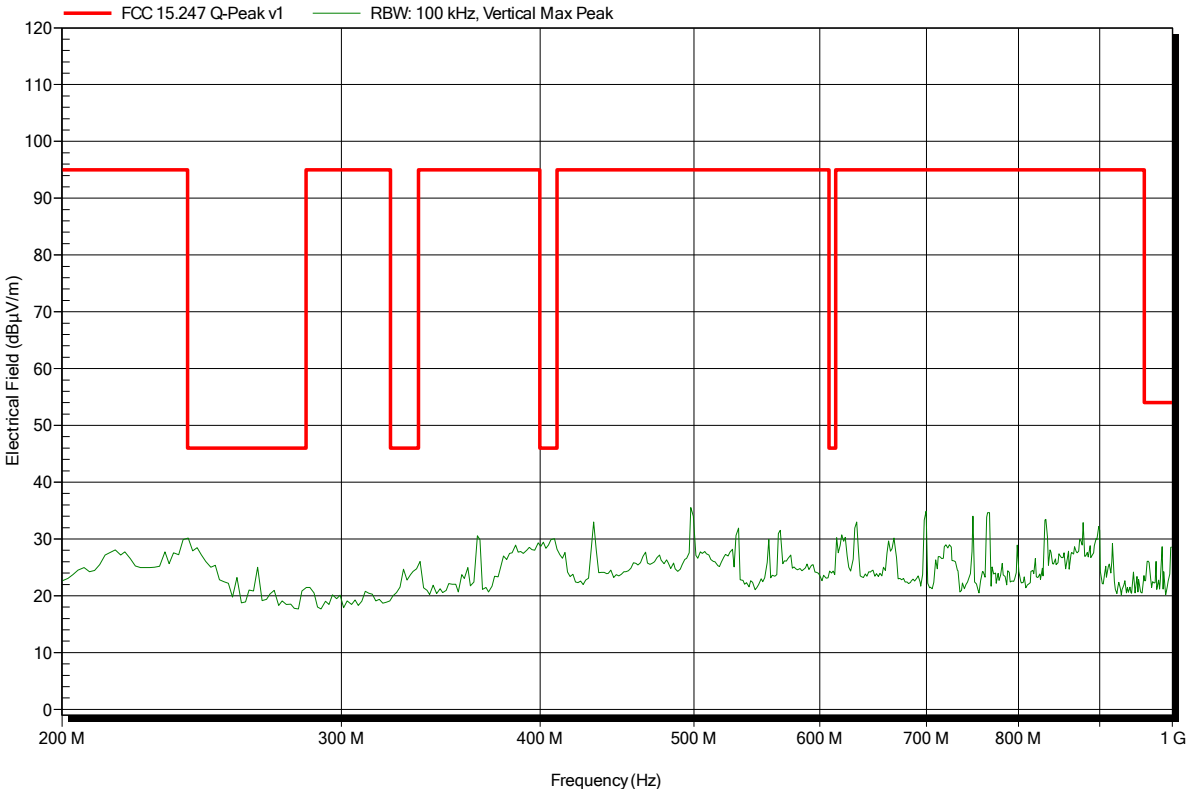

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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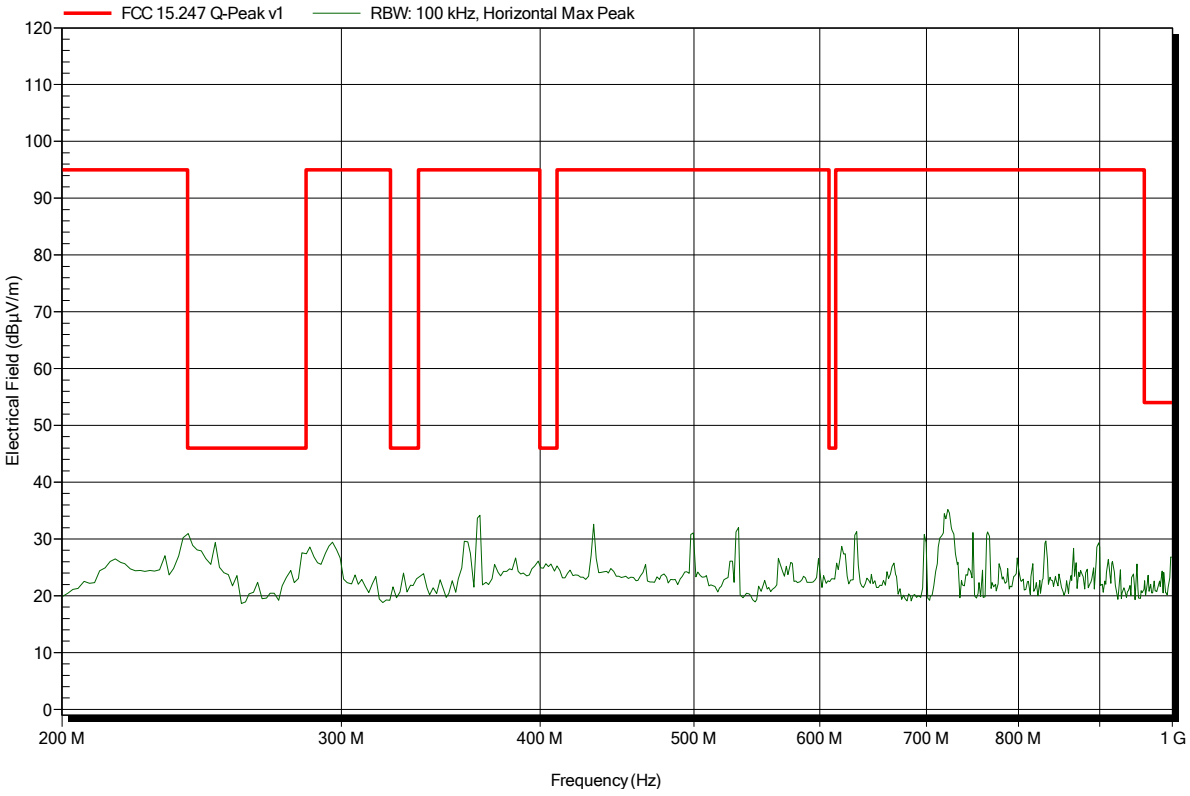

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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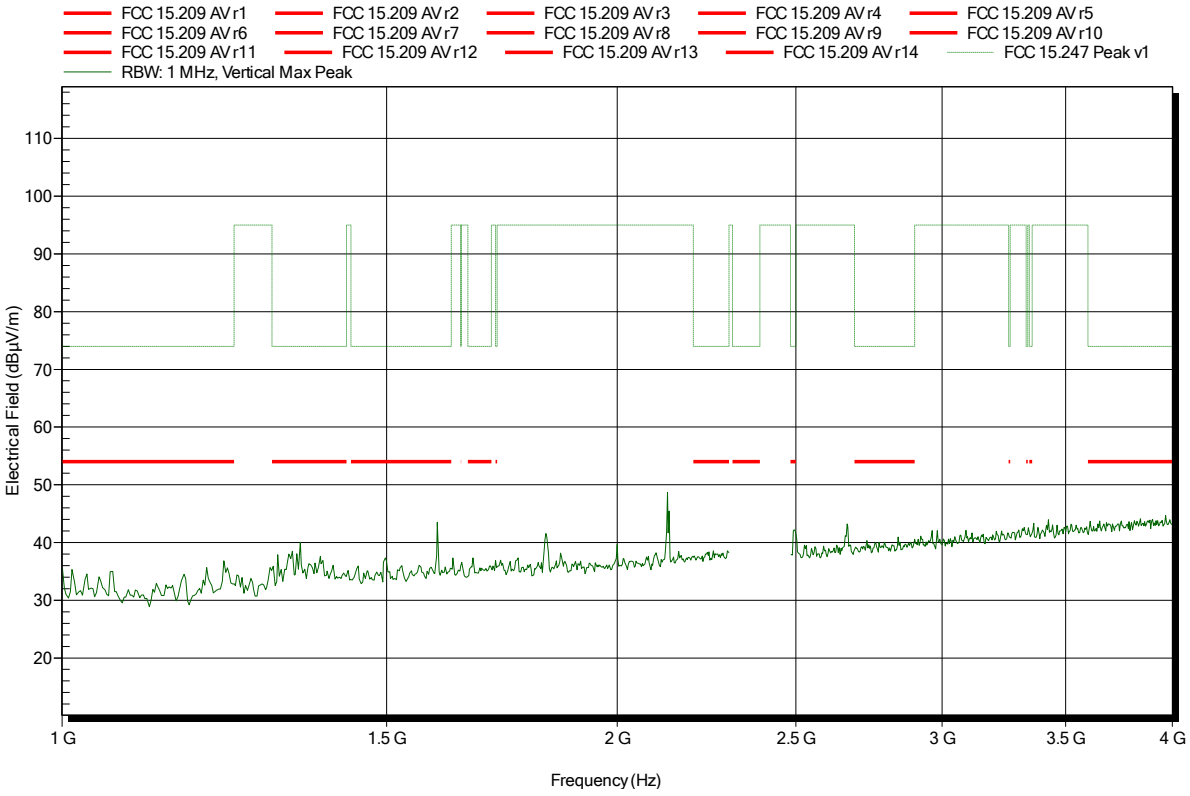

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal; lower bandedge

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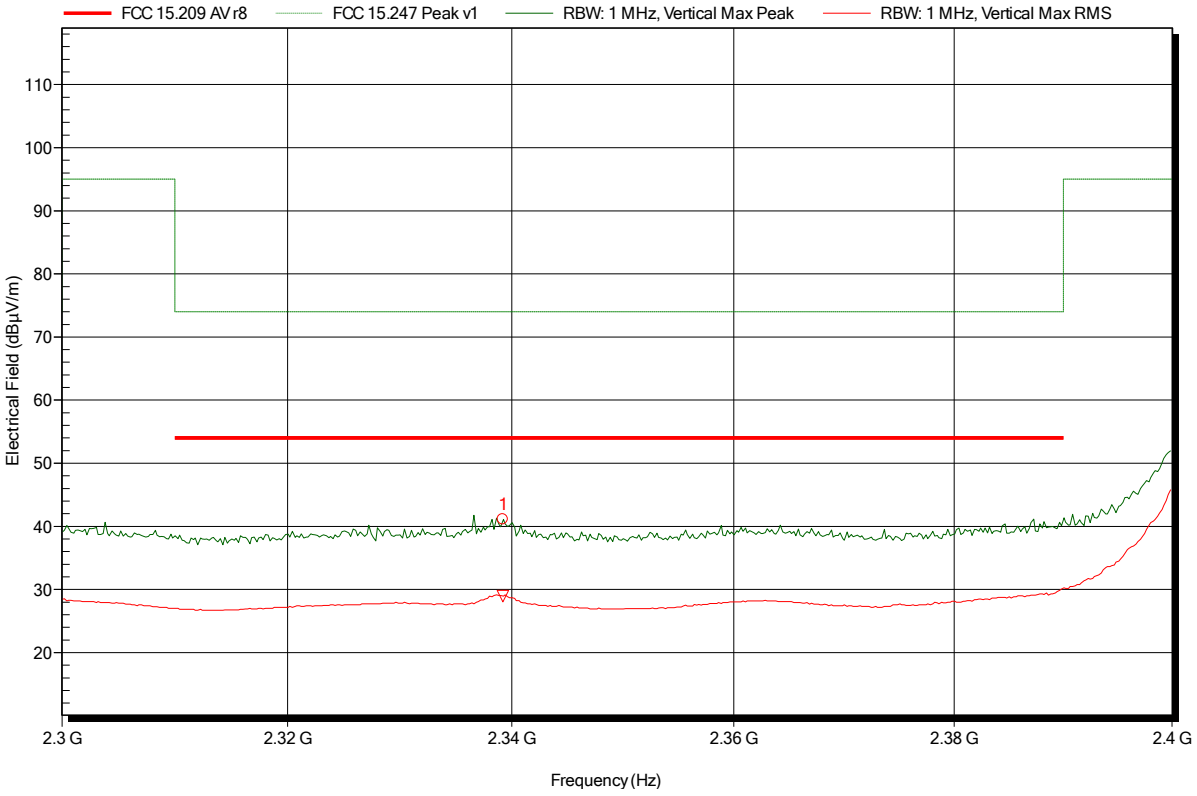

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.339 GHz	41.09 dBµV/m	74 dBµV/m	-32.91 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.339 GHz	28.94 dBµV/m	54 dBµV/m	-25.06 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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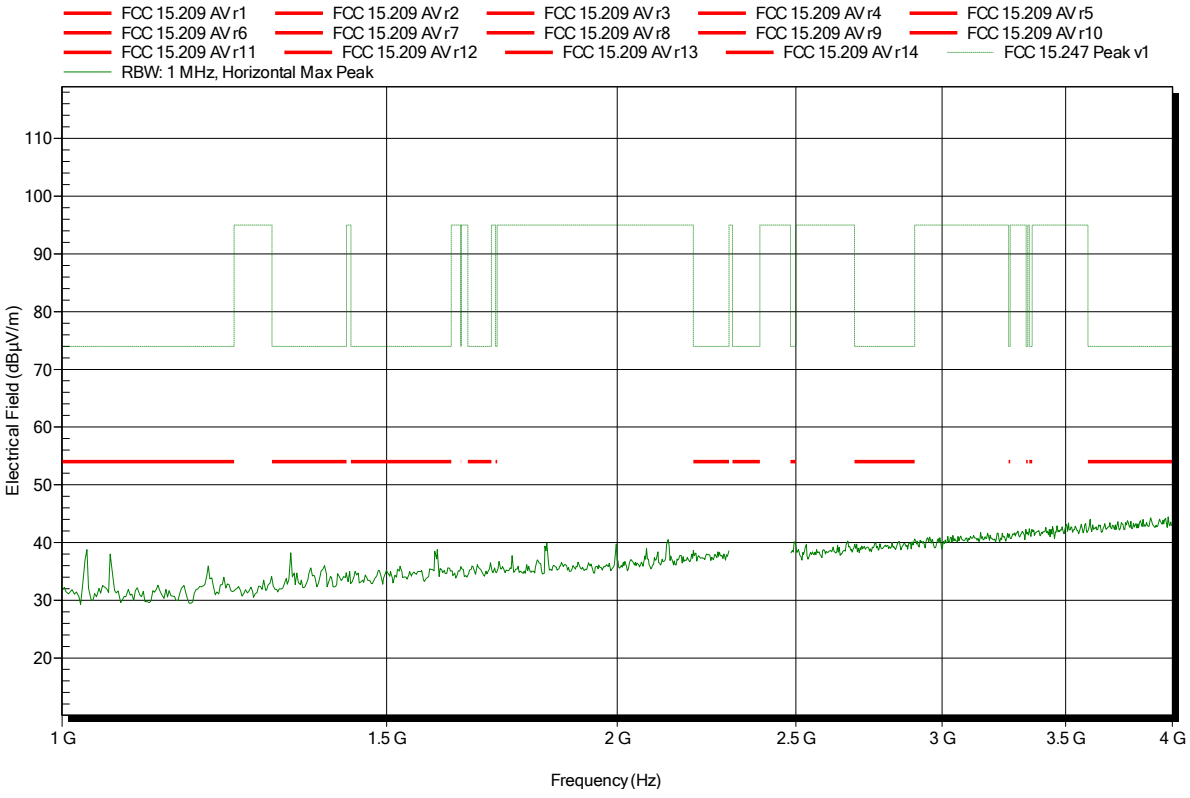

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal; lower bandedge

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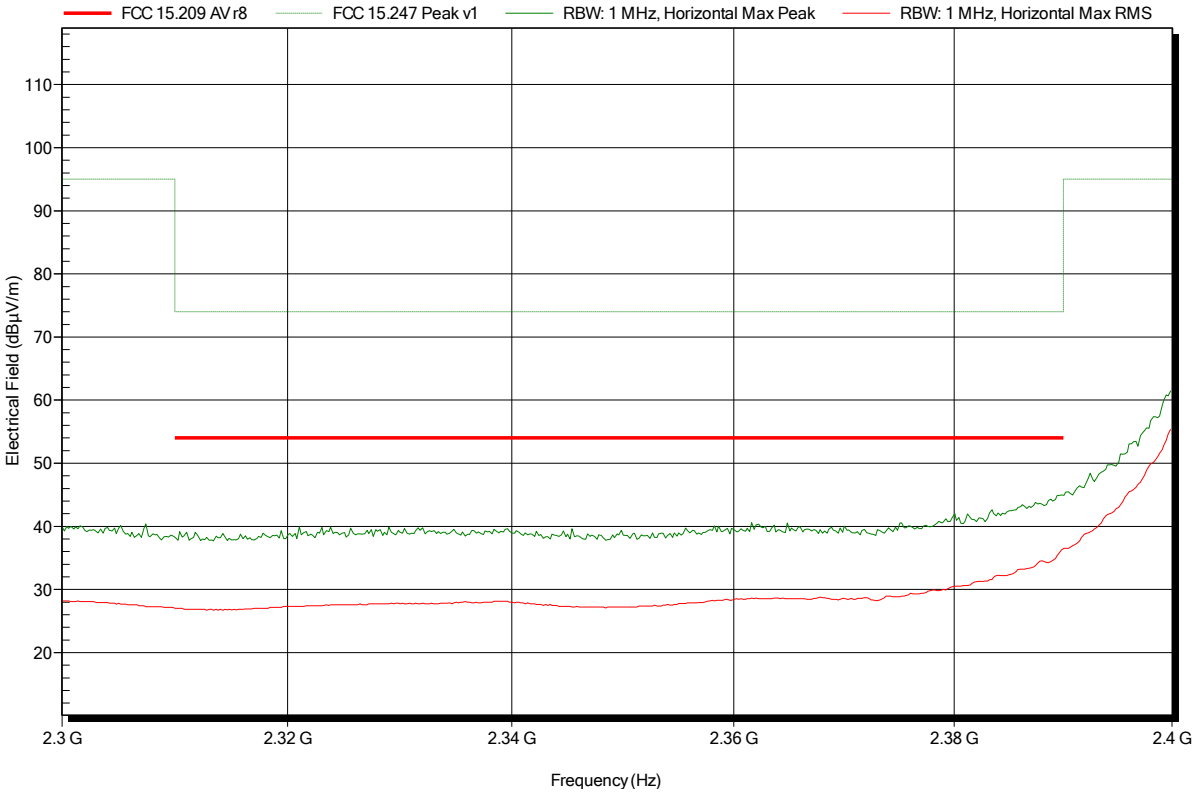

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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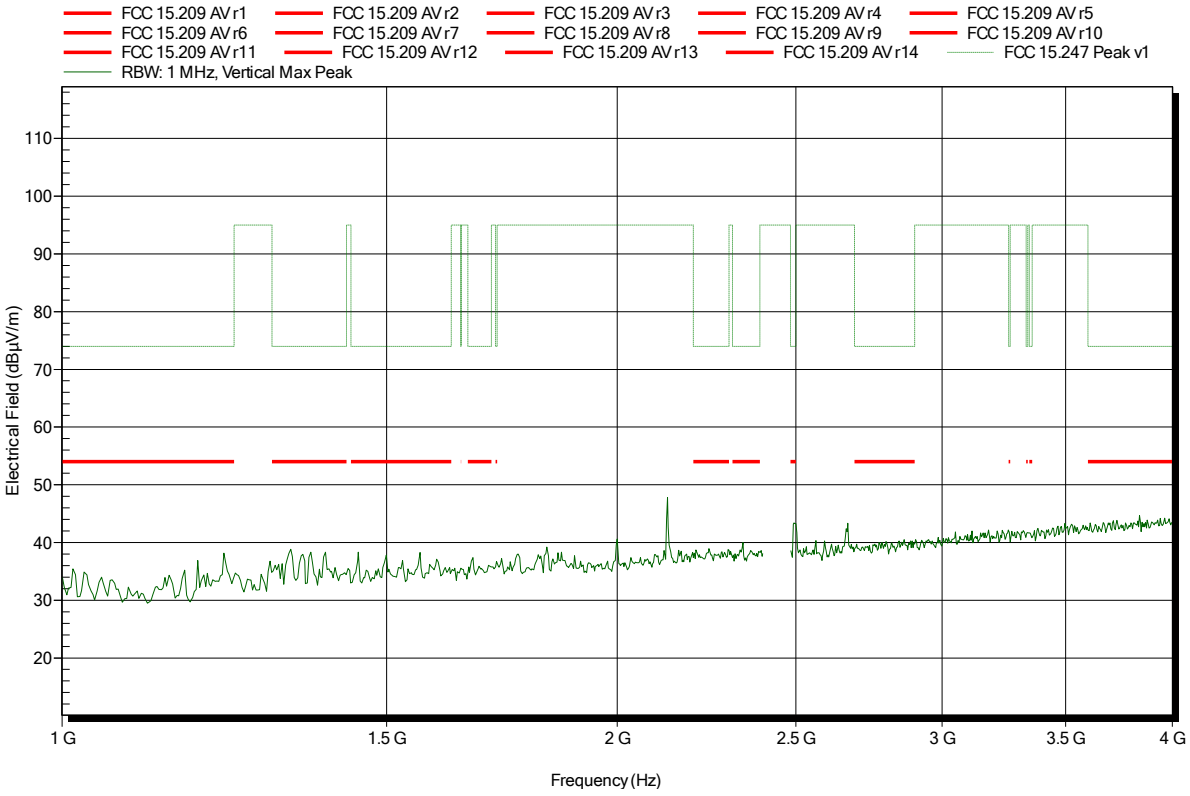

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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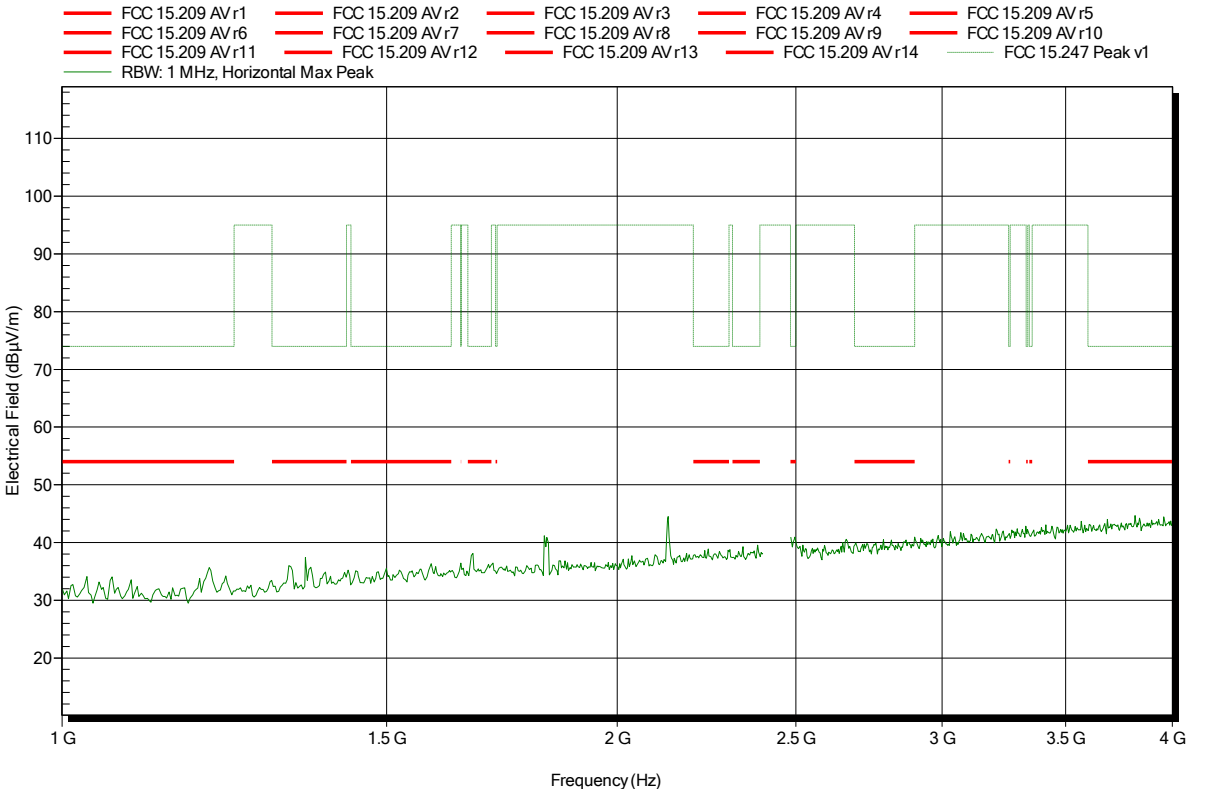

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A2 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A2 -90° horizontal

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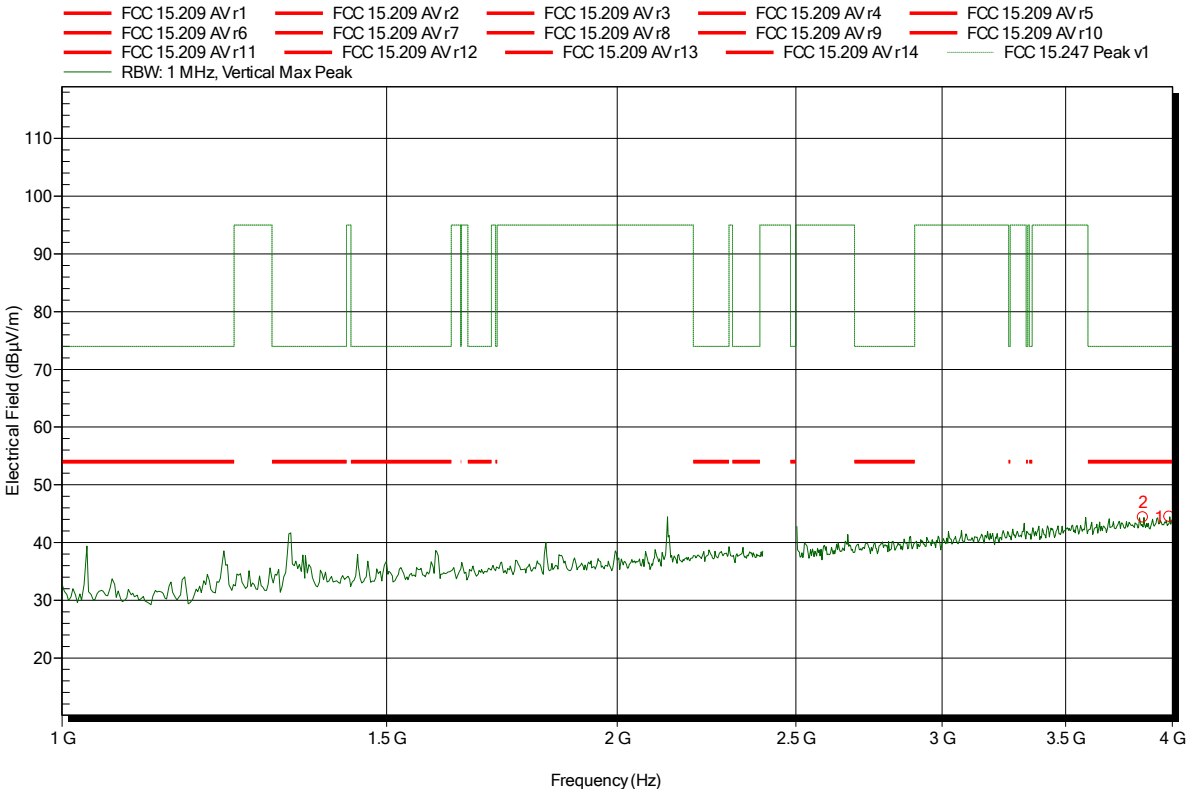

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.856 GHz	44.32 dBµV/m	74 dBµV/m	-29.68 dB	Pass
3.985 GHz	44.45 dBµV/m	74 dBµV/m	-29.55 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A2 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A2 -90° horizontal; higher bandedge

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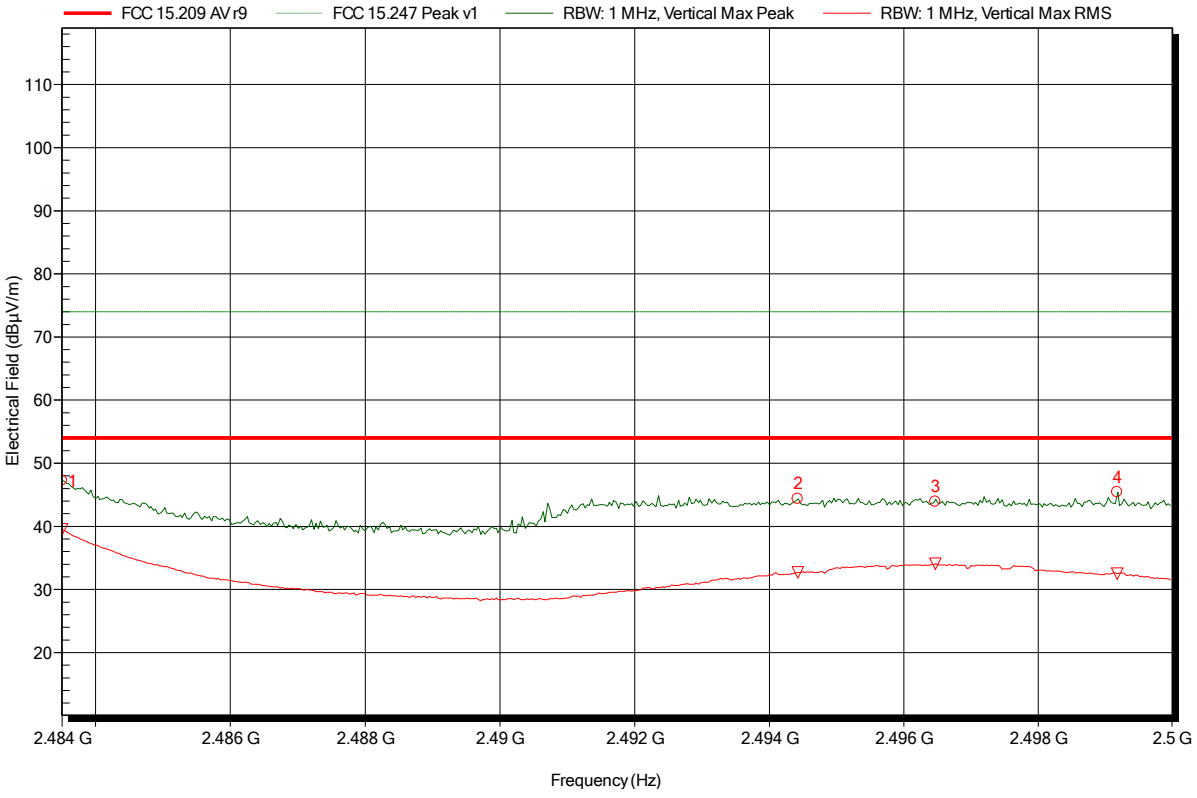

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.484 GHz	47.26 dBµV/m	74 dBµV/m	-26.74 dB	Pass
2.494 GHz	44.36 dBµV/m	74 dBµV/m	-29.64 dB	Pass
2.496 GHz	43.89 dBµV/m	74 dBµV/m	-30.11 dB	Pass
2.499 GHz	45.41 dBµV/m	74 dBµV/m	-28.59 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.484 GHz	39.53 dBµV/m	54 dBµV/m	-14.47 dB	Pass
2.494 GHz	32.73 dBµV/m	54 dBµV/m	-21.27 dB	Pass
2.496 GHz	34.11 dBµV/m	54 dBµV/m	-19.89 dB	Pass
2.499 GHz	32.52 dBµV/m	54 dBµV/m	-21.48 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A2 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A2 -90° horizontal

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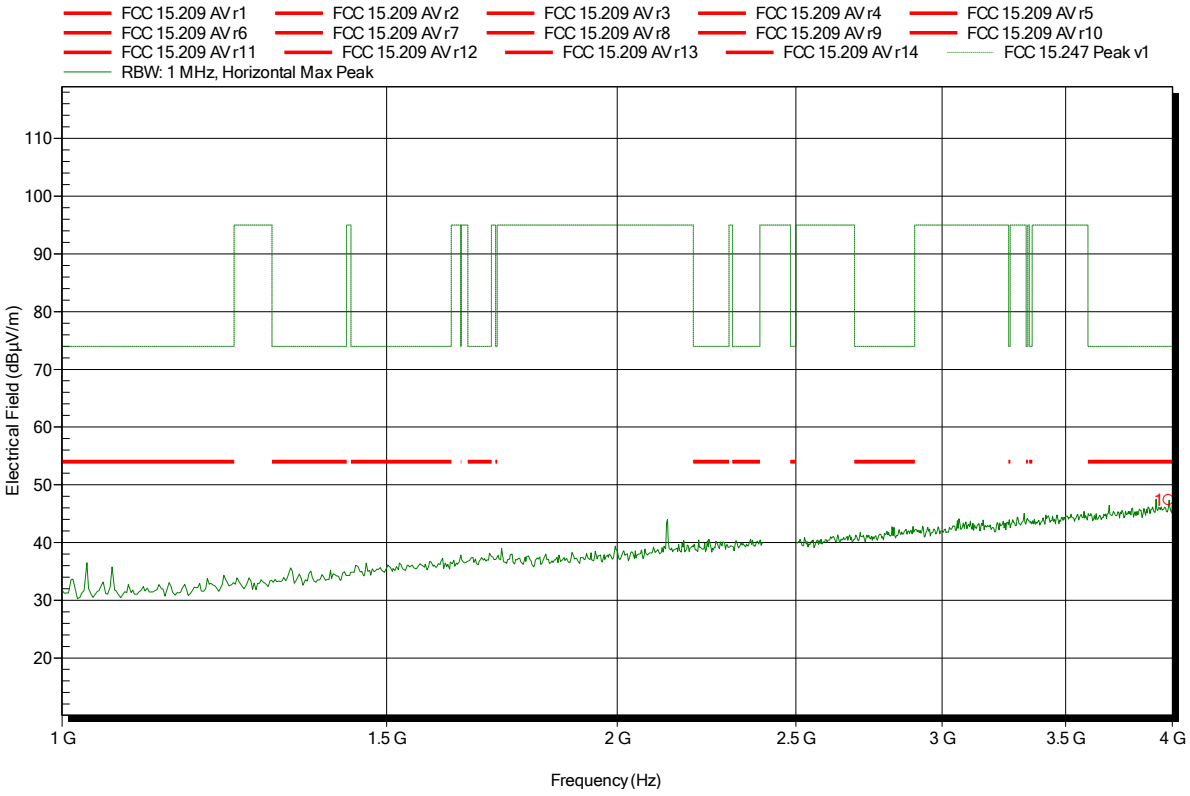

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
3.982 GHz	47.34 dBµV/m	74 dBµV/m	-26.66 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3 m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A2 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A2 -90° horizontal; higher bandedge

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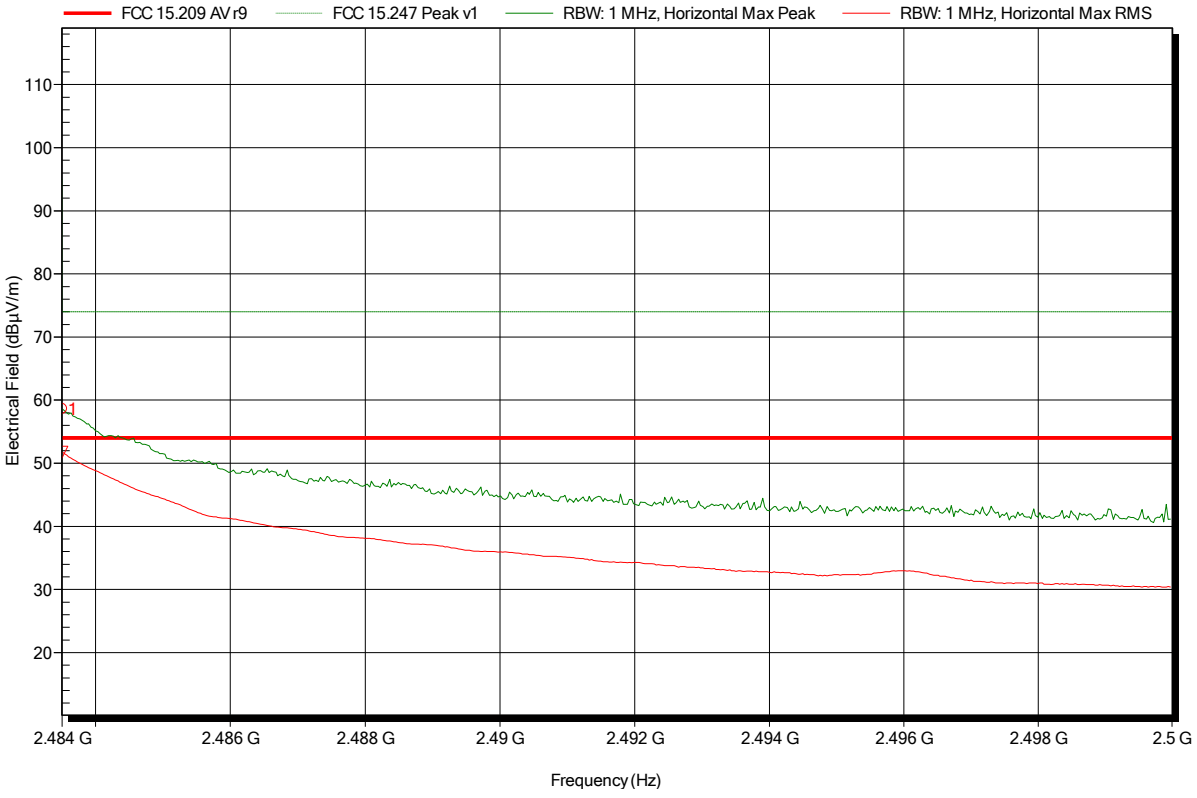

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
2.484 GHz	58.57 dBµV/m	74 dBµV/m	-15.43 dB	Pass

Frequency	RMS	RMS Limit	RMS Difference	RMS Status
2.484 GHz	51.8 dBµV/m	54 dBµV/m	-2.2 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal (43.48)

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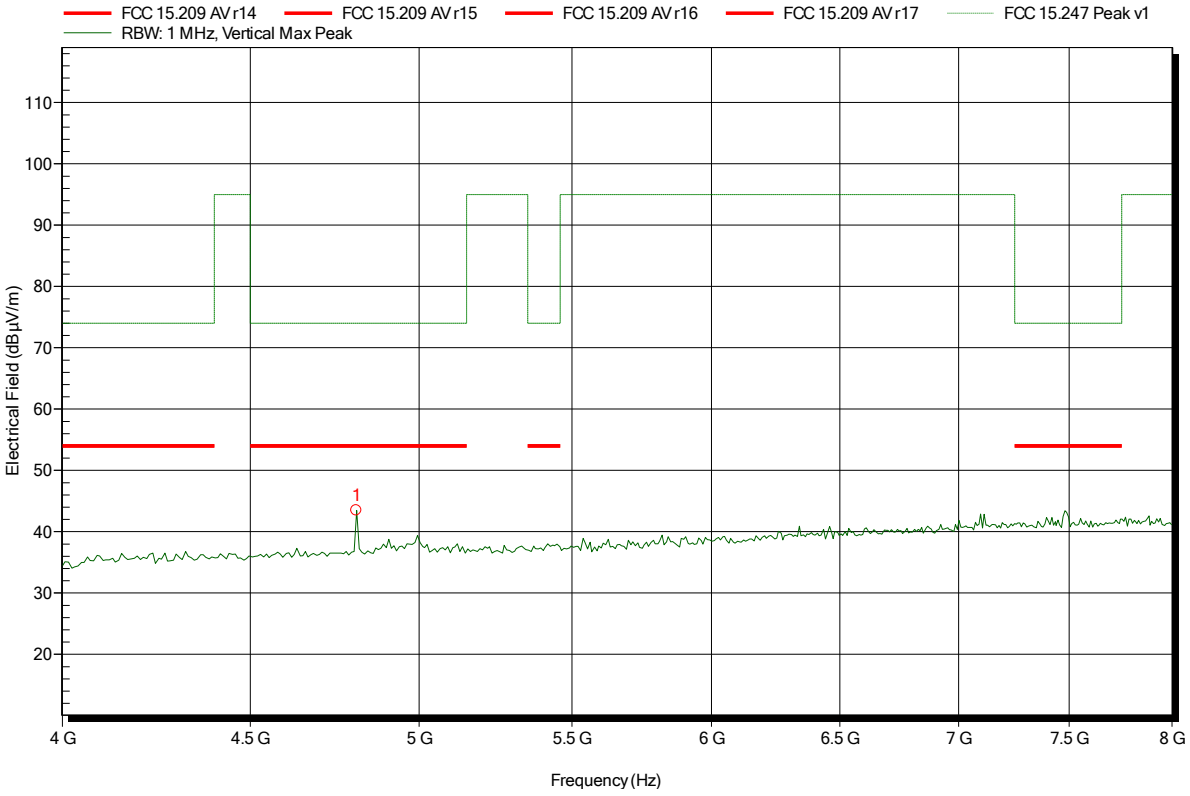

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.808 GHz	43.48 dBµV/m	74 dBµV/m	-30.52 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal (52.56)

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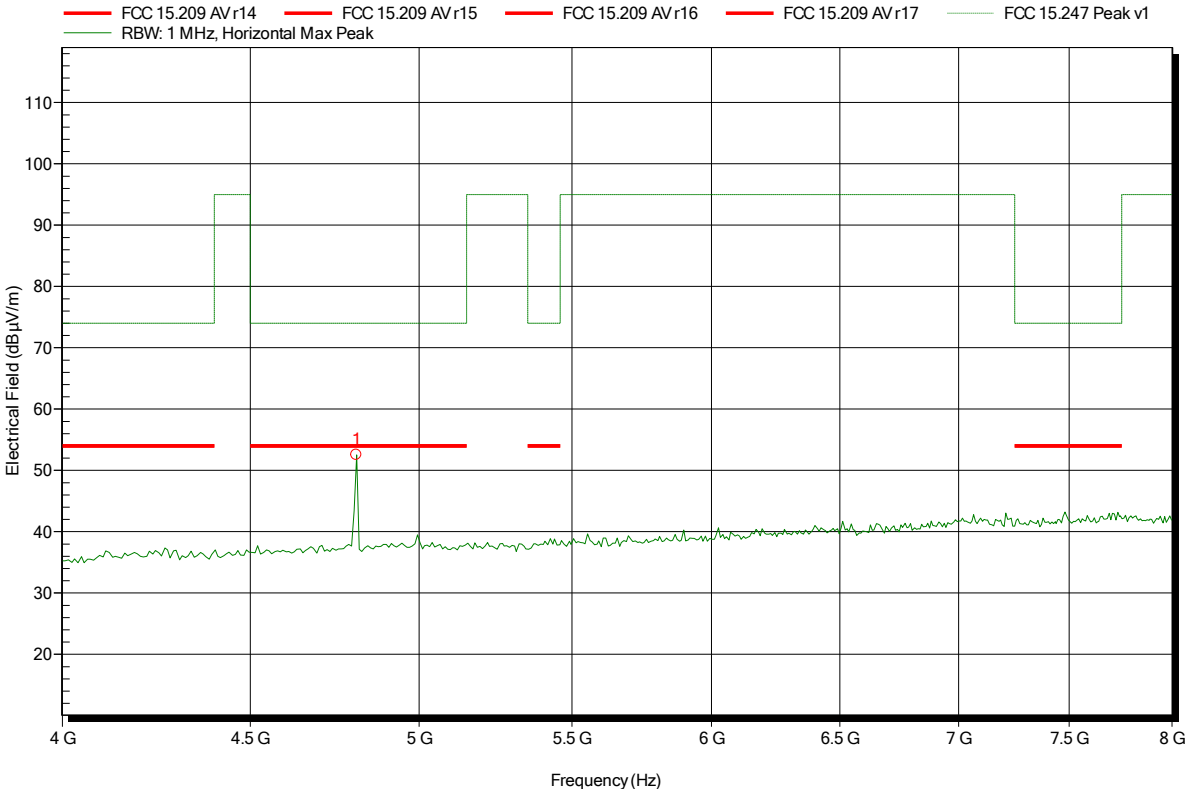

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.808 GHz	52.56 dBµV/m	74 dBµV/m	-21.44 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal (42.39)

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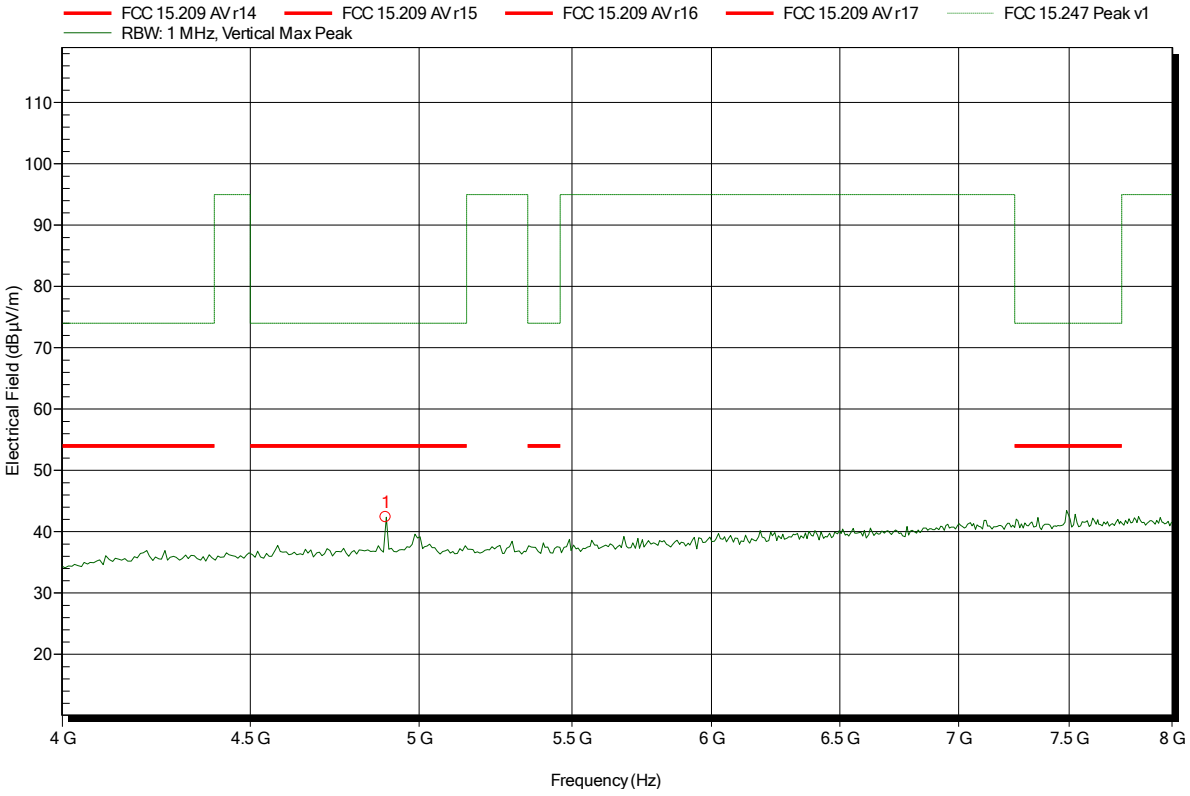

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.896 GHz	42.39 dBµV/m	74 dBµV/m	-31.61 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal (49.62)

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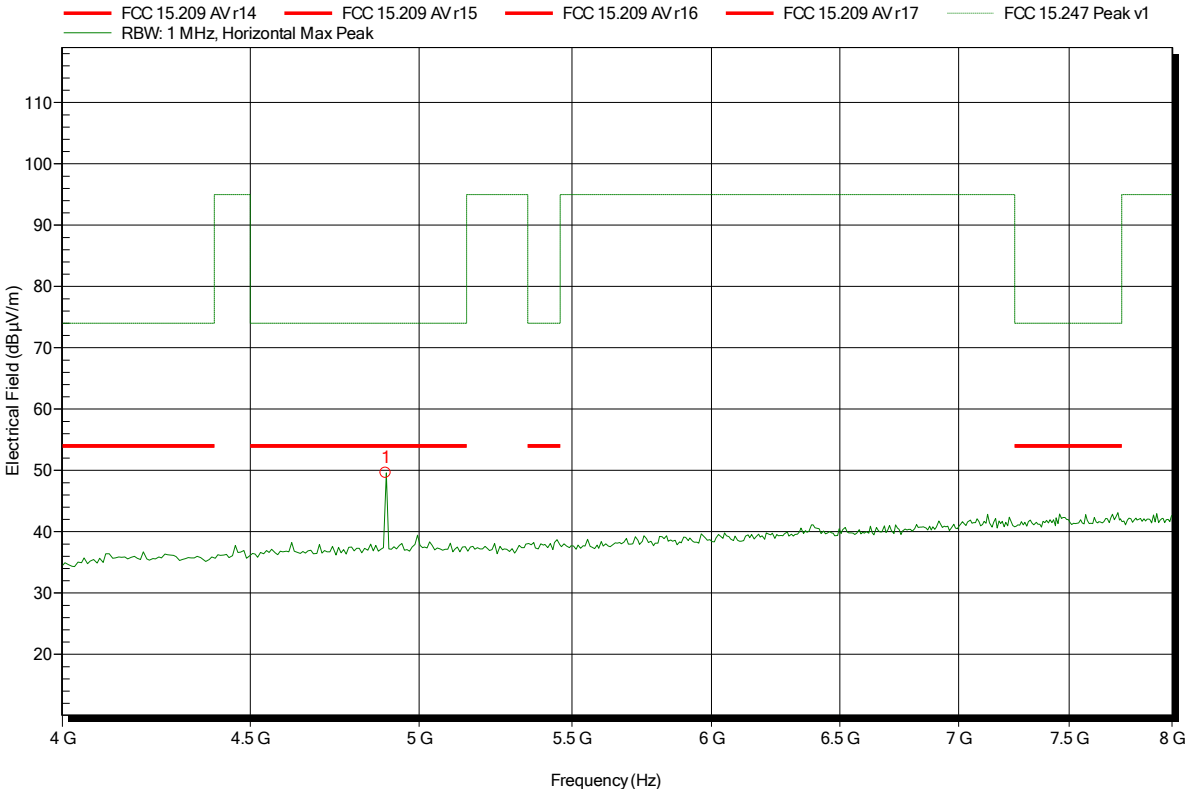

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
4.896 GHz	49.62 dBµV/m	74 dBµV/m	-24.38 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A2 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A2 -90° horizontal

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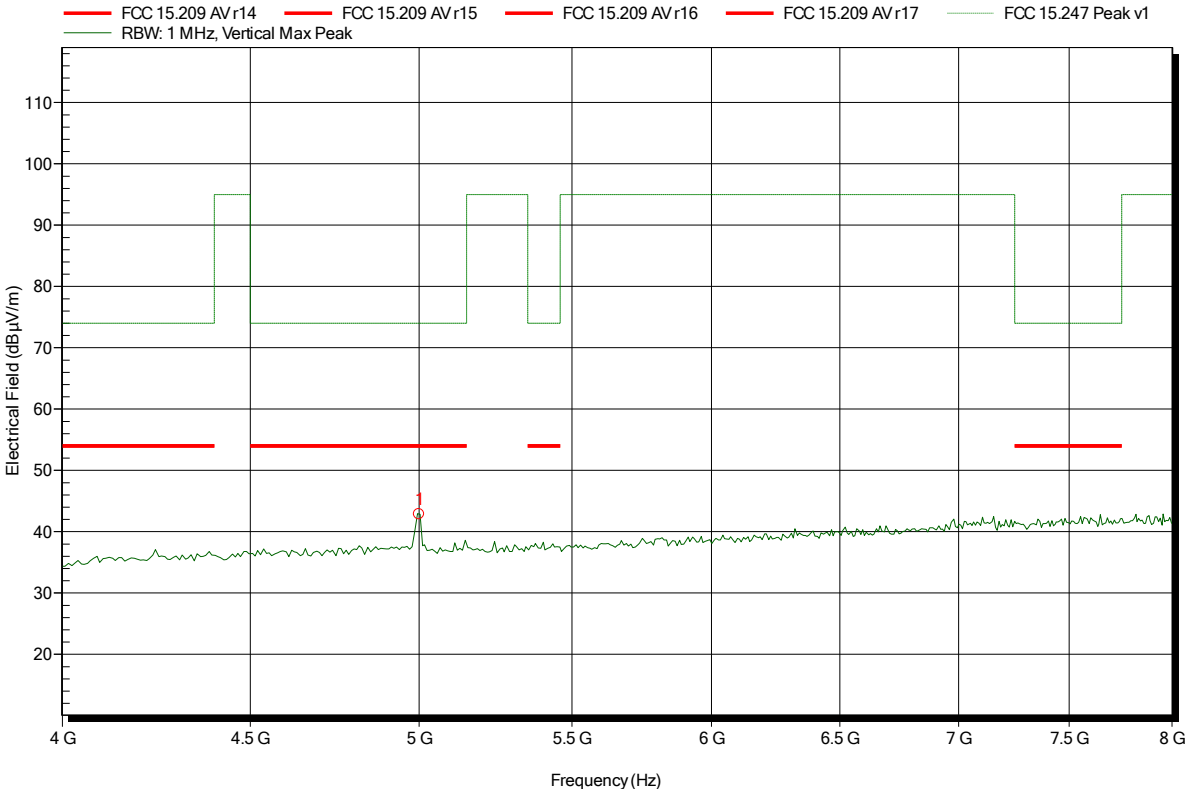

Frequency	Peak	Peak Limit	Peak Difference	Peak Status
5 GHz	42.86 dBµV/m	74 dBµV/m	-31.14 dB	Pass

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, "Quarter-Wave" ant.: A2 (-13)
Test Date:	2015-05-20
Note:	EUT horizontal, ant.: A2 -90° horizontal

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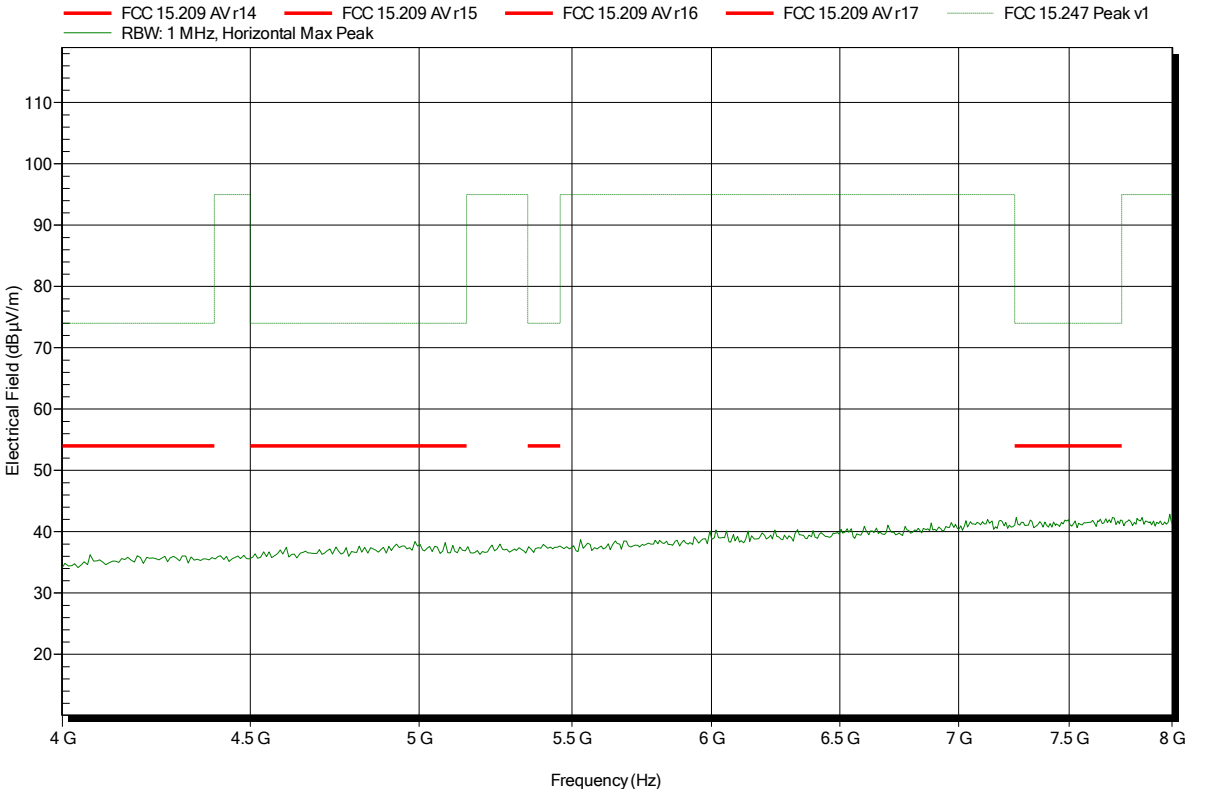

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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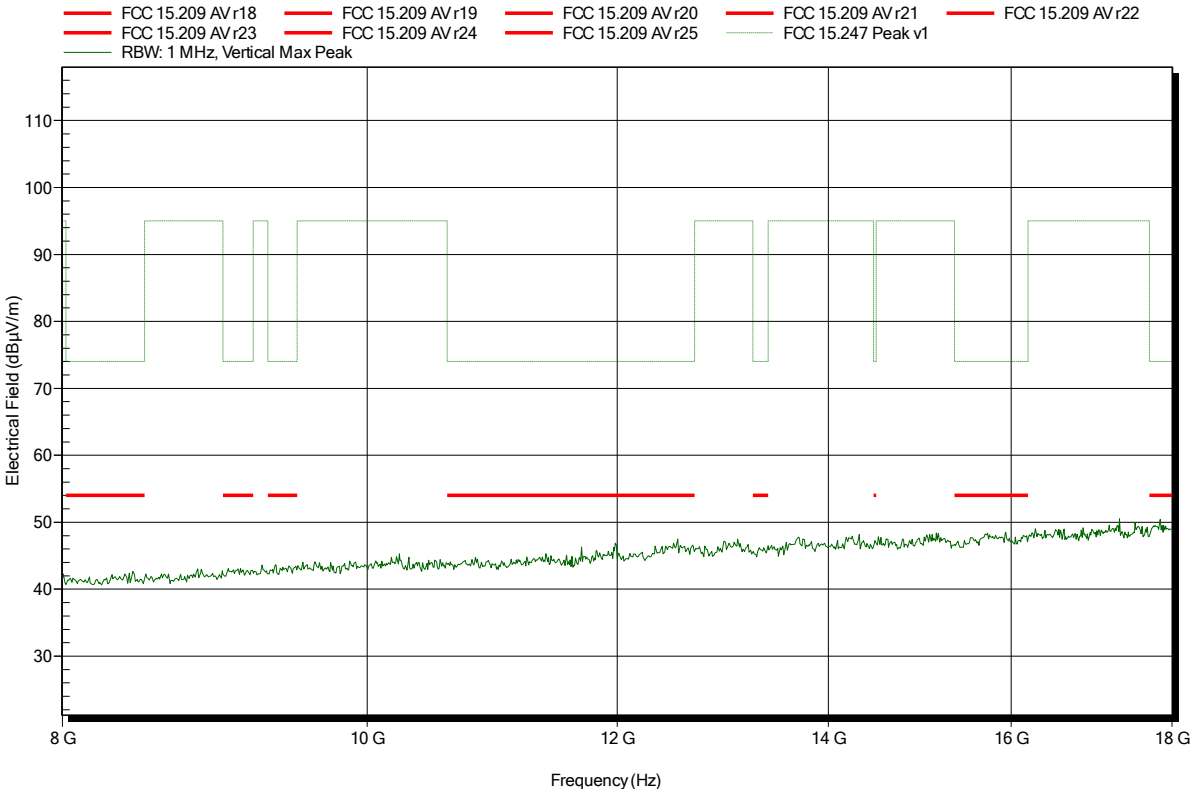

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2405 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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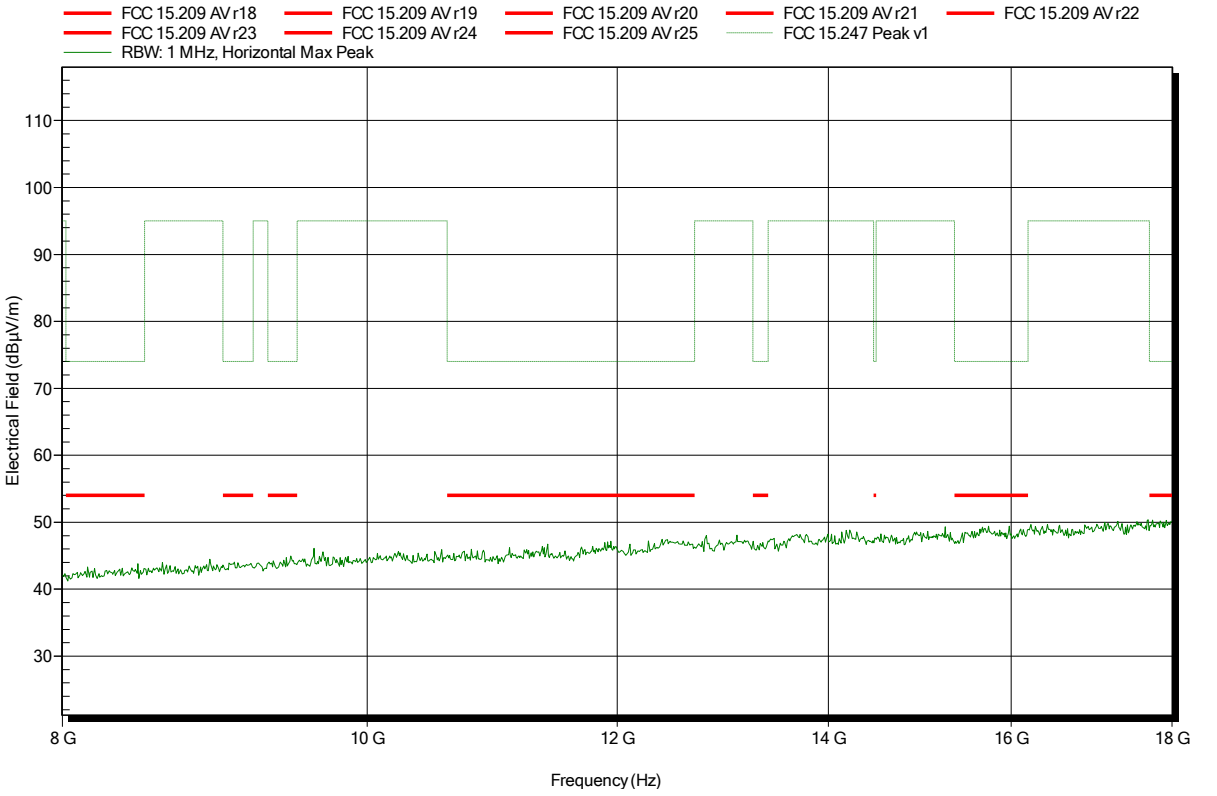

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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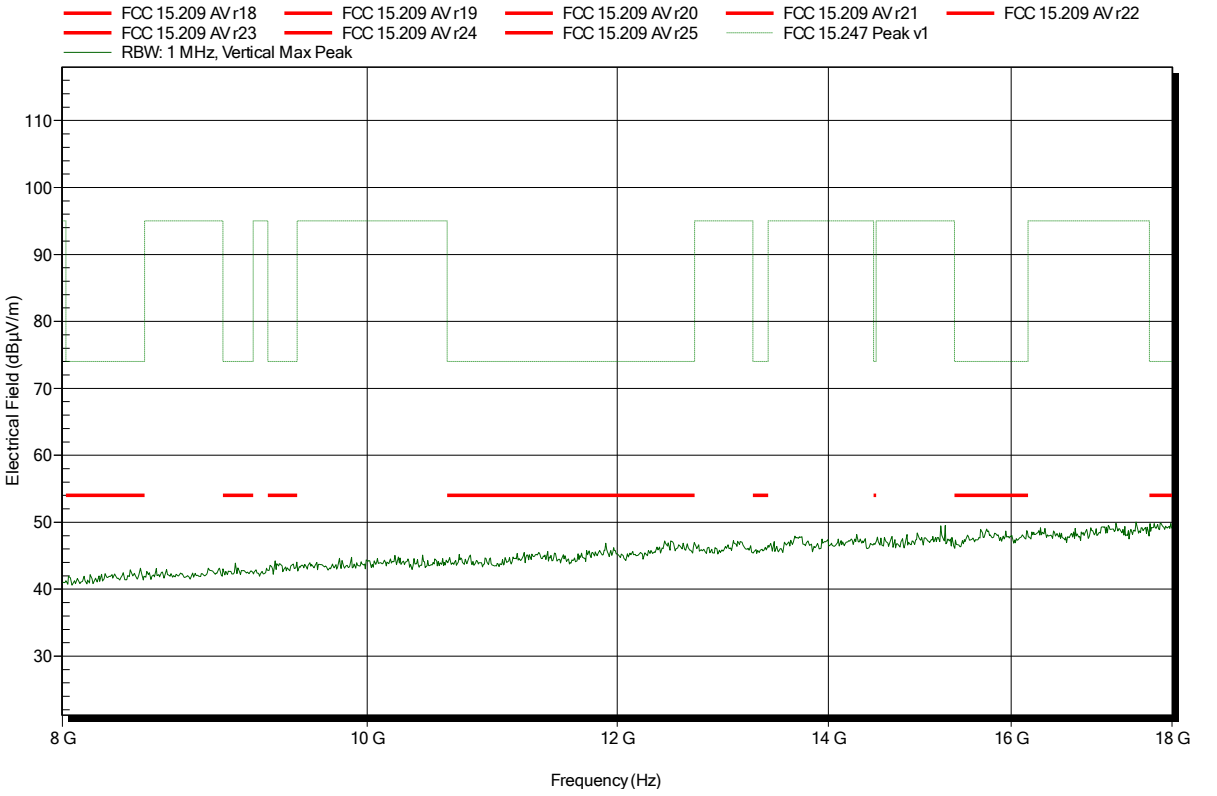

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; 2450 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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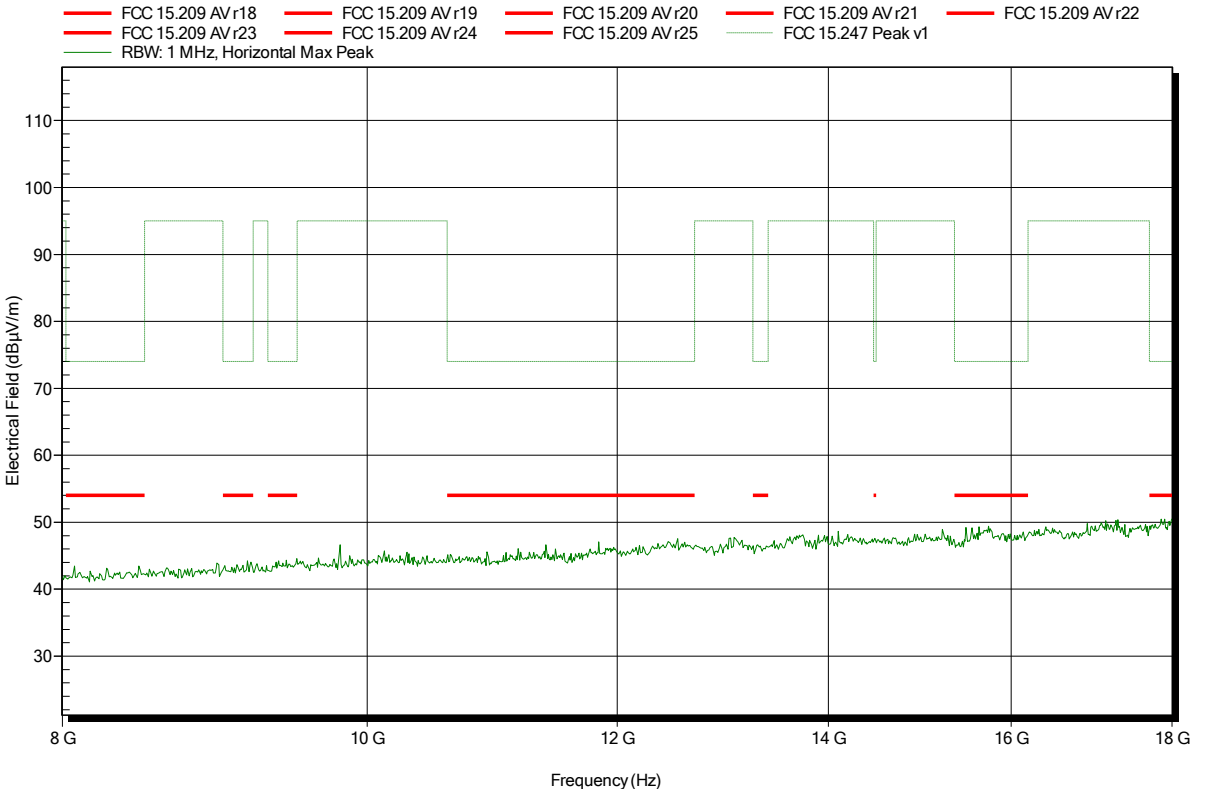

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Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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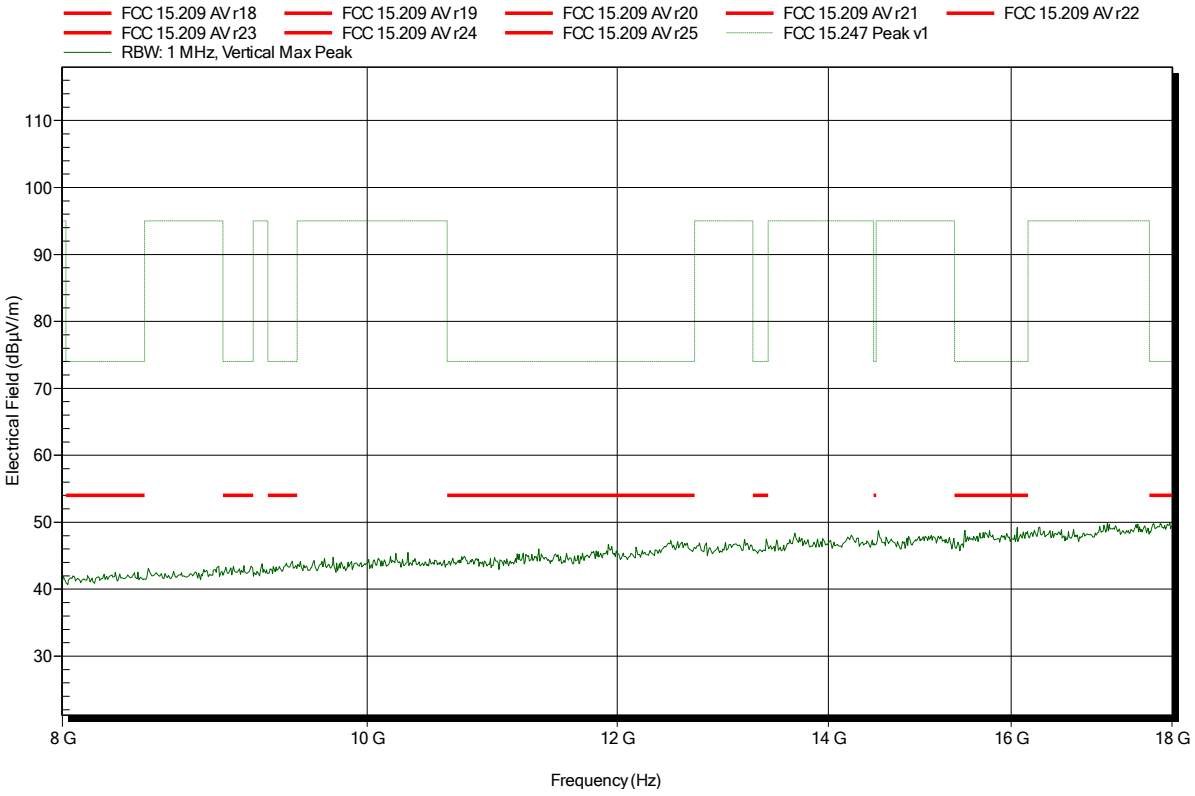

Spurious emissions according to FCC part 15 Subpart C § 15.247

Project number: G0M-1505-4730

Applicant:	Atmel Automotive GmbH
EUT Name:	ATSAMR21 Smart Connect Module with solder mount footprint
Model:	ATSAMR21G18-MR210UA
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Operator:	Mr. Handrik
Test Conditions:	Tnom: 22°C, Vnom: 5 V DC (USB)
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Measurement distance:	1 m converted to 3m
Mode:	TX; 2480 MHz, PRSB, 250kbps, "Quarter-Wave" ant.: A2
Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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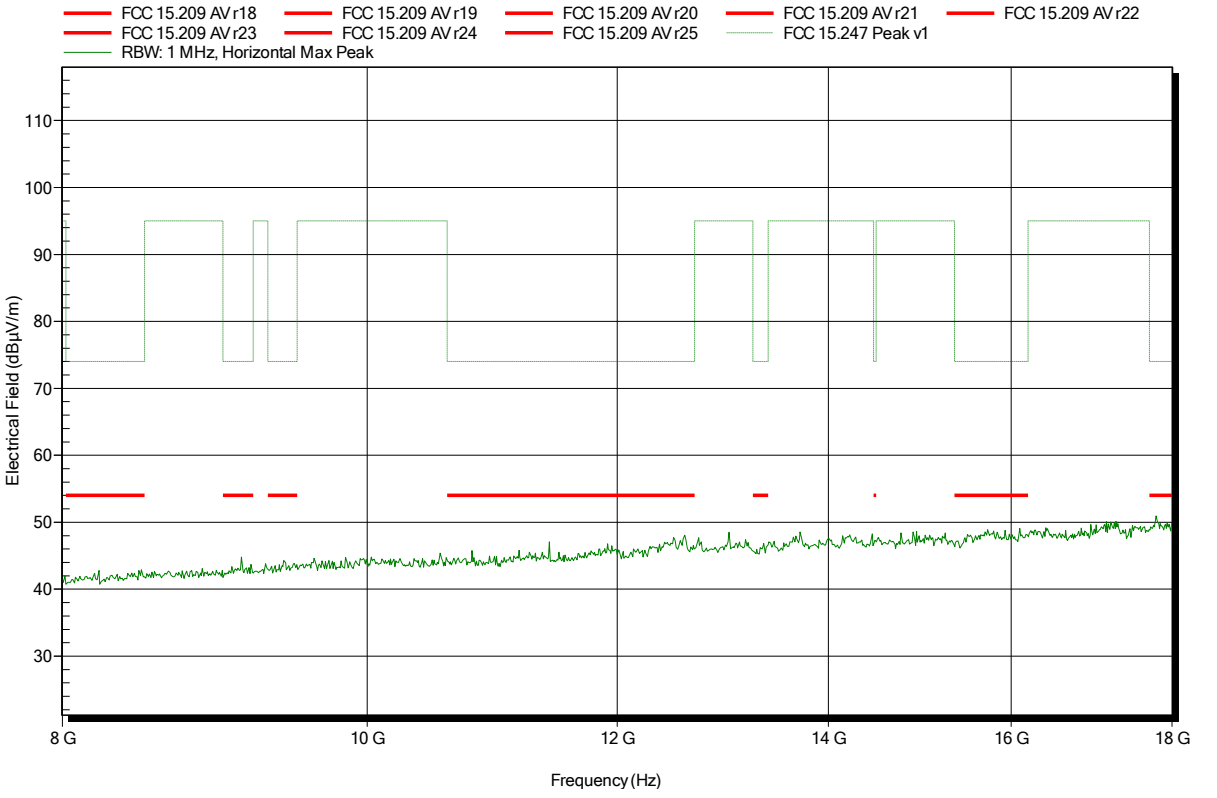

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Test Date:	2015-05-18
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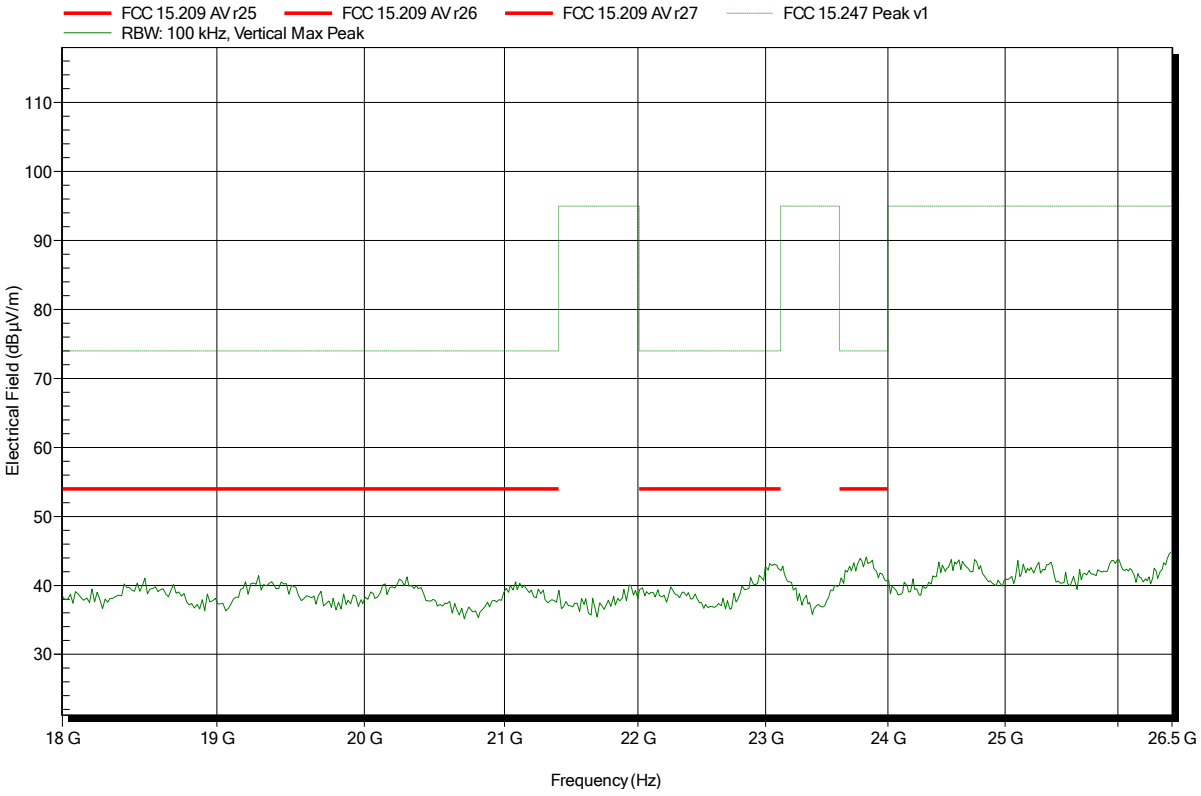

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Test Date:	2015-05-18
Note:	EUT horizontal, ant.: A2 -90° horizontal

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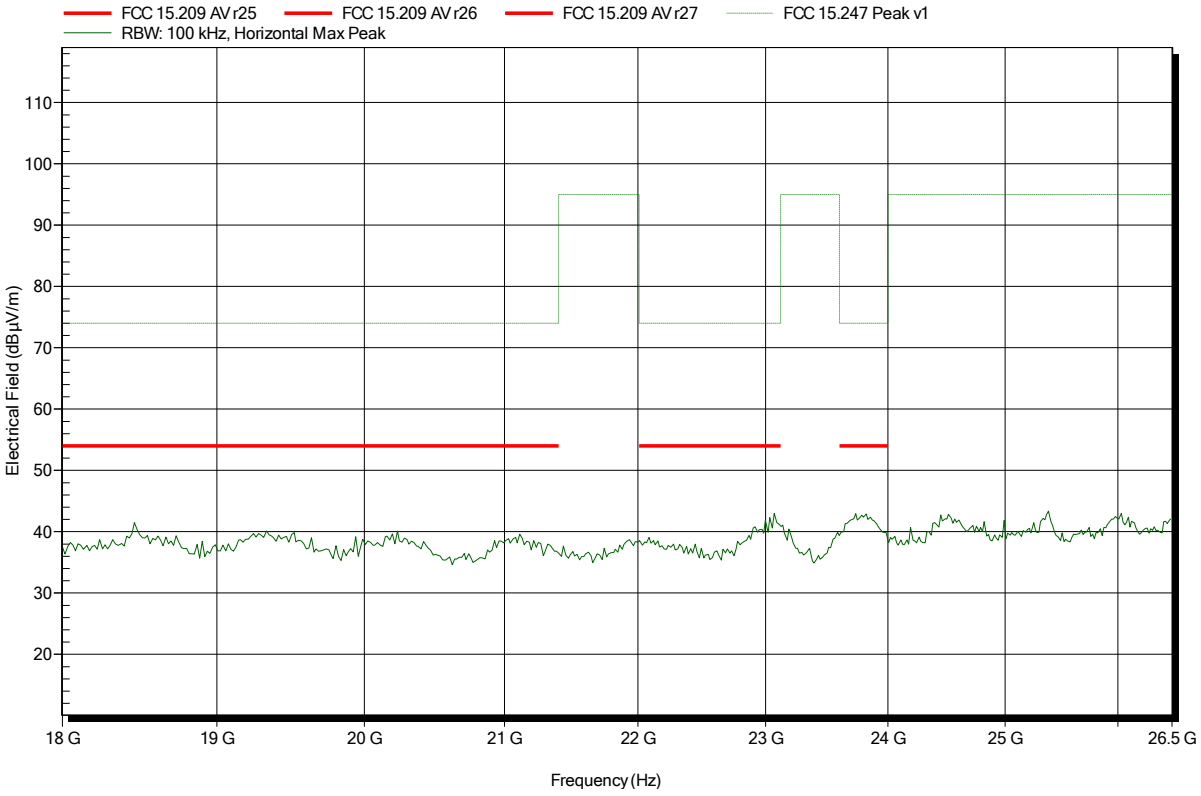

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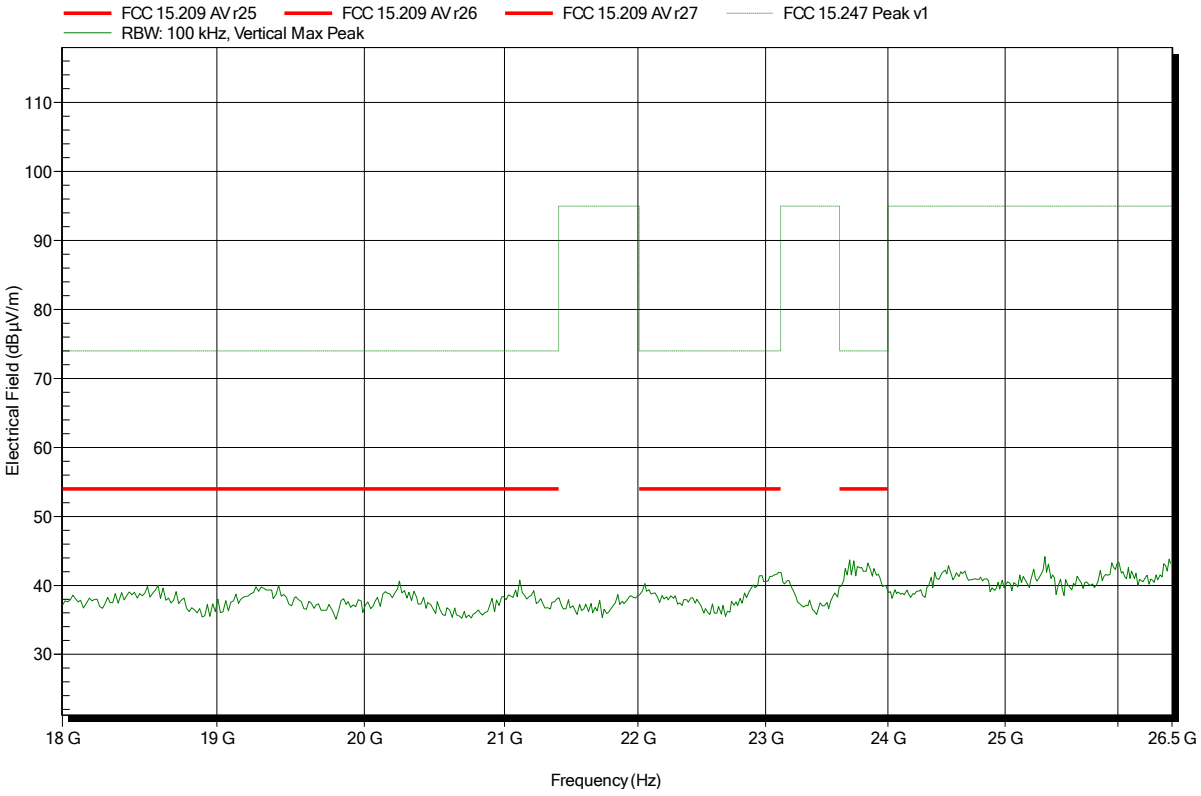

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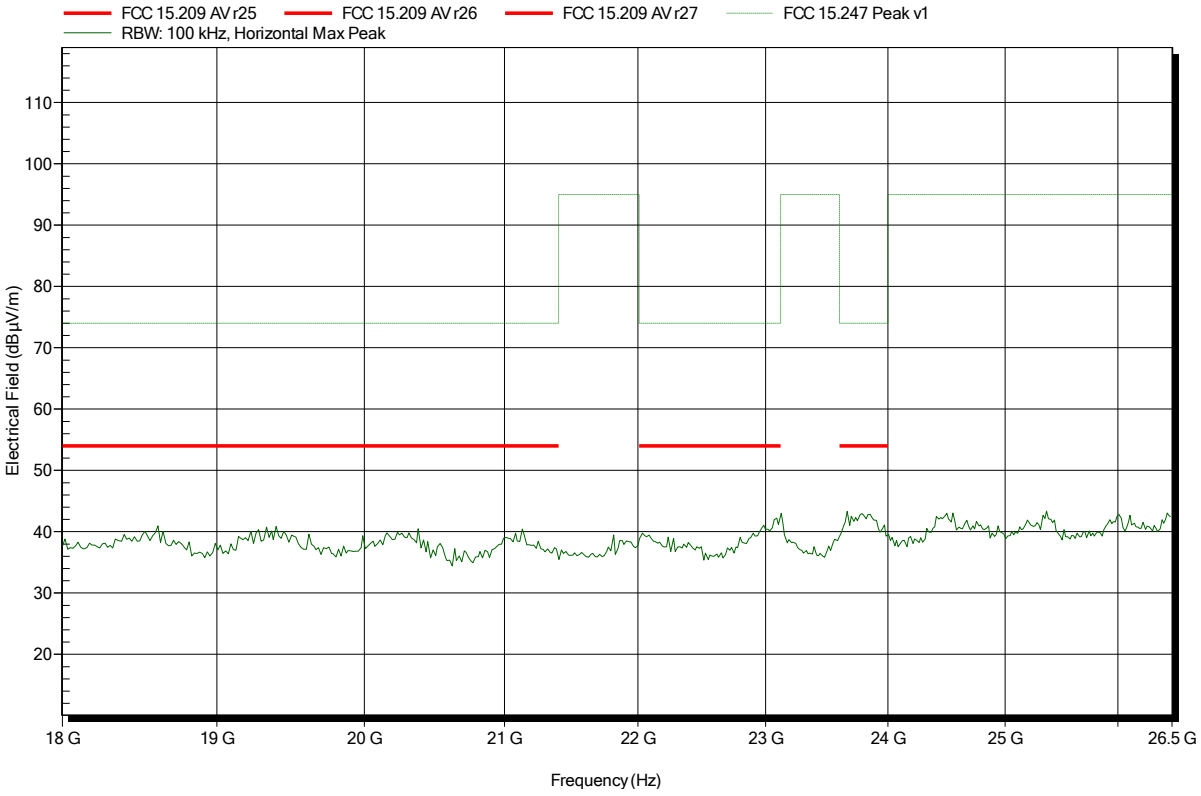

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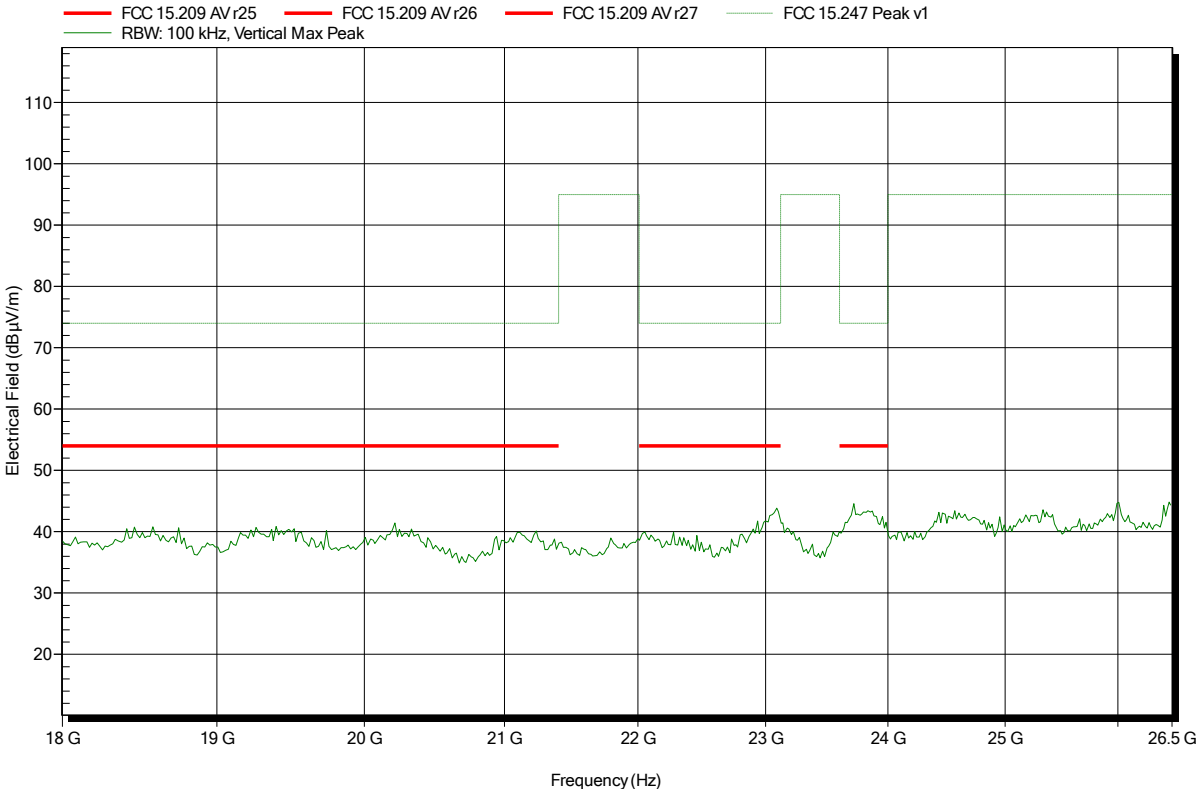

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