eurofins | Product Service

FCC TEST REPORT

FCC 47 CFR Part 15E
Industry Canada RSS-210
UNII systems operating within the 5150 – 5350 and 5470 – 5850 MHz band

Report Reference No.....:	G0M-1407-3973-TFC407WF-V02
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 IC OATS Filing assigned code: 3470A
Applicant's name.....:	BARTEC PIXAVI AS
Address.....:	Domkirkeplassen 2 4006 Stavanger NORWAY
Test specification:	
Standard.....:	47 CFR Part 15E KDB Publication No. 789033 D02 v01 RSS-210, Issue 8, 2010-12 RSS-Gen, Issue 3, 2010-12 ANSI C63.4:2009
Equipment under test (EUT):	
Product description	Smartphone
Model No.	ImpactX
Additional Model(s)	GravityX
Brand Name(s)	None
Hardware version	rev B0
Firmware / Software version	Android 4.2.2
	FCC-ID: YML-X7SERIES IC: 9249A-X7SERIES
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 ..... :	2014-08-05	
Date (s) of performance of tests ..... :	2014-10-06 - 2014-10-17	
Compiled by ..... :	Toralf Jahn	
Tested by (+ signature)..... : (Responsible for Test)	Toralf Jahn	.....
Approved by (+ signature) ..... :	Christian Weber	.....
Date of issue ..... :	2014-11-20	
Total number of pages ..... :	100	

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:

The additional model GravityX is identical to the model ImpactX. Both models use the same pcb and the same software. Only the mobile communication module is deactivated. Therefore the results for the WiFi tests are applicable to both models.

Version History

Version	Issue Date	Remarks	Revised by
01	2014-11-18	Initial Release	
02	2014-11-20	Sub-part 15C replaced by 15E	T. Jahn

REPORT INDEX

1 Equipment (Test item) Description

Description	Smartphone	
Model	ImpactX	
Additional Model(s)	GravityX	
Brand Name(s)	None	
Serial number	None	
Hardware version	rev B0	
Software / Firmware version	Android 4.2.2	
FCC-ID	YML-X7SERIES	
IC	9249A-X7SERIES	
Equipment type	End product	
Radio type	Transceiver	
Radio technology	IEEE 802.11 a/n (20 MHz only)	
Master / Client capabilities	Client without radar detection	
Operating frequency range	5180 - 5240 MHz	
Assigned frequency band	5150 - 5250 MHz	
Main test frequencies	Channel 36	5180 MHz
	Channel 40	5200 MHz
	Channel 48	5240 MHz
Spreading	OFDM	
Modulations	BPSK, QPSK, 16-QAM, 64-QAM	
Number of channels	4	
Channel spacing	20 MHz	
Number of antennas	1	
Antenna	Type	integrated
	Model	M830510
	Manufacturer	Ethertronics
	Gain	+3.5 dBi (manufacturer declaration)
Manufacturer	BARTEC PIXAVI AS Domkirkeplassen 2 4006 Stavanger NORWAY	
Power supply	V_{NOM}	3.7 VDC
	V_{MIN}	N/R
	V_{MAX}	N/R
Temperature range	T_{NOM}	+25°C
	T_{MIN}	-20°C
	T_{MAX}	+45°C

AC/DC-Adaptor	Model	AN4111
	Vendor	ANSMANN
	Input	100-240 VAC / 50-60 Hz
	Output	5.0 VDC / 1 A

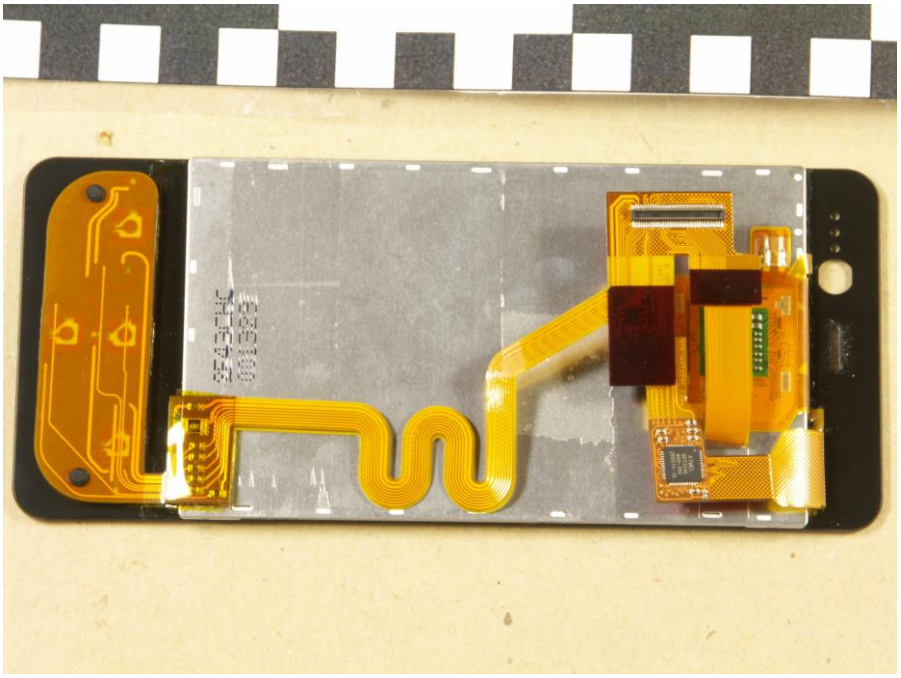
1.1 Photos – Equipment External

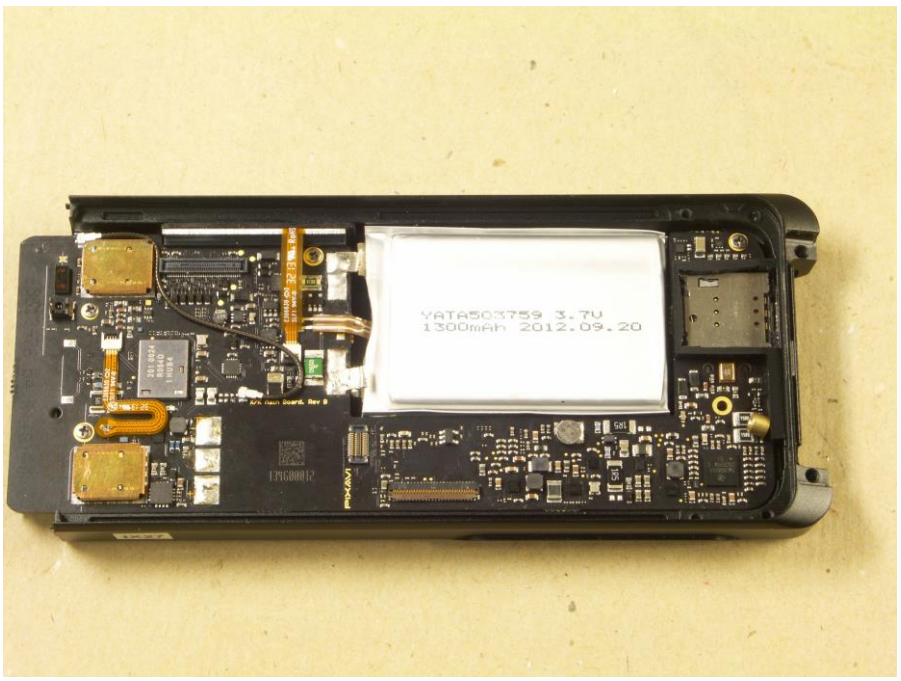
CONDUCTED SAMPLE FRONT

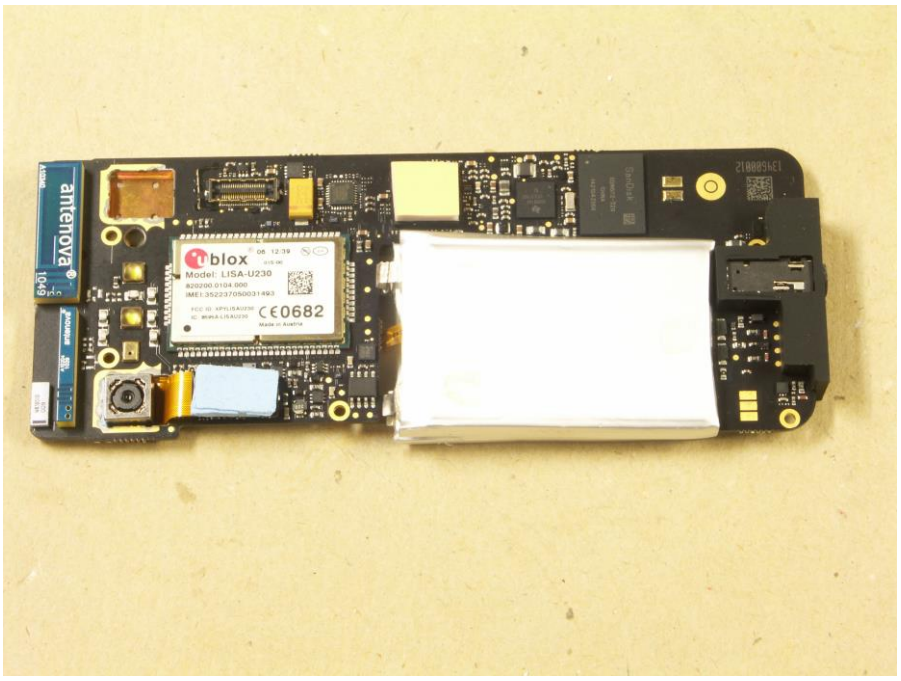

CONDUCTED SAMPLE BACK


RADIATED SAMPLE

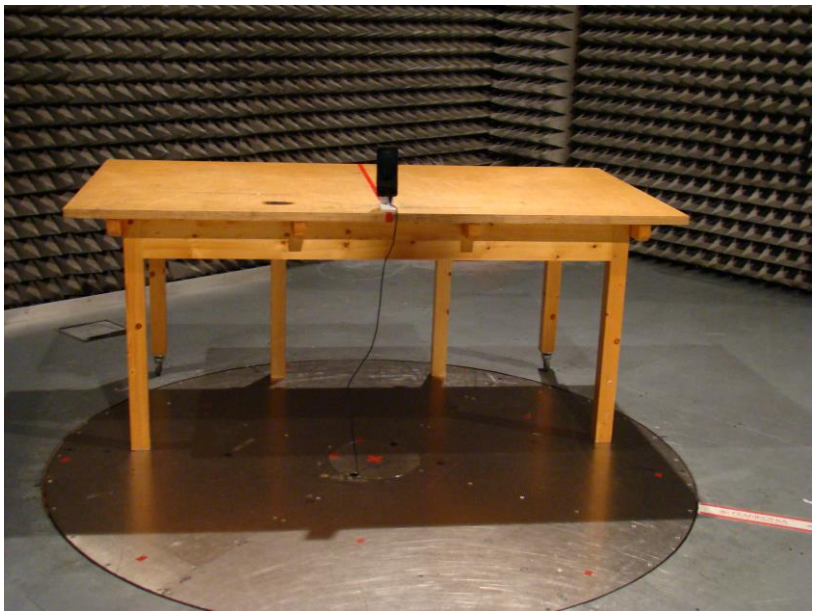

1.2 Photos – Equipment internal

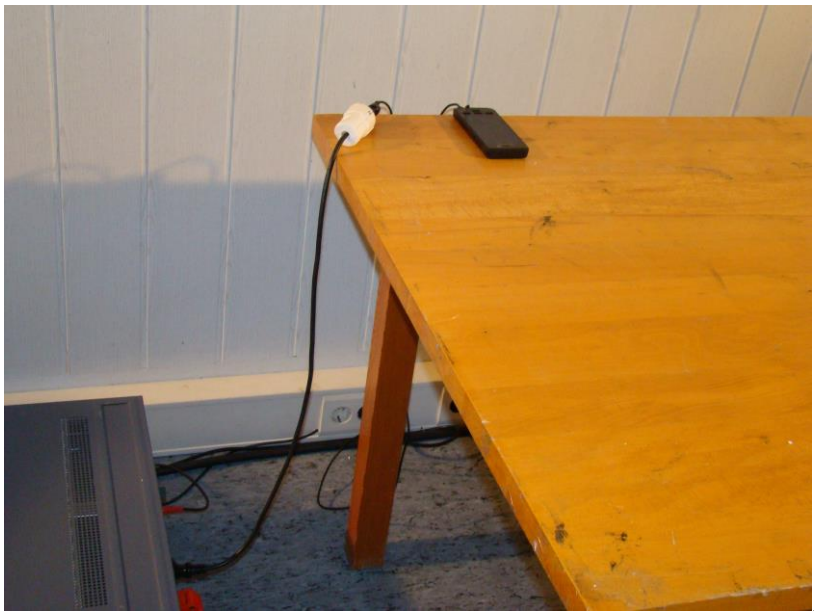
INSIDE


PCB


PCB


1.3 Photos – Test setup

RADIATED SETUP


CONDUCTED SETUP


1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
None				

***Note:** Use the fol1ing abbreviations:

AE : Auxiliary/Associated Equipment, or

SIM : Simulator (Not Subjected to Test)

CABL : Connecting cables

1.5 Test Modes

Mode #	Description	
OFDM	General conditions:	EUT powered via USB cable.
	Radio conditions:	Mode = standalone transmit Spreading = OFDM Modulation = BPSK Data rate = 6 Mbps Bandwidth = 20 MHz Duty cycle = 100 % Power level = 10 dBm firmware setting
HT20	General conditions:	EUT powered via USB cable.
	Radio conditions:	Mode = standalone transmit Spreading = OFDM Modulation = MCS0 (BPSK) Data rate = 6.5 Mbps Bandwidth = 20 MHz Duty cycle = 100 % Power level = 10 dBm firmware setting
Receive	General conditions:	EUT powered via USB cable.
	Radio conditions:	Mode = standalone receive Spreading = DSSS / OFDM
AC-Powerline	General conditions:	EUT powered by AC/DC adaptor.
	Radio conditions:	Mode = standalone transmit Spreading = OFDM 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

Occupied Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2014-02	2015-02

26 dB Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2014-02	2015-02

Maximum output power					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2014-02	2015-02

Power spectral density					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2014-02	2015-02

Band edge and Frequency Stability compliance					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2014-02	2015-02

Conducted spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum analyzer	R&S	FSW43	EF00896	2014-02	2015-02

Radiated spurious emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 1	EF00062	-	-
Spectrum Analyzer	R&S	FSIQ26	EF00242	2014-03	2015-03
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	2012-10	2014-10
EMI Test Receiver	R&S	ESCS 30	EF00295	2013-10	2014-10

1.7 Sample emission level calculation

The fol1ing 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 fol1s:

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 fol1ing 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 be1 the FCC limit. The units are given in dB. A negative margin indicates the emission was be1 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 15E, IC RSS-210				
Product Specific Standard Section	**Requirement – Test**	**Reference Method**	**Result**	**Remarks**
RSS-Gen 4.6.1	Occupied Bandwidth	RSS-Gen 4.6.1	N/R	Informational only
FCC § 15.407(a)(h)	26 dB emission bandwidth	KDB Publication No. 789033	N/R	No limit. Basis for other measurements.
FCC § 15.407(a) IC RSS-210 § A8.4 IC RSS-210 § A9.2	Maximum output power	KDB Publication No. 789033	PASS	
FCC § 15.407(a) IC RSS-210 § A8.2 IC RSS-210 § A9.2	Maximum power spectral density	KDB Publication No. 789033	PASS	
FCC § 15.407(b) IC RSS-210 § A8.5 IC RSS-210 § A9.2	Conducted spurious emissions at antenna port	KDB Publication No. 789033	PASS	
FCC § 15.407(b) IC RSS-210 § A8.5 IC RSS-210 § A9.2	Band edge compliance	KDB Publication No. 789033	PASS	
FCC § 15.407(g)	Frequency stability	KDB Publication No. 789033	PASS	
FCC § 15.407(a)(e) IC RSS-210 § A8.2	Minimum 6 dB Bandwidth	KDB Publication No. 789033	N/R	Only required in 5725 – 5850 MHz band.
FCC § 15.407(h) IC RSS-210 § A9.2	Transmit Power Control (TPC)	KDB Publication No. 789033	N/R	TPC is required in 5250 – 5350 MHz and 5470 – 5725 MHz bands. TPC is not required for EIRP < 500 mW.
FCC § 15.407(h) IC RSS-210 § A9.3	Dynamic Frequency Selection (DFS)	FCC Order, ET Docket No.03-122 (FCC 06-96)	N/R	DFS is required in 5250 – 5350 MHz and 5470 – 5725 MHz bands.
FCC § 15.407(b) FCC § 15.207 RSS-Gen 7.2.4	AC power line conducted emissions	KDB Publication No. 789033 / ANSI C63.4	PASS	
FCC § 15.407(b) FCC § 15.209 IC RSS-210 A8.5 IC RSS-Gen 4.9 IC RSS-Gen 7.2.5	Transmitter radiated spurious emissions	KDB Publication No. 789033 / ANSI C 63.4	PASS	
IC RSS-Gen 4.10 IC RSS-Gen 6.1	Receiver radiated spurious emissions	ANSI C 63.4	PASS	
Remarks:				

3 Test Conditions and Results

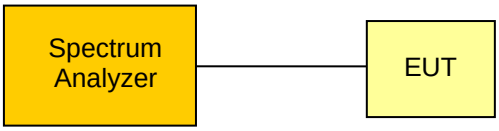
3.1 Test Conditions and Results – Occupied Bandwidth

Occupied Bandwidth acc. to IC RSS-Gen	**Verdict: PASS**
Test according to measurement reference	Reference Method
	RSS-Gen 4.6.1

Limits

None (Informational only)

Test setup



Test procedure

1. EUT set to test mode (Communication tester is used if needed)
2. Span set to at least twice the emission spectrum
3. Resolution bandwidth set to 1 % of span
4. Occupied Bandwidth (99 %) measurement with spectrum analyzer built in measurement function

Test results

Channel	Frequency [MHz]	Mode	Occupied Bandwidth [MHz]
36	5180 MHz	HT20	16.7
40	5200 MHz	HT20	16.7
48	5240 MHz	HT20	16.7
36	5180 MHz	OFDM	16.7
40	5200 MHz	OFDM	16.7
48	5240 MHz	OFDM	16.7

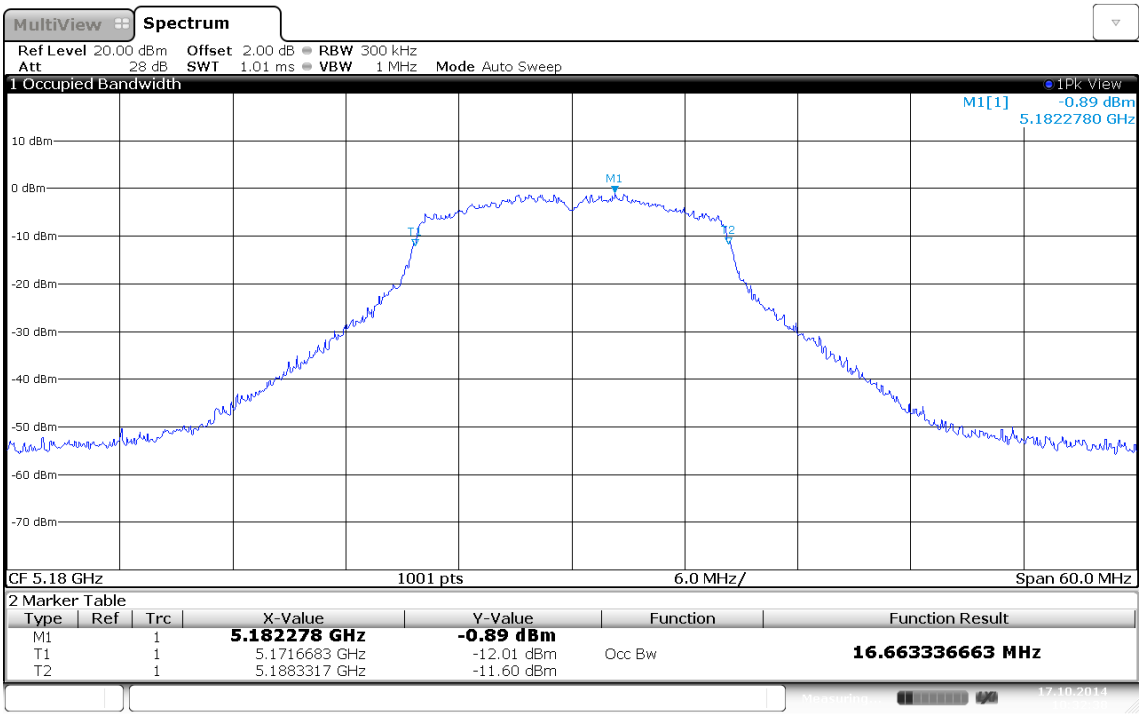
Comments:

Occupied Bandwidth – HT20 CH 36

99 Percent Occupied Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN HT20, 5180 MHz
Test Date:	2014-10-17
Verdict:	NONE (INFORMATION ONLY)
Note 1:	D. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	



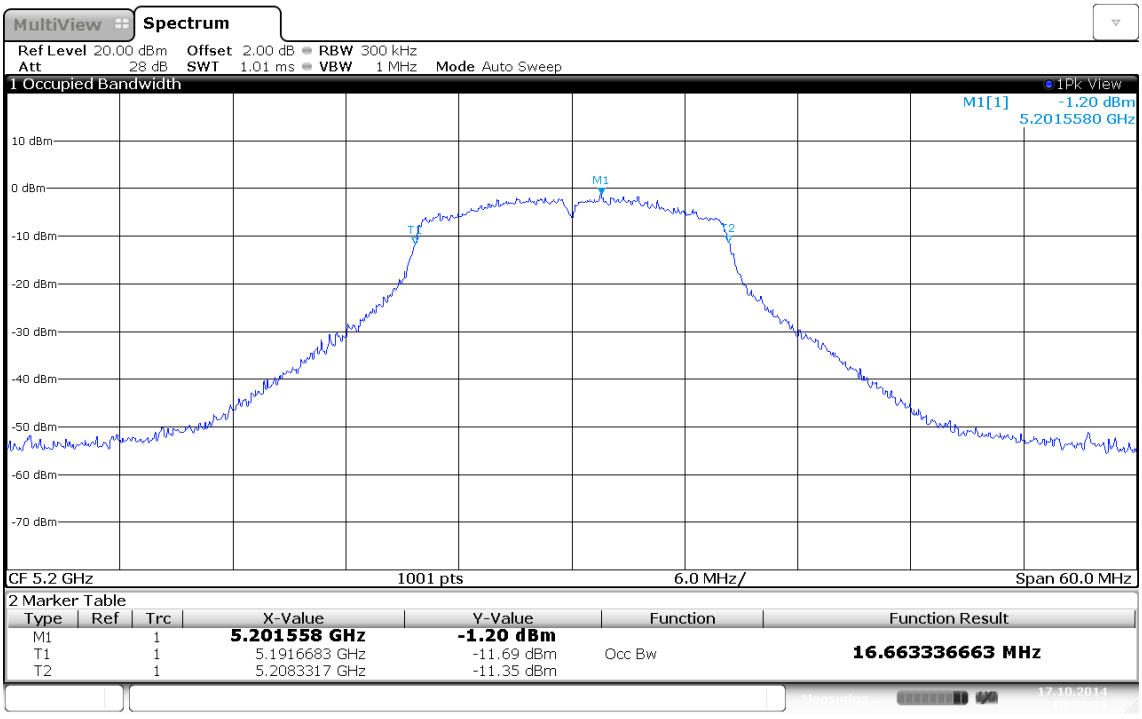
Occupied bandwidth: 16663.3 KHz
Date: 17.OCT.2014 10:32:39

Occupied Bandwidth – HT20 CH 40

99 Percent Occupied Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN HT20, 5200 MHz
Test Date:	2014-10-17
Verdict:	NONE (INFORMATION ONLY)
Note 1:	D. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	



Occupied bandwidth: 16663.3 KHz

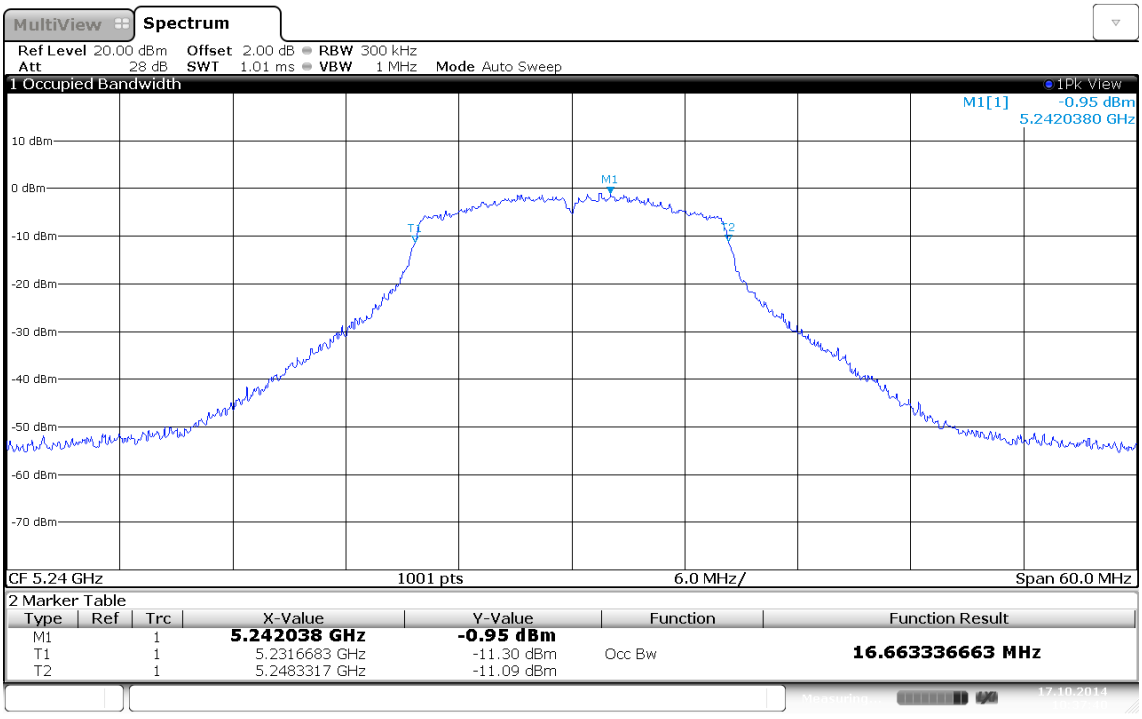
Date: 17.OCT.2014 10:35:21

Occupied Bandwidth – HT20 F_3

99 Percent Occupied Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN HT20, 5240 MHz
Test Date:	2014-10-17
Verdict:	NONE (INFORMATION ONLY)
Note 1:	D. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	



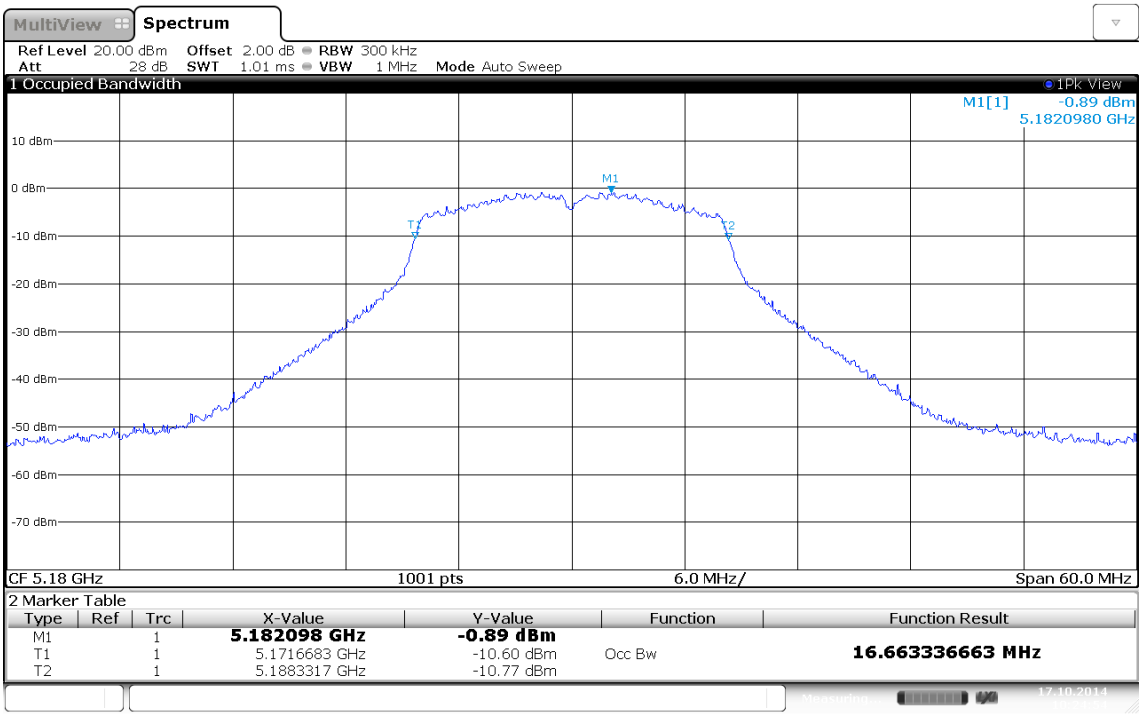
Occupied bandwidth: 16663.3 KHz
Date: 17.OCT.2014 10:37:39

Occupied Bandwidth – OFDM F_1

99 Percent Occupied Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN OFDM, 5180 MHz
Test Date:	2014-10-17
Verdict:	NONE (INFORMATION ONLY)
Note 1:	D. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	



Occupied bandwidth: 16663.3 KHz

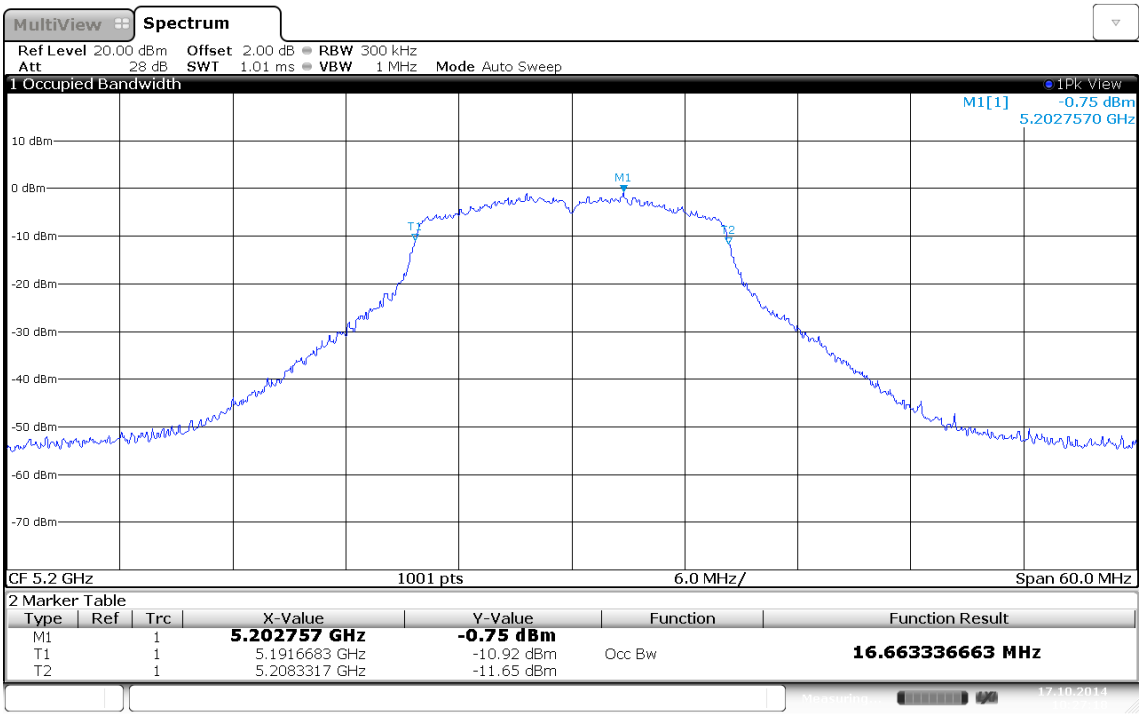
Date: 17.OCT.2014 10:24:54

Occupied Bandwidth – OFDM 5200 MHZ

99 Percent Occupied Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN OFDM, 5200 MHz
Test Date:	2014-10-17
Verdict:	NONE (INFORMATION ONLY)
Note 1:	D. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	



Occupied bandwidth: 16663.3 KHz

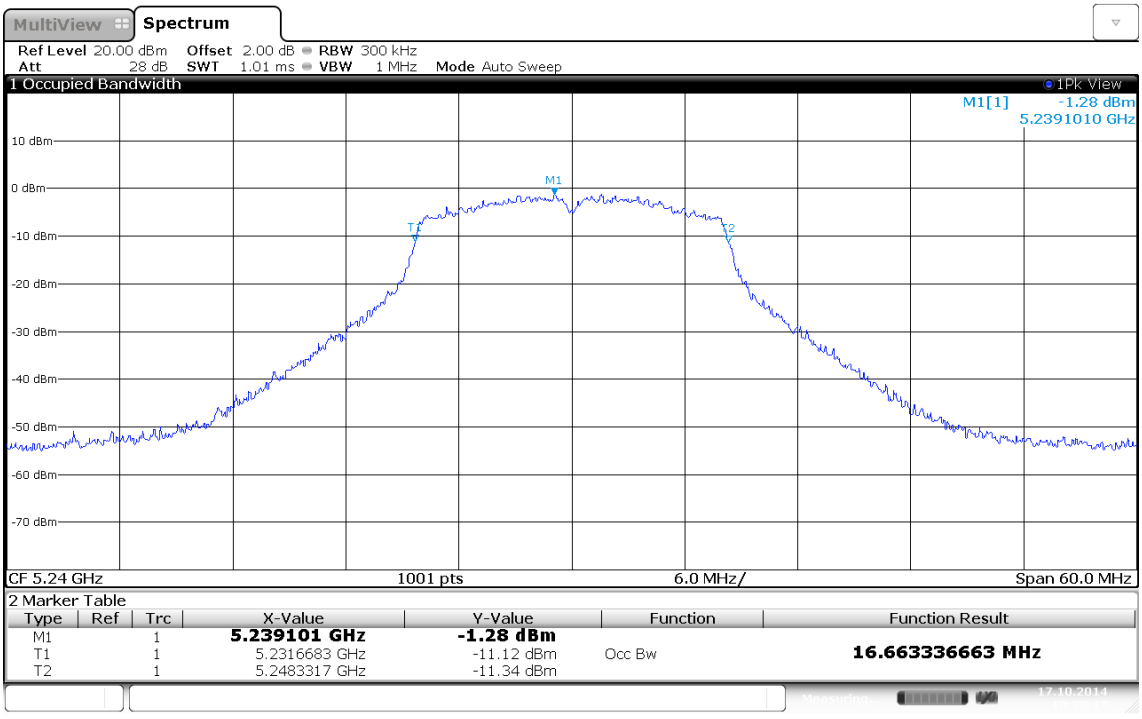
Date: 17.OCT.2014 10:27:18

Occupied Bandwidth – OFDM 5240 MHZ

99 Percent Occupied Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN OFDM, 5240 MHz
Test Date:	2014-10-17
Verdict:	NONE (INFORMATION ONLY)
Note 1:	D. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	



Occupied bandwidth: 16663.3 KHz

Date: 17.OCT.2014 10:28:16

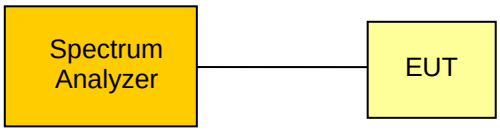
3.2 Test Conditions and Results – 26 dB Emission Bandwidth

26dB Bandwidth acc. FCC 15.407	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.407(a), (h)
Test according to measurement reference	Reference Method
	FCC KDB Publication No. 789033 C.1

Limits

No limit. Basis for other measurements.

Test setup



Test procedure

1. EUT set to test mode
2. RBW is set to approximately 1% of emission bandwidth and VBW > RBW.
3. Set detector to peak and trace to max hold
4. Envelope peak value of emission spectrum is selected
5. Set marker to level of -26 dB to the left of the peak
6. Set marker to level of -26 dB to the right of the peak
7. 26 dB Bandwidth is determined by marker frequency separation

Test results

Channel	Frequency [MHz]	Mode	26 dB bandwidth [MHz]
36	5180 MHz	HT20	23.04
40	5200 MHz	HT20	23.44
48	5240 MHz	HT20	23.68
36	5180 MHz	OFDM	23.36
40	5200 MHz	OFDM	23.20
48	5240 MHz	OFDM	23.60

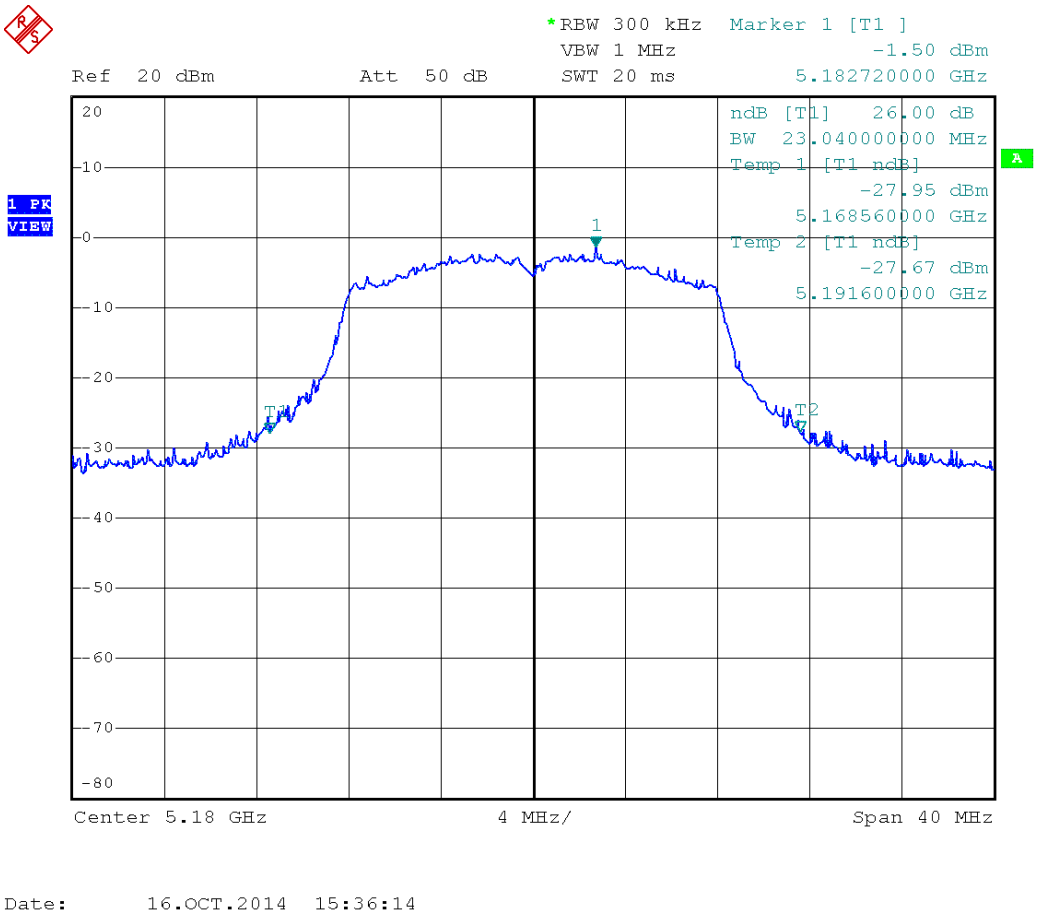
Comments:

26 dB Bandwidth – HT20 5180 MHZ

26 dB Emission Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN HT20, 5180 MHz
Test Date:	2014-10-15
Verdict:	PASS
Note 1:	C.1. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	

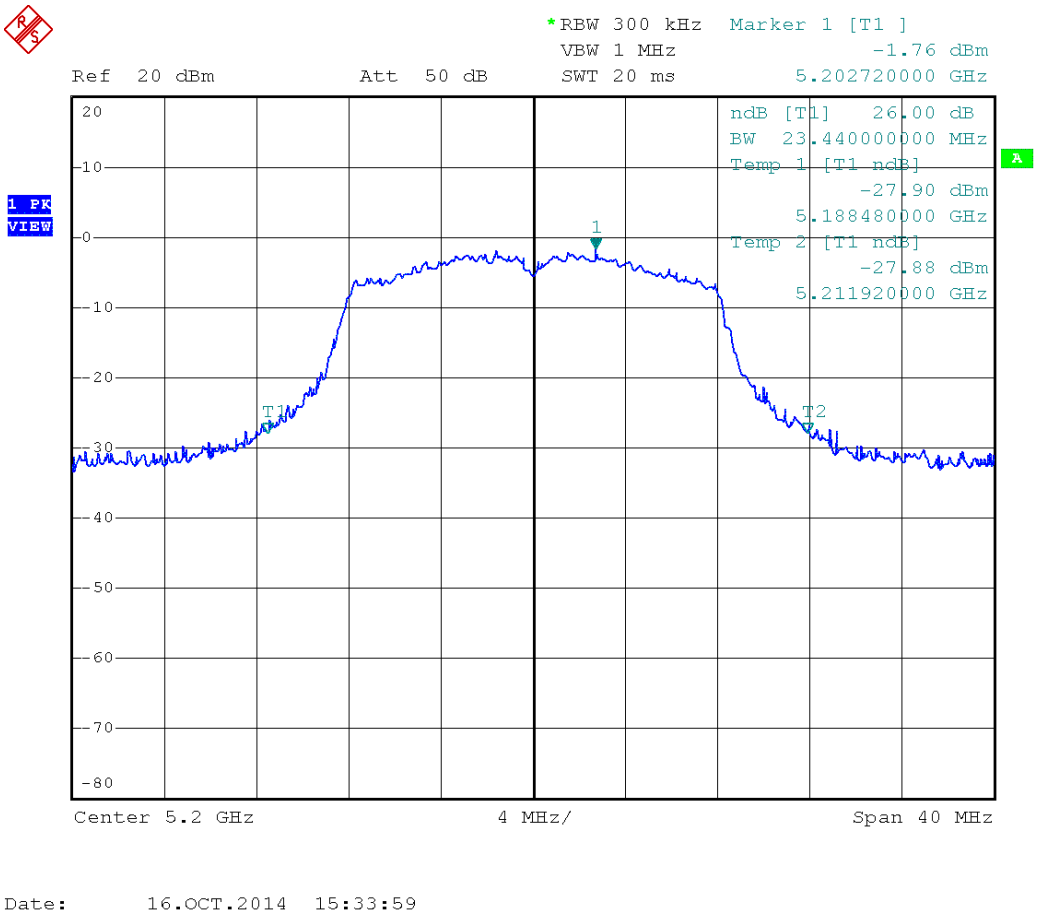


26 dB Bandwidth – HT20 5200 MHZ

26 dB Emission Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN HT20, 5200 MHz
Test Date:	2014-10-15
Verdict:	PASS
Note 1:	C.1. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	

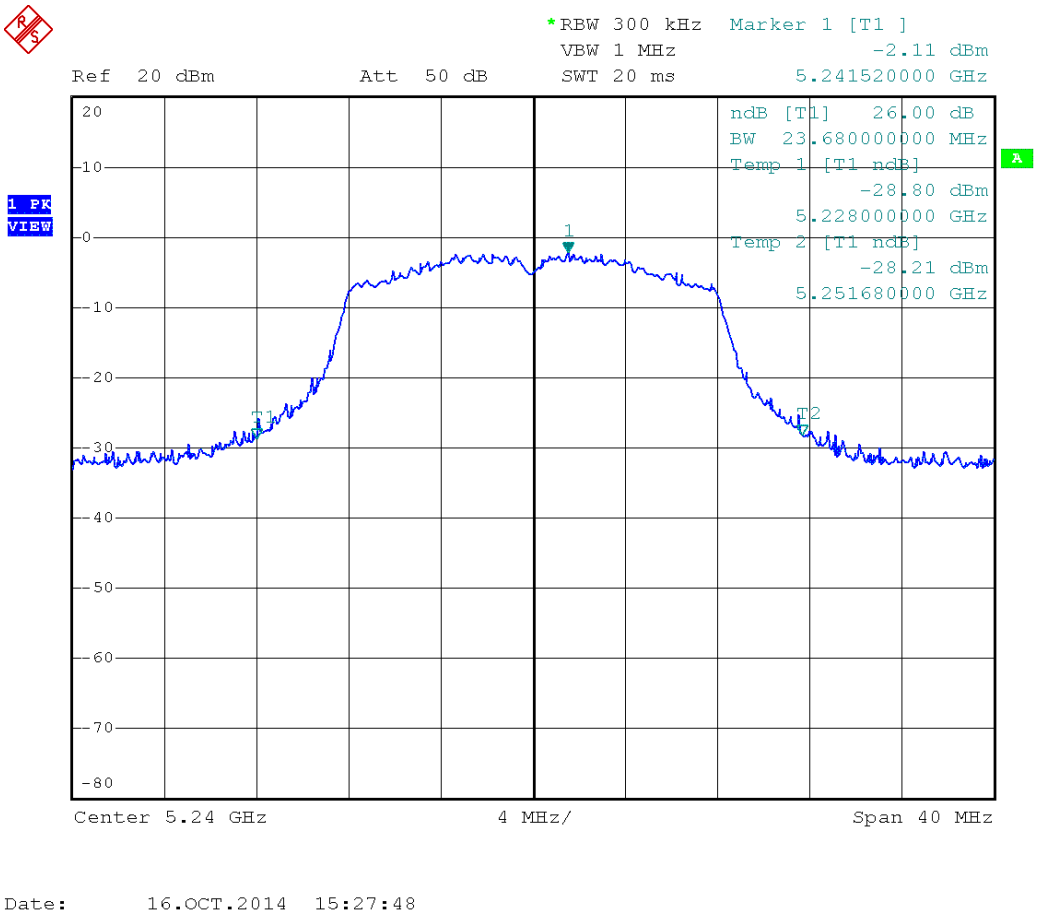


26 dB Bandwidth – HT20 5240 MHZ

26 dB Emission Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN HT20, 5240 MHz
Test Date:	2014-10-15
Verdict:	PASS
Note 1:	C.1. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	

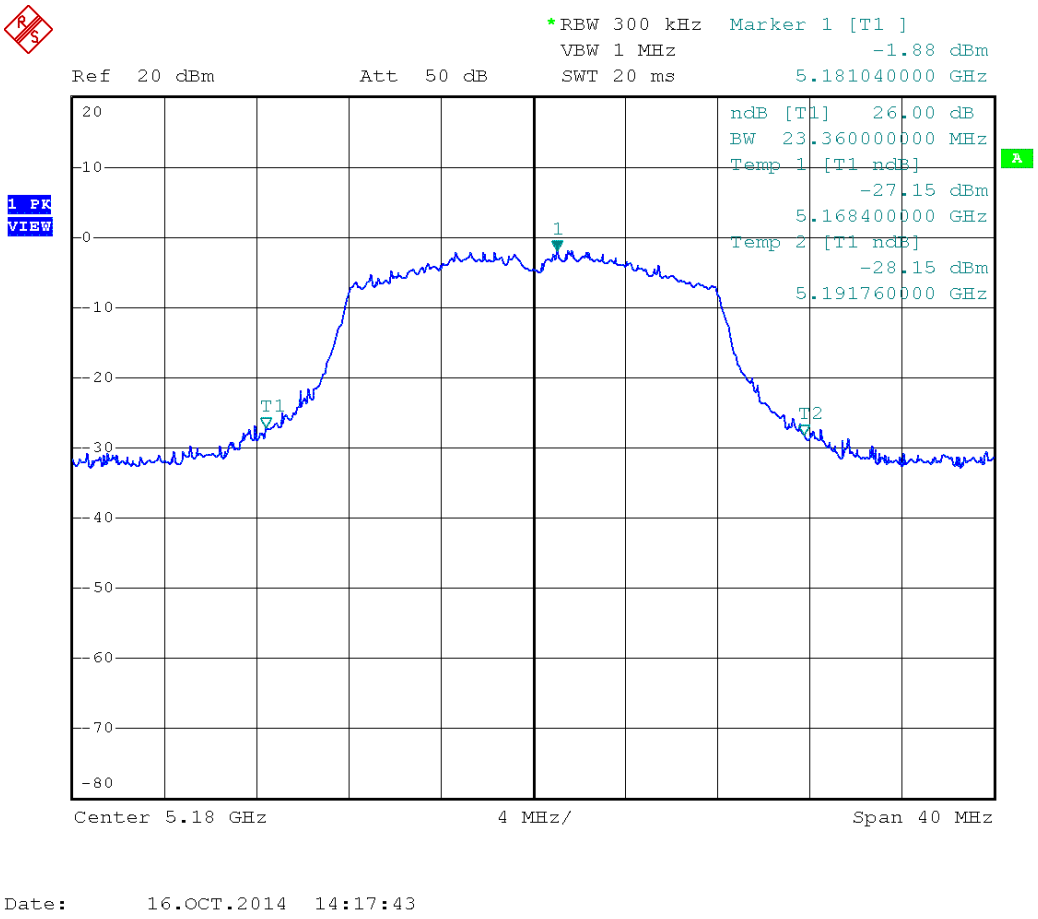


26 dB Bandwidth – OFDM 5180 MHZ

26 dB Emission Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN OFDM, 5180 MHz
Test Date:	2014-10-15
Verdict:	PASS
Note 1:	C.1. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	

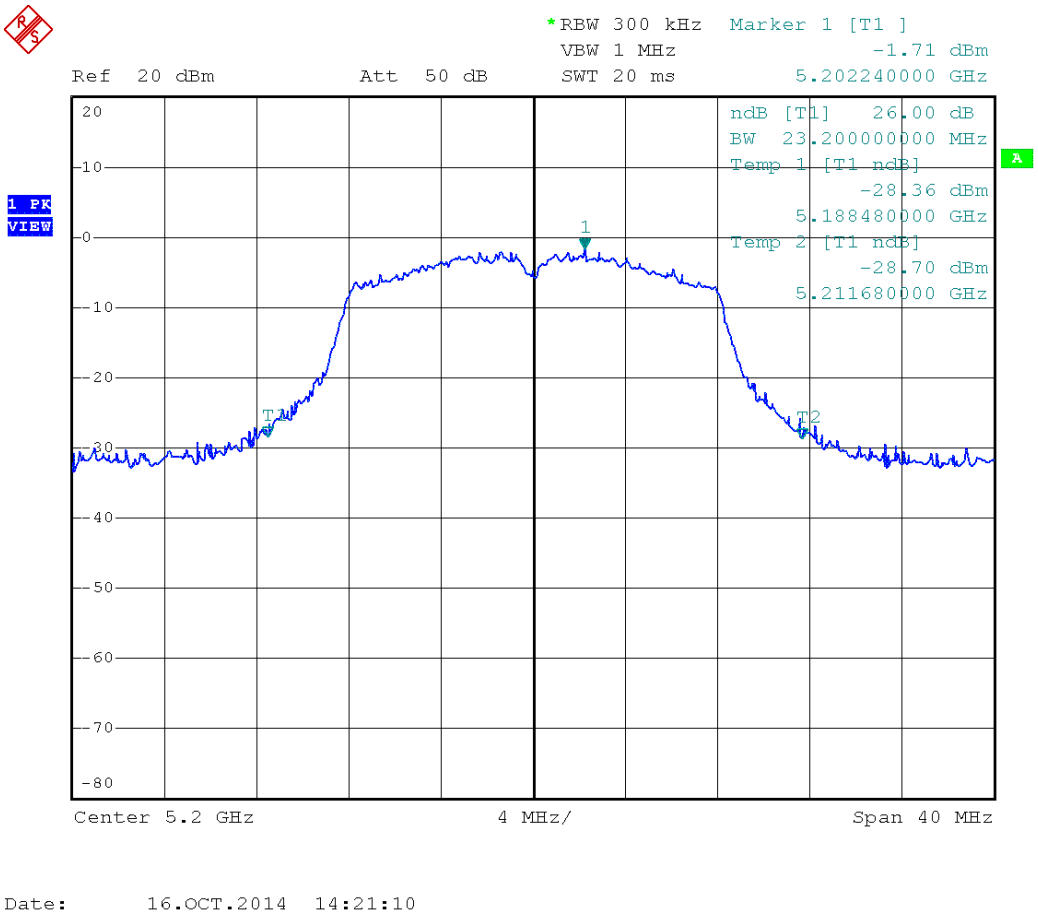


26 dB Bandwidth – OFDM 5200 MHZ

26 dB Emission Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN OFDM, 5200 MHz
Test Date:	2014-10-15
Verdict:	PASS
Note 1:	C.1. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	

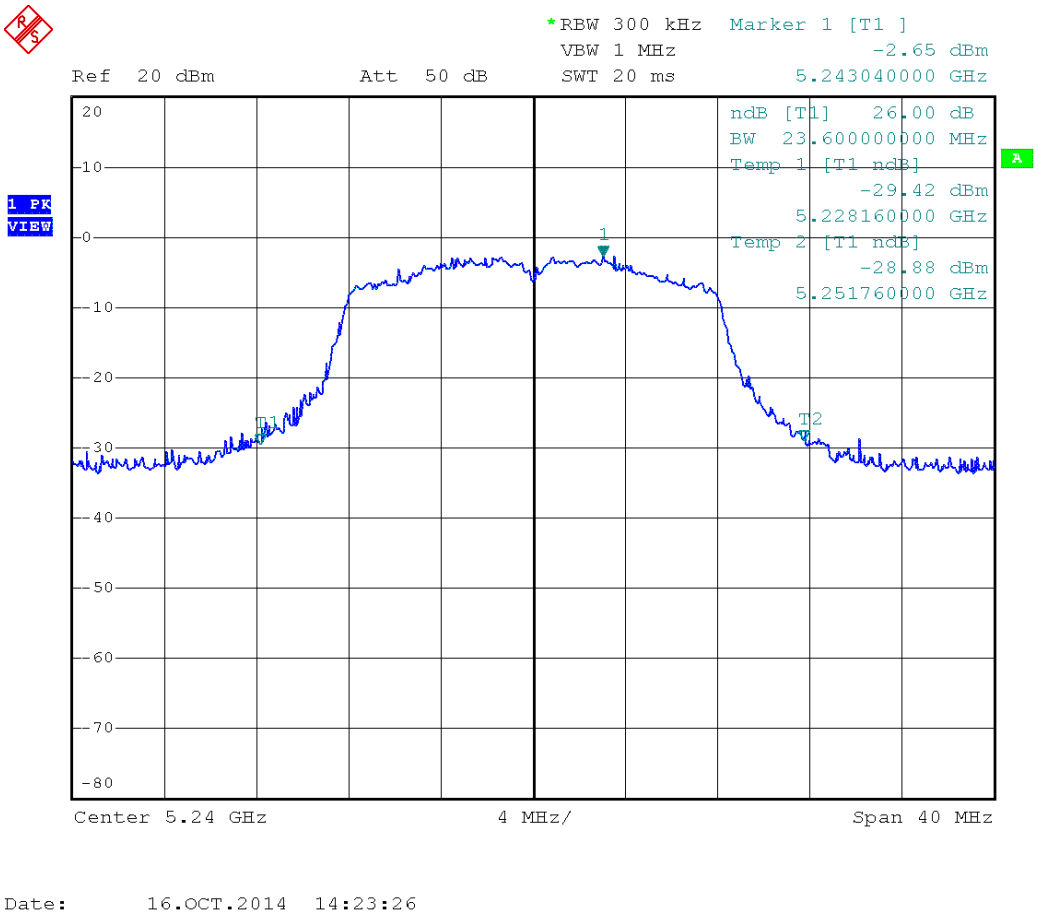


26 dB Bandwidth – OFDM 5240 MHZ

26 dB Emission Bandwidth acc. to FCC 15.407

Project Number: G0M-1407-3973

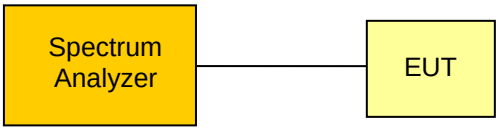
Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, WLAN OFDM, 5240 MHz
Test Date:	2014-10-15
Verdict:	PASS
Note 1:	C.1. (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	



3.3 Test Conditions and Results – Maximum output power

Maximum output power acc. to FCC 15.407 / IC RSS-210			**Verdict: PASS**
EUT requirement rule parts and clause	Reference		
	FCC 15.407(a) / IC RSS-210 A8.4, A9.2		
Test according to measurement reference	Reference Method		
	FCC KDB Publication No. 789033 SA-3 (RMS with max hold)		
Maximum antenna gain	3.5 dBi ⇒ Limit correction = 0 dB		
Limits FCC 15.407			
Frequency band [MHz]	Application	Limit	Max antenna gain without limit correction
5150 - 5250	outdoor / indoor access point	1 W (30 dBm)	6 dBi
5150 - 5250	fixed point-to-point access point	1 W (30 dBm)	23 dBi
5150 - 5250	mobile and portable client	250 mW (24 dBm)	6 dBi
5250 - 5350 5470 - 5725		The lesser of 250 mW (24 dBm) or 11 dBm + 10 log (26 dB emission BW)	6 dBi
5725 - 5850		1 W (30 dBm)	6 dBi
5725 - 5850	fixed point-to-point devices	1 W (30 dBm)	-
If transmitting antennas of directional gain greater than listed above are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the listed gain is exceeded.			
Limits IC RSS-210			
Frequency band [MHz]	Application	Conducted limit	e.i.r.p. limit
5150 - 5250	indoor only	N/A	The lesser of 200 mW (23 dBm) or 10 dBm + 10 log (99% emission BW)
5250 - 5350	All	The lesser of 250 mW (24 dBm) or 11 dBm + 10 log (99% dB emission BW)	The lesser of 1 W (30 dBm) or 17 dBm + 10 log (99% dB emission BW)
5470 - 5600 5650 - 5725	All	The lesser of 250 mW (24 dBm) or 11 dBm + 10 log (99% dB emission BW)	The lesser of 1 W (30 dBm) or 17 dBm + 10 log (99% dB emission BW)
5725 - 5825	All	The lesser of 1 W (30 dBm) or 17 dBm + 10 log (99% dB emission BW)	The lesser of 4 W (36 dBm) or 23 dBm + 10 log (99% dB emission BW)

Test setup



Test procedure

1. Set EUT to test mode
2. Set span to encompass the entire emission bandwidth
3. Set trigger to free run
4. Set RBW to 1 MHz and VBW ≥ 3 MHz
5. Set detector to RMS and trace to max hold
6. Allow max hold to run for at least 60 seconds
7. Compute power by integrating across emission bandwidth

Test results

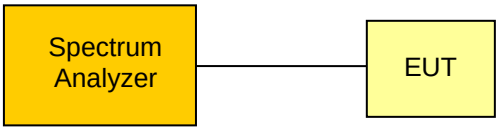
Channel	Frequency	Test mode	Max power [dBm]	Calculation of most stringent conducted limit [dBm]	Conducted limit [dBm]	Margin [dB]
36	5180 MHz	HT20	12.5	10 dBm +10 log(16.7) - 3.5 dBi	18.7	-06.2
40	5200 MHz	HT20	12.2	10 dBm +10 log(16.7) - 3.5 dBi	18.7	-06.5
48	5240 MHz	HT20	13.0	10 dBm +10 log(16.7) - 3.5 dBi	18.7	-05.7
36	5180 MHz	OFDM	11.8	10 dBm +10 log(16.7) - 3.5 dBi	18.7	-06.9
40	5200 MHz	OFDM	11.8	10 dBm +10 log(16.7) - 3.5 dBi	18.7	-06.9
48	5240 MHz	OFDM	12.3	10 dBm +10 log(16.7) - 3.5 dBi	18.7	-06.4

Calculation of most stringent conducted limit:

- Calculation of IC radiated limit
- Calculation of maximum conducted power from radiated IC power limit by subtracting the antenna gain
- Calculation of IC conducted limit (if applicable)
- Correction of FCC maximum conducted output power from EUT antenna gain (if applicable)
- Selection of the lowest allowed conducted output power from the FCC / IC requirements

The resulting most stringent conducted limit expression is given in column “Calculation of most stringent conducted limit [dBm]” and the corresponding power limit value is given in column “Conducted limit [dBm]”.

3.4 Test Conditions and Results – Maximum power spectral density

Power spectral density acc. to FCC 15.407 / IC RSS-210			**Verdict: PASS**
EUT requirement rule parts and clause	Reference		
	FCC 15.407(a) / IC RSS-210 A8.2, A9.2		
Test according to measurement reference	Reference Method		
	FCC KDB Publication No. 789033 F. and SA-3 (RMS with max hold)		
Limits FCC 15.407			
Frequecy band [MHz]	Application	Limit	Max antenna gain without limit correction
5150 - 5250	outdoor / indoor access point	17 dBm/MHz	6 dBi
5150 - 5250	mobile and portable client	11 dBm/MHz	6 dBi
5250 – 5350 5470 - 5725	N/A	11 dBm/MHz	6 dBi
5725 - 5850	N/A	30 dBm/500kHz	6 dBi
5725 - 5850	fixed point-to-point devices	30 dBm/500kHz	-
If transmitting antennas of directional gain greater than listed above are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the listed gain is exceeded.			
Limits IC RSS-210			
Frequency band [MHz]	Application	Limit	
5150 - 5250	indoor only	e.i.r.p.: 10 dBm/MHz	
5250 - 5350	N/A	Conducted: 11 dBm/MHz	
5470 - 5600 5650 - 5725	N/A	Conducted: 11 dBm/MHz	
5725 - 5825	N/A	Conducted: 17 dBm/MHz	
Test setup			
			
Test procedure			
1. Set EUT to test mode 2. Set span to encompass the entire emission bandwidth 3. Set trigger to free run 4. Set RBW to 100 kHz and VBW ≥ 300 kHz 5. Set detector to RMS and trace to max hold 6. Allow max hold to run for at least 60 seconds 7. Set marker to maximum of emission envelope 8. Result is scaled to final results with 10*log10(Limit Bandwidth / 100 kHz)			

Test results							
Channel	Frequency [MHz]	Test mode	Max frequency [MHz]	Max power density [dBm/MHz]	Calculation of lowest conducted limit [dBm]	Conducted limit [dBm/MHz]	Margin [dB]
36	5180 MHz	HT20	5181	2.5	10 dBm/MHz - 3.5 dBi	6.5	-04.0
40	5200 MHz	HT20	5202	2.5	10 dBm/MHz - 3.5 dBi	6.5	-04.0
48	5240 MHz	HT20	5242	2.2	10 dBm/MHz - 3.5 dBi	6.5	-04.3
36	5180 MHz	OFDM	5181	2.4	10 dBm/MHz - 3.5 dBi	6.5	-04.1
40	5200 MHz	OFDM	5202	2.4	10 dBm/MHz - 3.5 dBi	6.5	-04.1
48	5240 MHz	OFDM	5242	2.9	10 dBm/MHz - 3.5 dBi	6.5	-03.6

Calculation of most stringent conducted limit:

- Calculation of maximum conducted power from radiated IC power limit by subtracting the antenna gain (if applicable)
- Correction of FCC maximum conducted limit from EUT antenna gain (if applicable)
- Selection of the lowest allowed conducted power density limit from the FCC / IC requirements

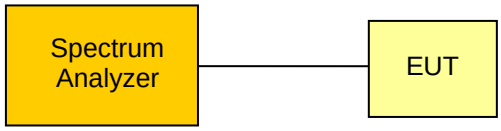
3.5 Test Conditions and Results – Conducted spurious emissions

Conducted spurious emissions acc. to FCC 15.407 / IC RSS-210	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.407(b) (1) – (4) / IC RSS-210 A8.5, A9.2
Test according to measurement reference	Reference Method
	FCC KDB Publication No. 789033 G.2, 3, 4, 5.
Test frequency range	Tested frequencies
	10 MHz – 10th Harmonic

Limits	
Frequecy band [MHz]	Out of frequency band limit [e.i.r.p.]
5150 - 5250	-27 dBm/MHz
5250 – 5350	-27 dBm/MHz
5470 - 5725	-27 dBm/MHz
5725 – (5825) 5850	-17 dBm/MHz (within 10 MHz outside the band edges)
5725 – (5825) 5850	-27 dBm/MHz

Comments: Below 1 GHz peak detector is permitted as alternative to quasi-peak detector.
Above 1 GHz peak detector is requested.

Test setup



Test procedure

1. Set EUT to test mode
2. Adjust reference level according to antenna gain
3. Set sweep time to auto
4. Set detector to peak and trace to max hold
5. Allow max hold to run until trace has stabilized
6. Set markers to emission peaks

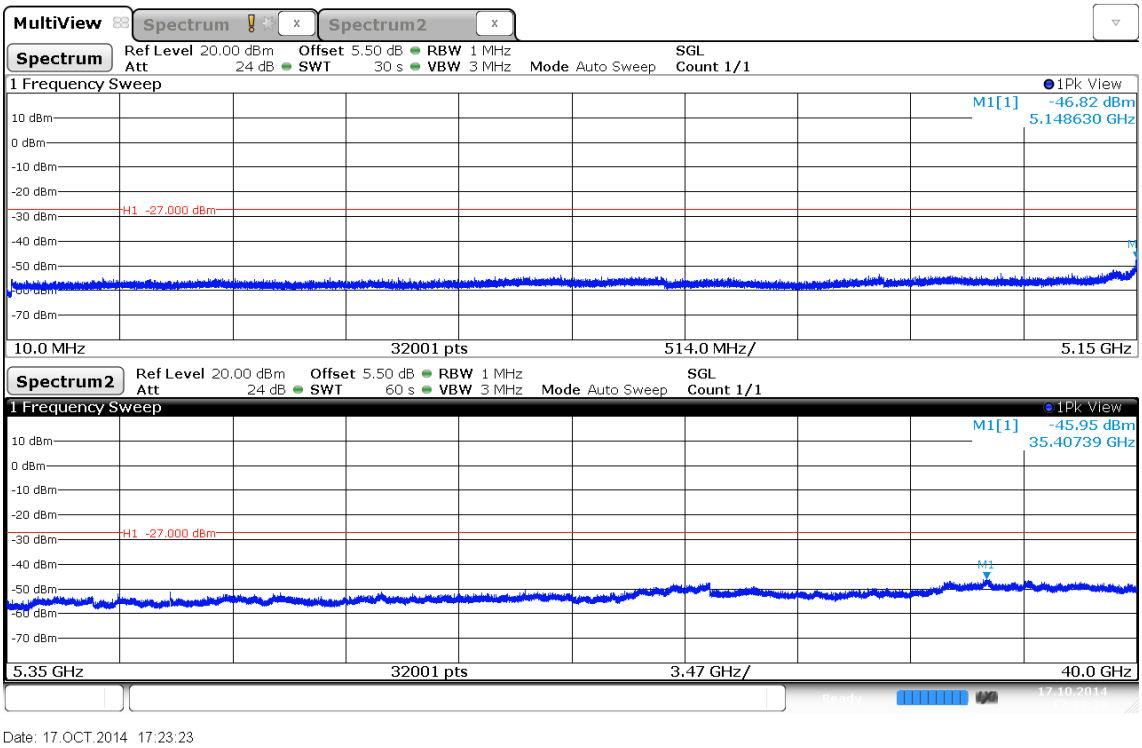
Test results						
Channel	Frequency [MHz]	Mode	Emission [MHz]	Emission Level [dbm]	Limit [dBm]	Margin [dB]
36	5180 MHz	HT20	35407	-45.95	-27	-18.95
48	5240 MHz	HT20	35369	-46.09	-27	-19.09
36	5180 MHz	OFDM	35394	-45.12	-27	-18.12
48	5240 MHz	OFDM	35364	-46.52	-27	-19.52
Comments:						

Conducted spurious emissions – HT20 5180 MHZ

Spurious Emissions acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, HT20, 5180 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement



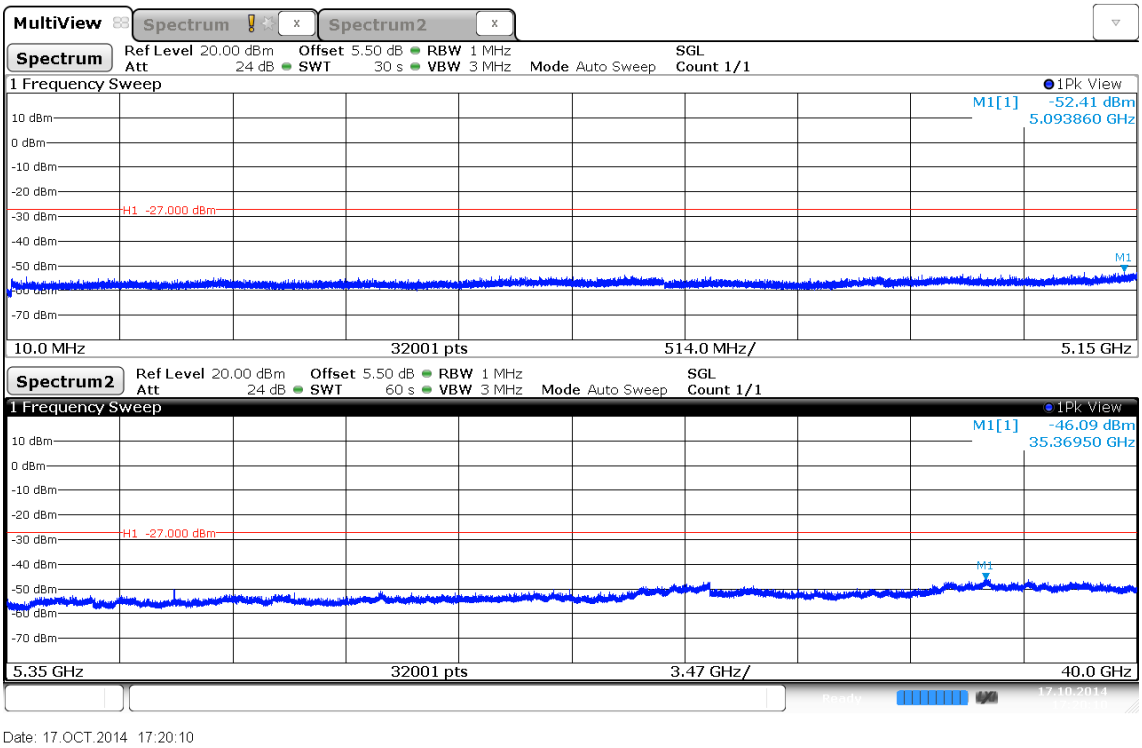
Date: 17.OCT.2014 17:23:23

Conducted spurious emissions – HT20 5240 MHZ

Spurious Emissions acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, HT20, 5240 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement



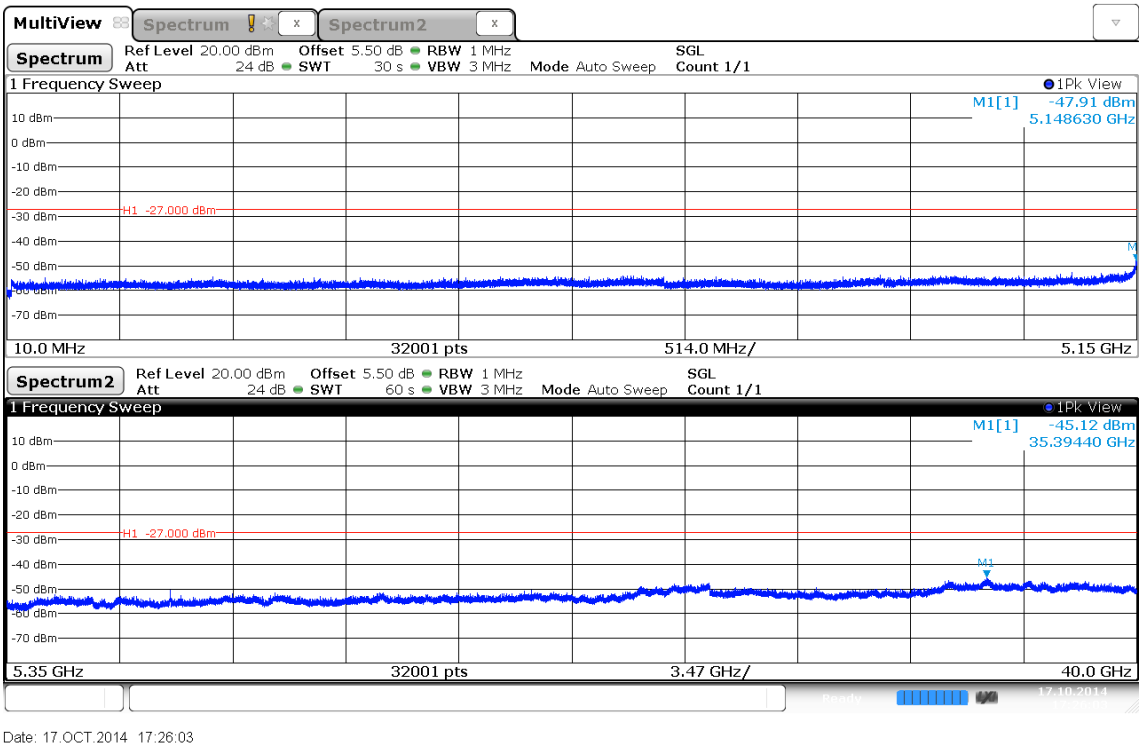
Date: 17.OCT.2014 17:20:10

Conducted spurious emissions – OFDM 5180 MHZ

Spurious Emissions acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, OFDM, 5180 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement



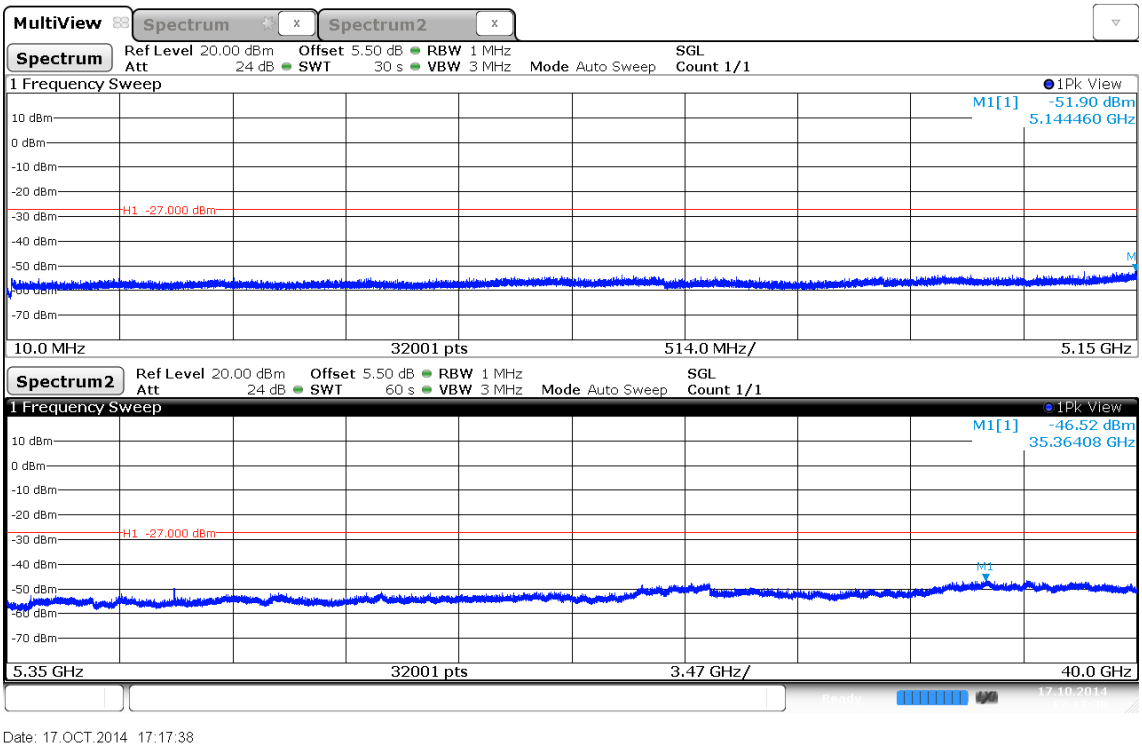
Date: 17.OCT.2014 17:26:03

Conducted spurious emissions – OFDM 5240 MHZ

Spurious Emissions acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, OFDM, 5240 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement



Date: 17.OCT.2014 17:17:38

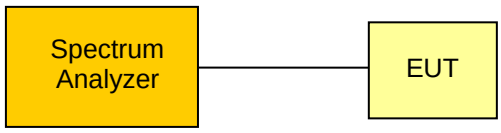
3.6 Test Conditions and Results – Band edge compliance and frequency stability

Band-edge compliance acc. FCC 15.407 / IC RSS-210	**Verdict: PASS**
EUT requirement rule parts and clause	Reference
	FCC 15.407(b), (g) / IC RSS-210 A8.5
Test according to measurement reference	Reference Method
	FCC KDB Publication No. 789033 G.3.(ii), G.6.c)(iii)
Measurement mode	RMS Integration

Limits

Frequecy band [MHz]	Out of frequency band limit e.i.r.p.
5150 - 5250	-27 dBm/MHz
5250 – 5350	-27 dBm/MHz
5470 - 5725	-27 dBm/MHz
5725 - 5850	-17 dBm/MHz

Test setup



Test procedure

1. Set EUT to test mode
2. Adjust reference level according to antenna gain
3. Set sweep time to auto
4. Set RBW to 100 kHz and VBW ≥ 300 kHz
5. Set detector to RMS and trace to max hold
6. Allow max hold to run until trace has stabilized
7. Compute power by integrating across 1 MHz
8. Repeate measurements under all conditions of normal operations as specified in user manual

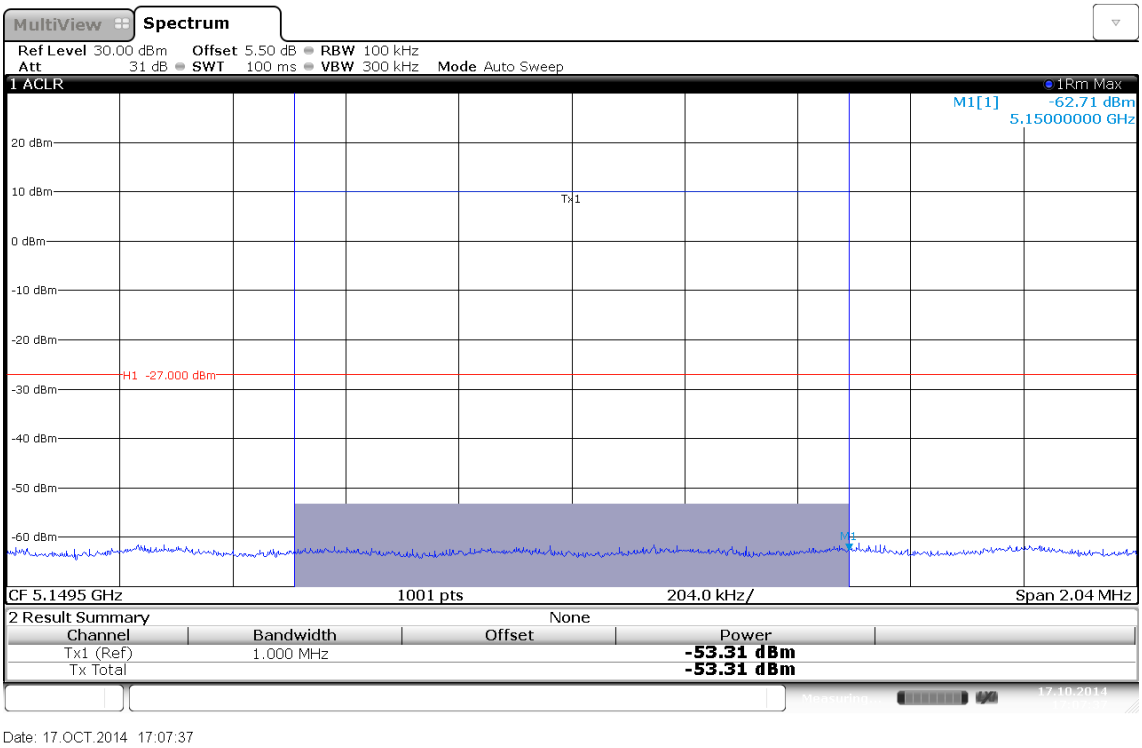
Test results						
Channel	Frequency [MHz]	Temperature	Mode	Level [dBm]	Limit [dBm]	Margin [dB]
36	5180 MHz	+25°C	HT20	-54	-27	-27
36	5180 MHz	-20°C	HT20	-54	-27	-27
36	5180 MHz	+45°C	HT20	-53	-27	-26
48	5240 MHz	+25°C	HT20	-58	-27	-31
48	5240 MHz	-20°C	HT20	-56	-27	-29
48	5240 MHz	+45°C	HT20	-58	-27	-31
36	5180 MHz	+25°C	OFDM	-55	-27	-28
36	5180 MHz	-20°C	OFDM	-53	-27	-26
36	5180 MHz	+45°C	OFDM	-54	-27	-27
48	5240 MHz	+25°C	OFDM	-58	-27	-31
48	5240 MHz	-20°C	OFDM	-56	-27	-29
48	5240 MHz	+45°C	OFDM	-58	-27	-31
Comments: Temperature range according to manual. No voltage variation in manual.						

Band-edge compliance – HT20 5180 MHz T_{MAX}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tmax / Vnom
Mode:	Tx, HT20, 5180 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated

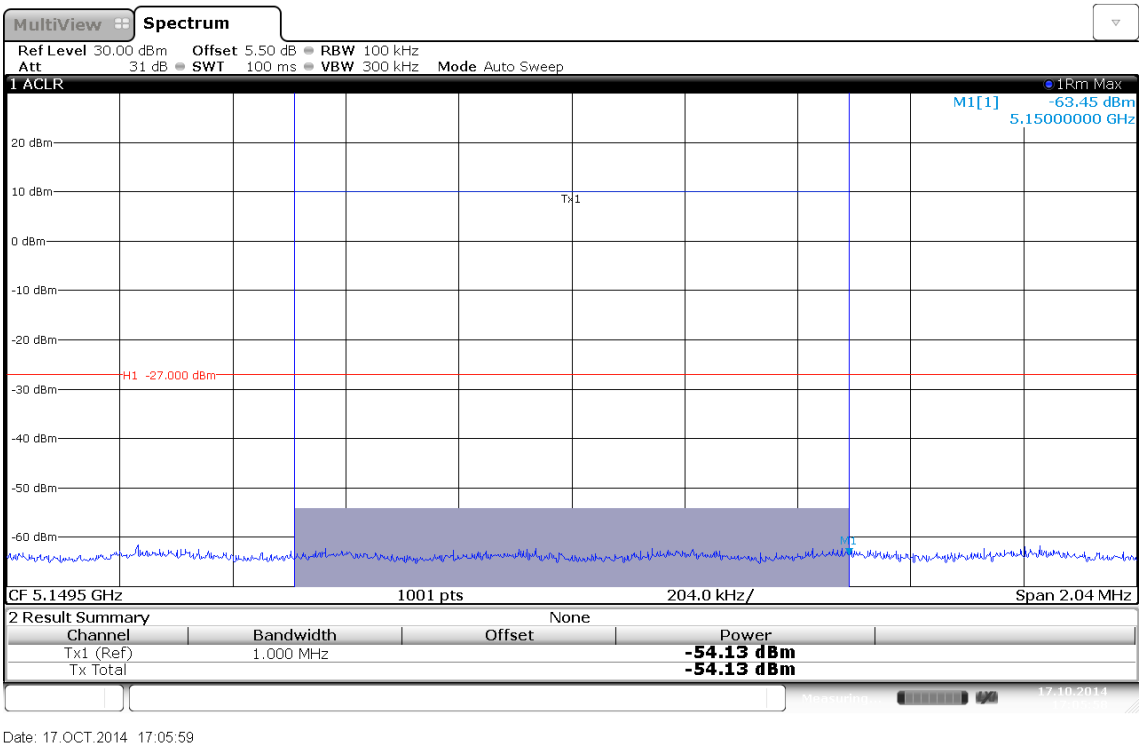


Band-edge compliance – HT20 5180 MHz T_{MIN}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tmin / Vnom
Mode:	Tx, HT20, 5180 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated



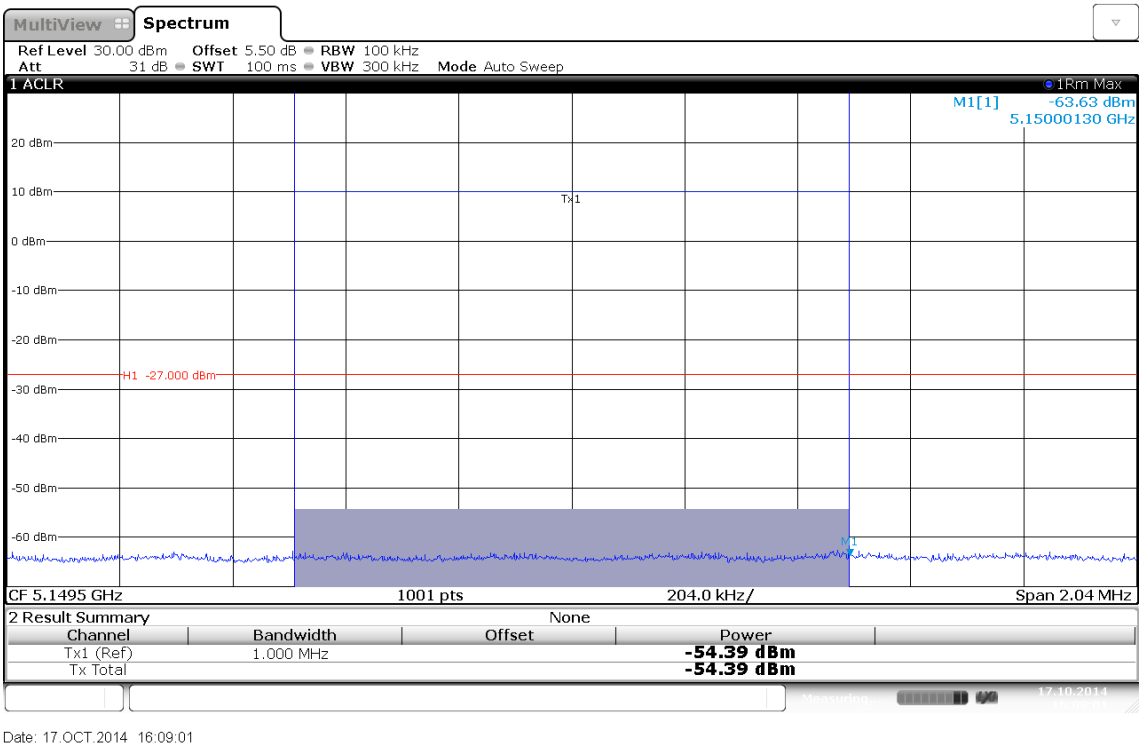
Date: 17.OCT.2014 17:05:59

Band-edge compliance – HT20 5180 MHz T_{NOM}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, HT20, 5180 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated



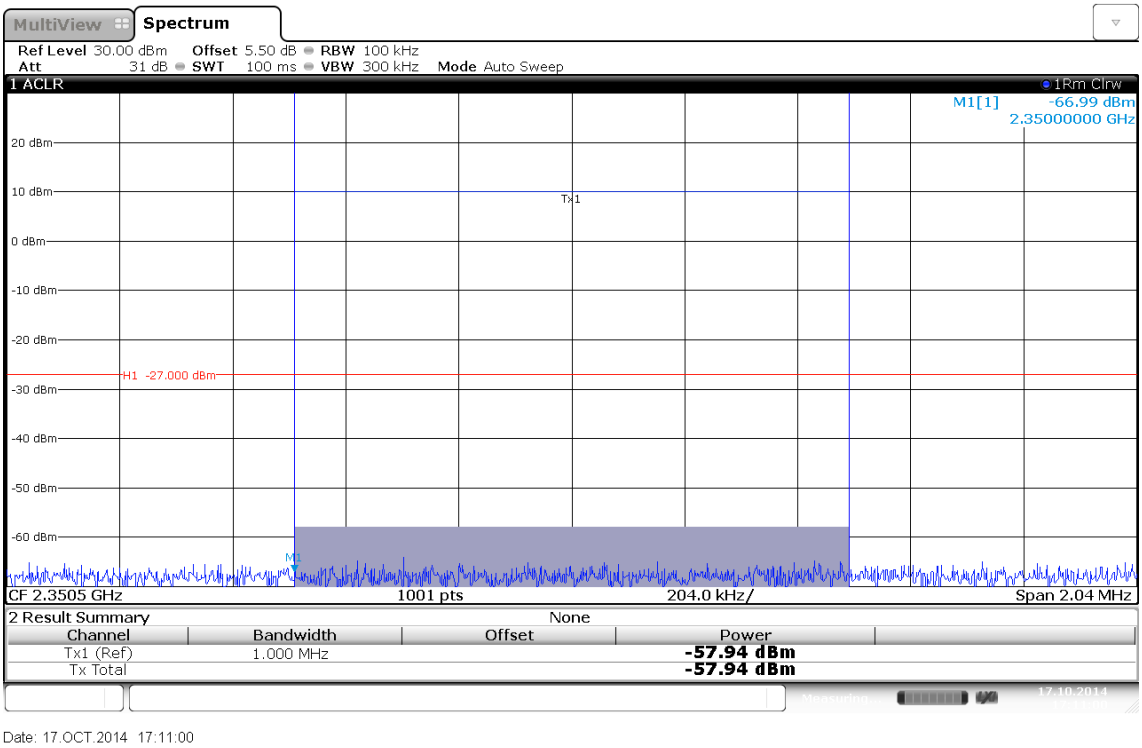
Date: 17.OCT.2014 16:09:01

Band-edge compliance – HT20 5240 MHz T_{MAX}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tmax / Vnom
Mode:	Tx, HT20, 5240 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated

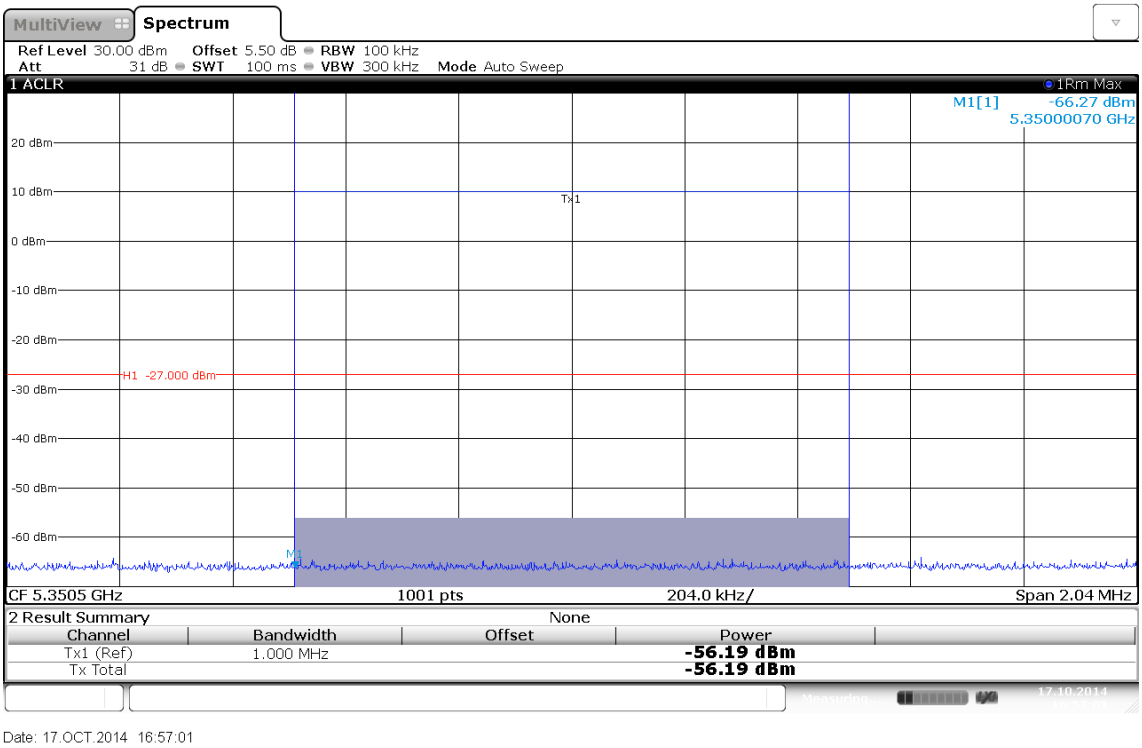


Band-edge compliance – HT20 5240 MHz T_{MIN}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tmin / Vnom
Mode:	Tx, HT20, 5240 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated

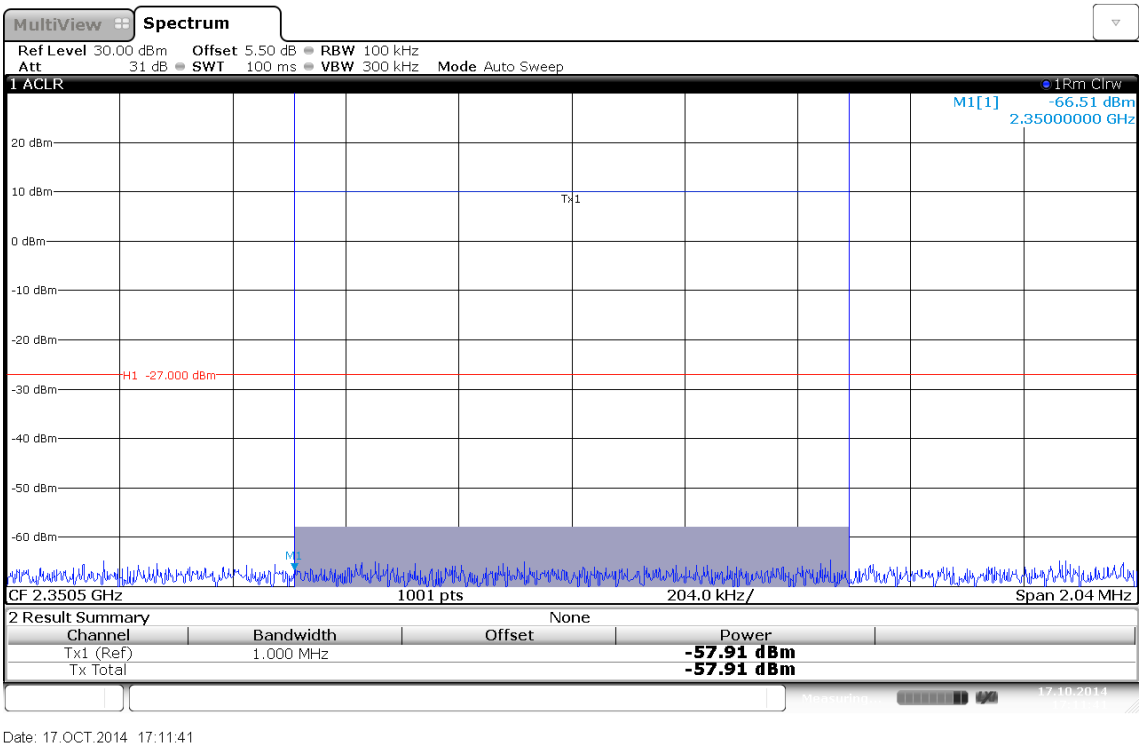


Band-edge compliance – HT20 5240 MHz T_{NOM}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, HT20, 5240 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated



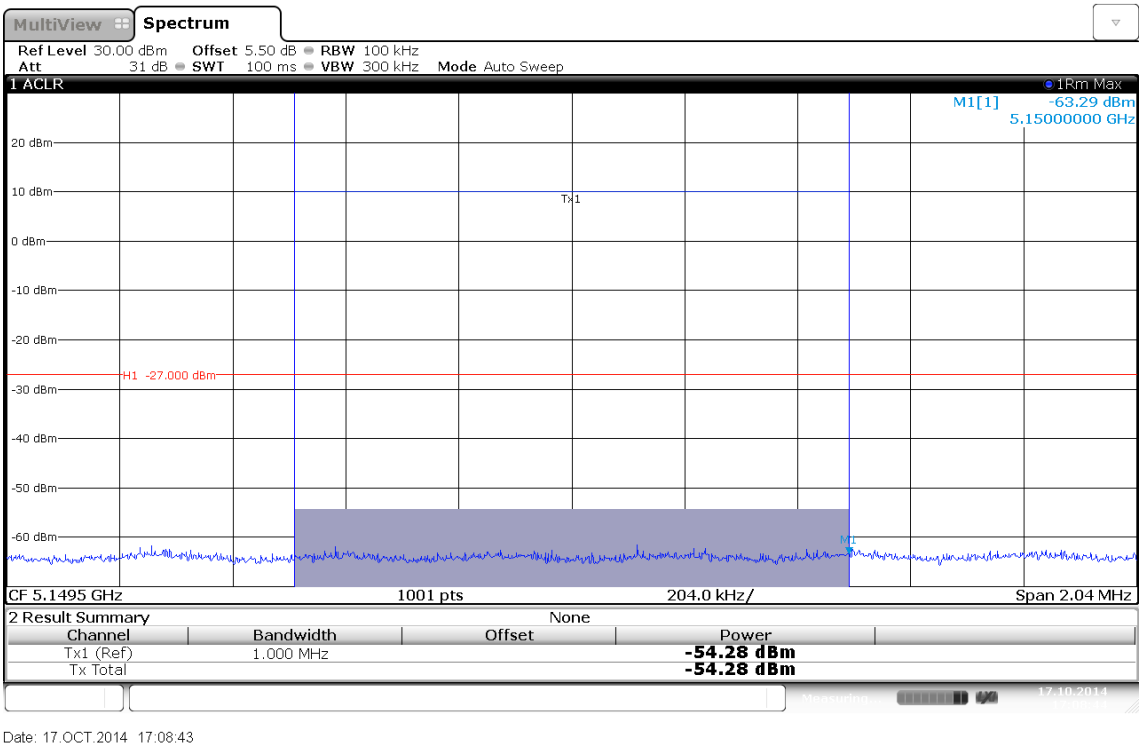
Date: 17.OCT.2014 17:11:41

Band-edge compliance – OFDM 5180 MHz T_{MAX}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tmax / Vnom
Mode:	Tx, OFDM, 5180 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated

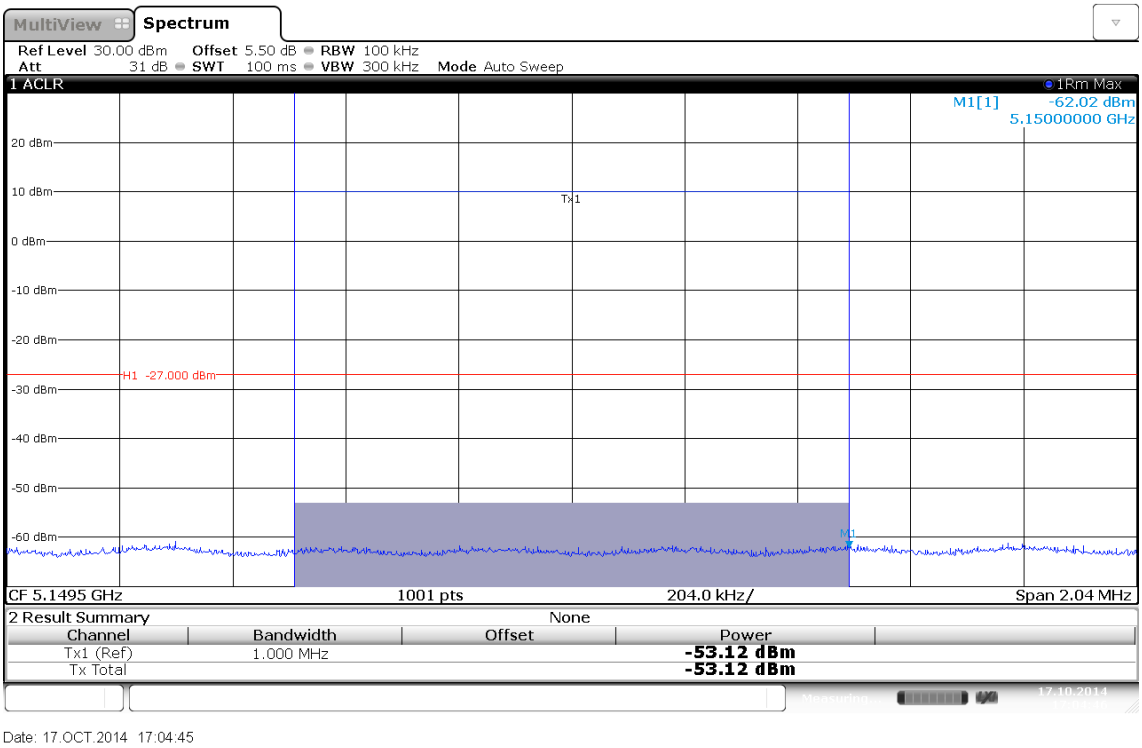


Band-edge compliance – OFDM 5180 MHz T_{MIN}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tmin / Vnom
Mode:	Tx, OFDM, 5180 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated



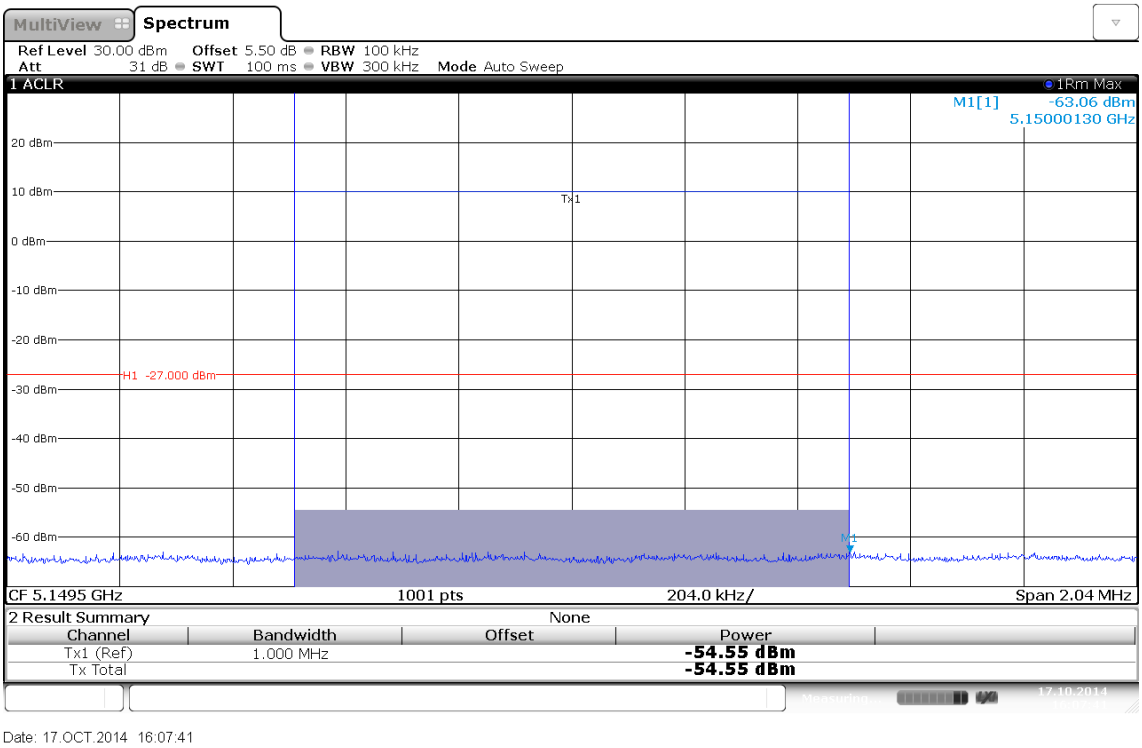
Date: 17.OCT.2014 17:04:45

Band-edge compliance – OFDM 5180 MHz T_{NOM}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, OFDM, 5180 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated



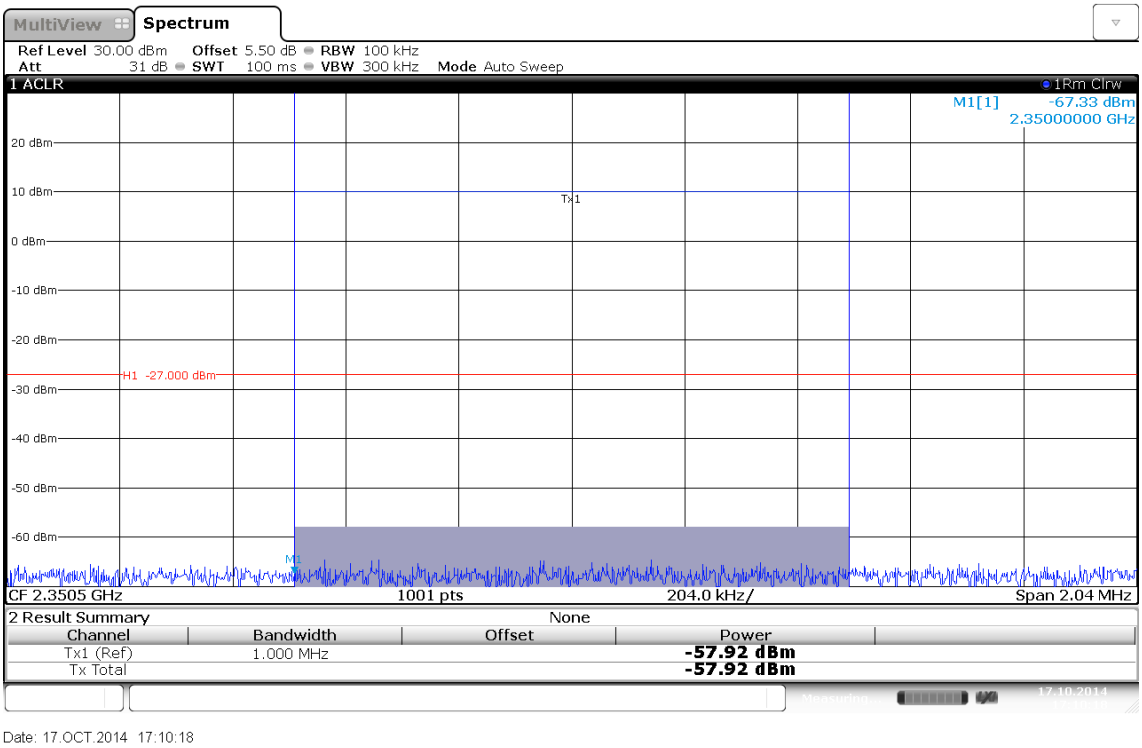
Date: 17.OCT.2014 16:07:41

Band-edge compliance – OFDM 5240 MHz T_{MAX}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tmax / Vnom
Mode:	Tx, OFDM, 5240 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated

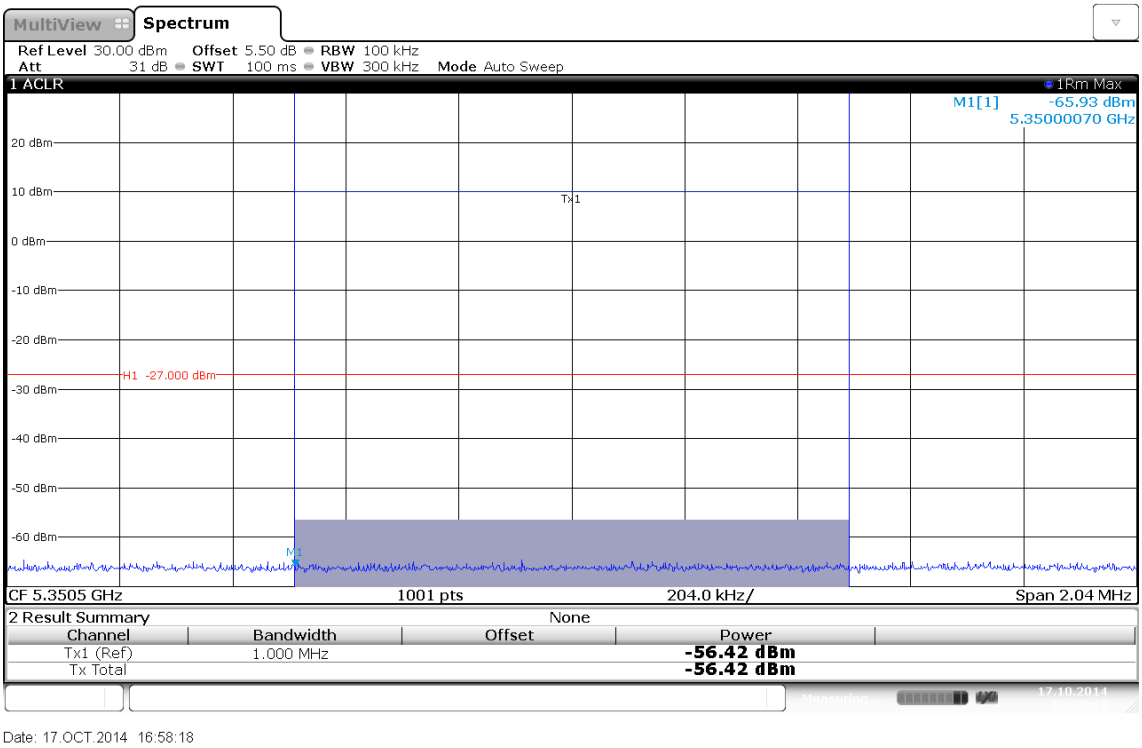


Band-edge compliance – OFDM 5240 MHz T_{MIN}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tmin / Vnom
Mode:	Tx, OFDM, 5240 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated

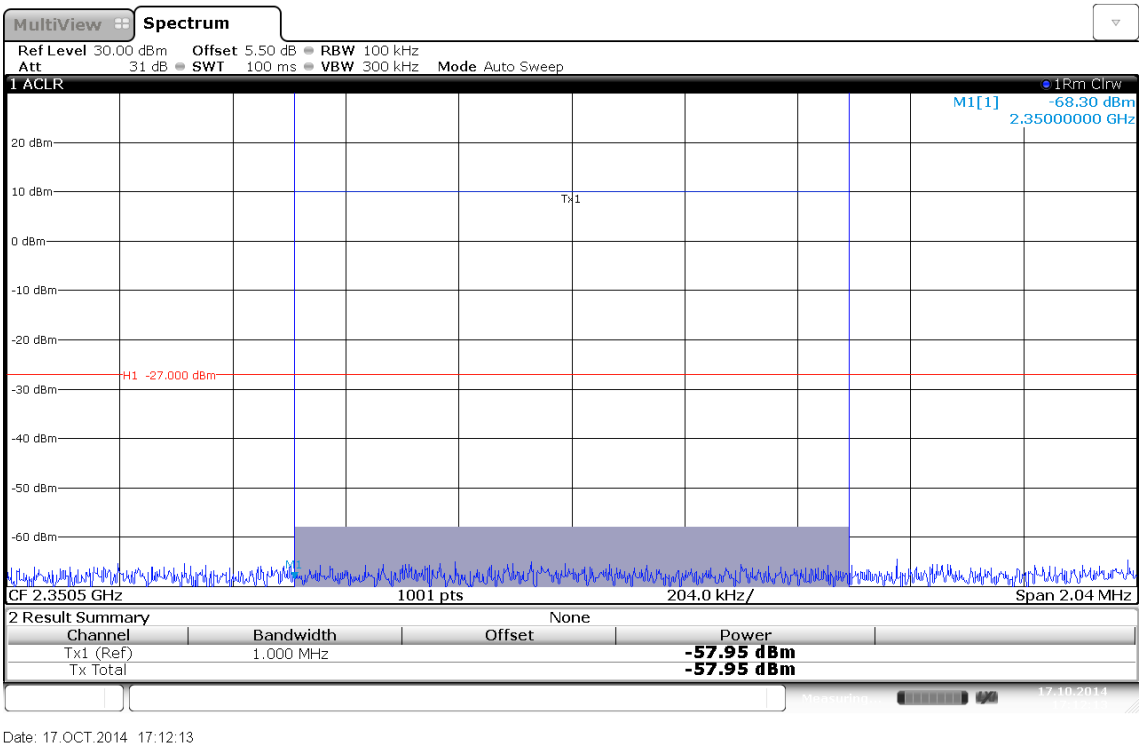


Band-edge compliance – OFDM 5240 MHz T_{NOM}

Band Edge Compliance acc. to FCC 15.407

Project Number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Toralf Jahn
Test Conditions:	Tnom / Vnom
Mode:	Tx, OFDM, 5240 MHz
Test Date:	2014-10-17
Verdict:	PASS
Note 1:	G.6.(iii) (789033 D02 General UNII Test Procedure New Rules v01)
Note 2:	conducted measurement, integration method with RMS detector, gated



Date: 17.OCT.2014 17:12:13

3.7 Test Conditions and Results – AC power line conducted emissions

Power line conducted emissions acc. FCC 47 CFR 15.207 / IC RSS-Gen				**Verdict: PASS**
Test according referenced standards	Reference Method			
	FCC 15.407(b) (6) / 15.207 / 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.				

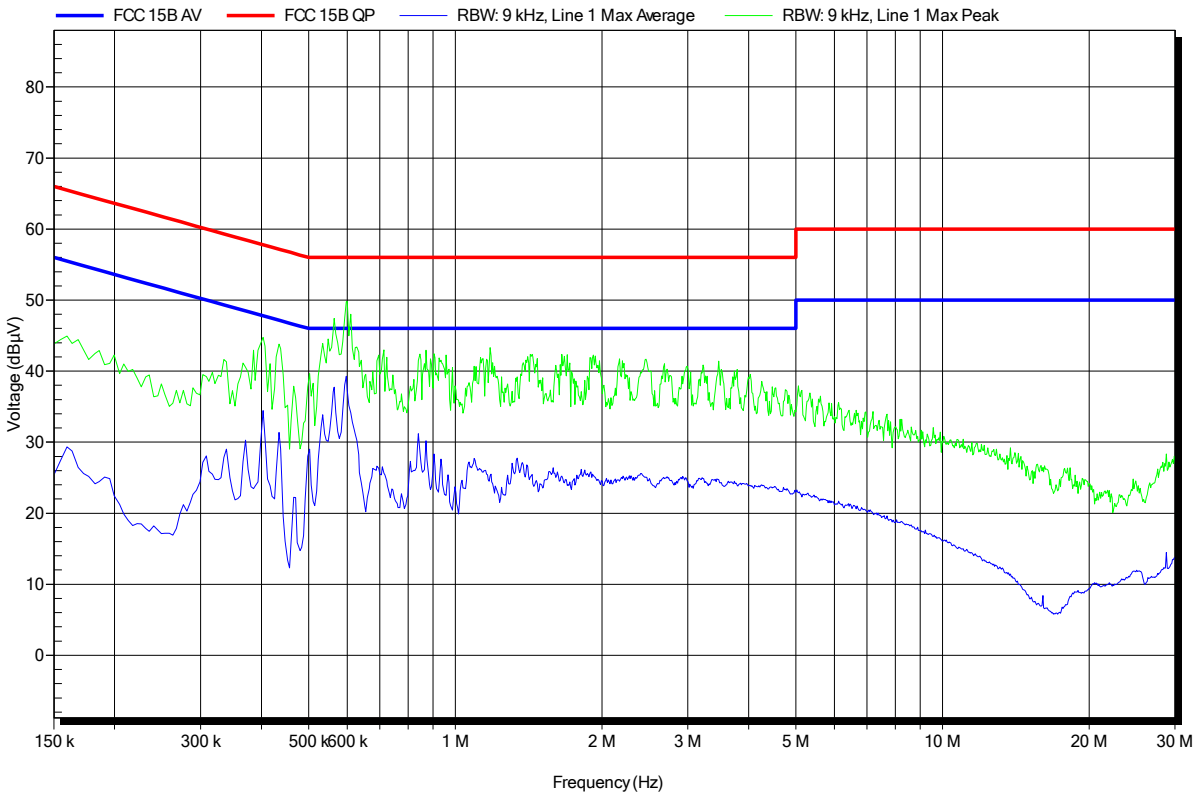
Conducted Emissions

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

Project number: G0M-1407-3973

Manufacturer:	BARTEC PIXA VI AS
EUT Name:	Smartphone
Model:	Impact X
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120VAC(AC/DC-adapter,AN4111)
LISN:	ESH2-Z5 L
Mode:	charging+GSM900MHz,pl5+WLAN
Test Date:	2014-08-26
Note:	

Index 5



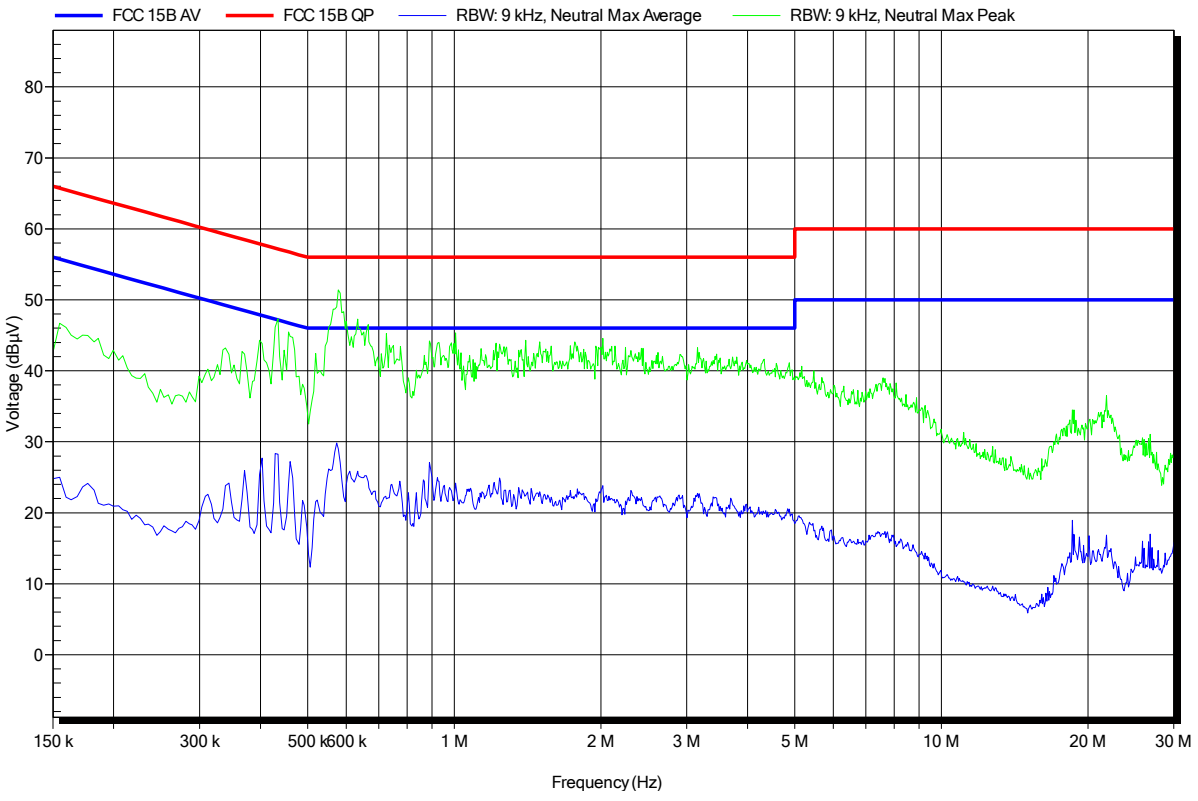
Conducted Emissions

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

Project number: G0M-1407-3973

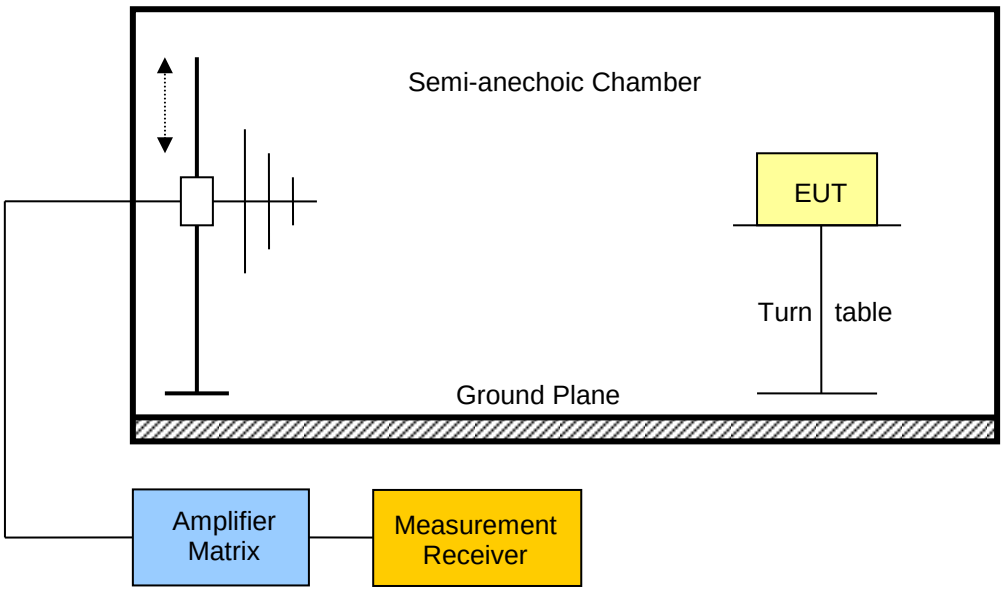
Manufacturer:	BARTEC PIXA VI AS
EUT Name:	Smartphone
Model:	Impact X
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 25°C, Unom: 120VAC(AC/DC-adapter,AN4111)
LISN:	ESH2-Z5 N
Mode:	charging+GSM900MHz,pl5+WLAN
Test Date:	2014-08-26
Note:	

Index 11



3.8 Test Conditions and Results – Transmitter radiated emissions in the restricted bands

Transmitter radiated emissions acc. FCC 47 CFR 15.407 / IC RSS-210				**Verdict: PASS**
Test according referenced standards		Reference Method		
		FCC 15.407(b) (7) / IC RSS-210 A8.5		
Test according to measurement reference		Reference Method		
		FCC KDB Publication No. 789033 G.1., / 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)). Below 1000 MHz peak detector is allowed as an alternative to quasi-peak detector. Above 1000 MHz is an additional peak limit 20 dB above the average limit. If all peak measurements satisfy the average limit, then average measurements are not required.				
Test setup				



Test procedure
1. Set EUT to test mode 2. Set span according to measurement range 3. Set resolution bandwidth below 1 GHz according to CISPR 16 with peak/quasi-peak detector and to 1 MHz with peak/average detector above 1 GHz 4. Set markers to peak emission levels within restricted bands

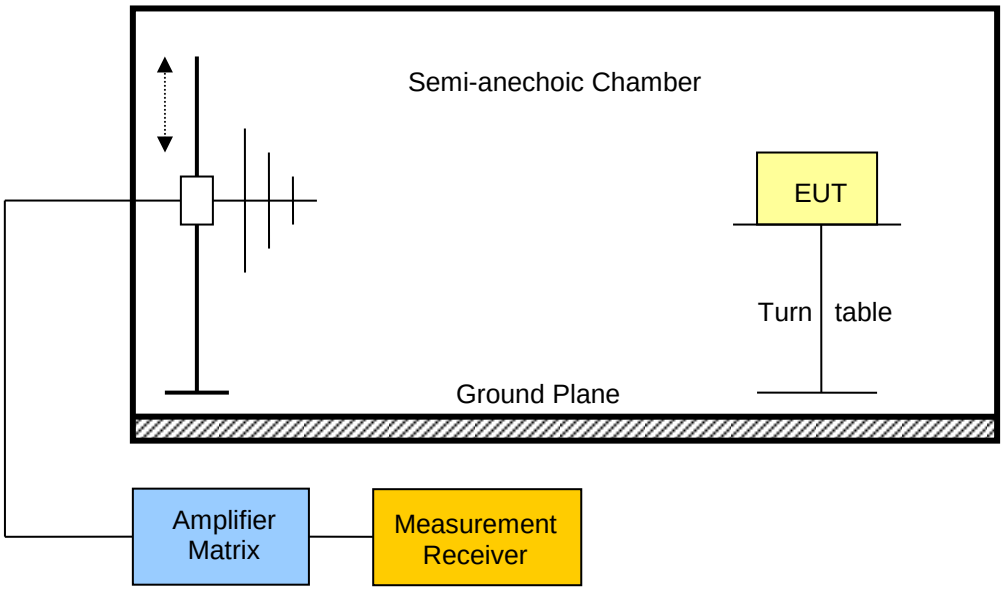
Test results – Internal Antenna

Channel	Channel Frequency [MHz]	Test Mode	Emission Frequency [MHz]	Emission Level [dbµV/m]	Det.	Pol.	Limit [dbµV/m]	Limit dist. [m]*	Margin [dB]
36	5180 MHz	HT20	7010	61.88	pk	hor	95.00	3	-33.12
36	5180 MHz	HT20	7423	49.35	pk	hor	74.00	3	-24.65
36	5180 MHz	HT20	17988	49.24	pk	hor	74.00	3	-24.76
48	5240 MHz	HT20	5250	84.49	pk	hor	95.00	3	-10.51
48	5240 MHz	HT20	7423	48.79	pk	ver	74.00	3	-25.21

Comments: * Physical distance between EUT and measurement antenna.

3.9 Test Conditions and Results – Receiver radiated emissions

Receiver radiated emissions acc. IC RSS-210				**Verdict: PASS**
Test according referenced standards	Reference Method			
	IC RSS-210 A8.5			
Test according to measurement reference	Reference Method			
	ANSI C63.4			
Test frequency range	Tested frequencies			
	30 MHz – 3th Harmonic			
EUT test mode	Receive			
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
Test setup				



Test procedure
1. Set EUT to test mode 2. Set span according to measurement range 3. Set resolution bandwidth below 1 GHz according to CISPR 16 with peak/quasi-peak detector and to 1 MHz with peak/average detector above 1 GHz 4. Set markers to peak emission levels

Test results

Channel	Channel Frequency [MHz]	Emission Frequency [MHz]	Emission Level [dbµV/m]	Detector	Polarizat.	Limit [dBµV/m]	Margin [dB]
40	5200 MHz	31.7	33.38	pk	ver	40.00	-06.62
40	5200 MHz	235.2	27.21	pk	ver	46.00	-18.79
40	5200 MHz	720	28.85	pk	hor	46.00	-17.15

Comments:

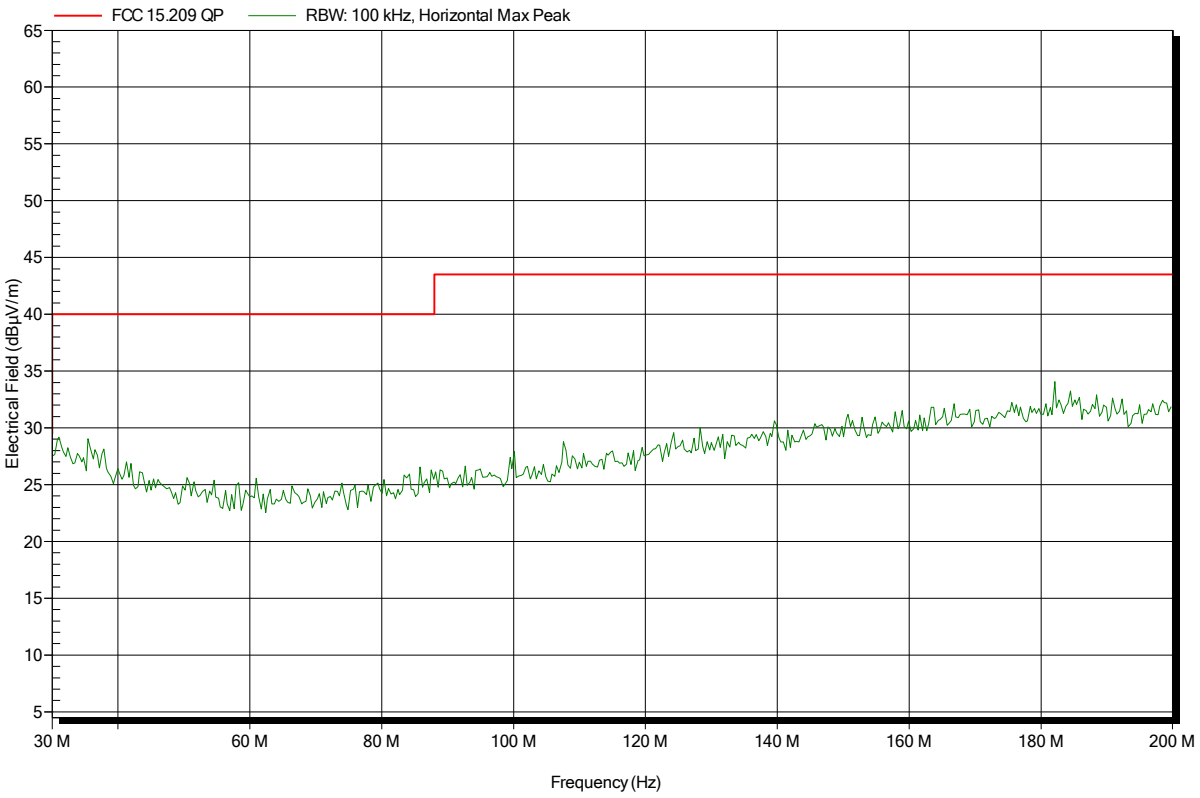
ANNEX A Transmitter radiated spurious emissions

Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-10
Note:	worst case

Index 34

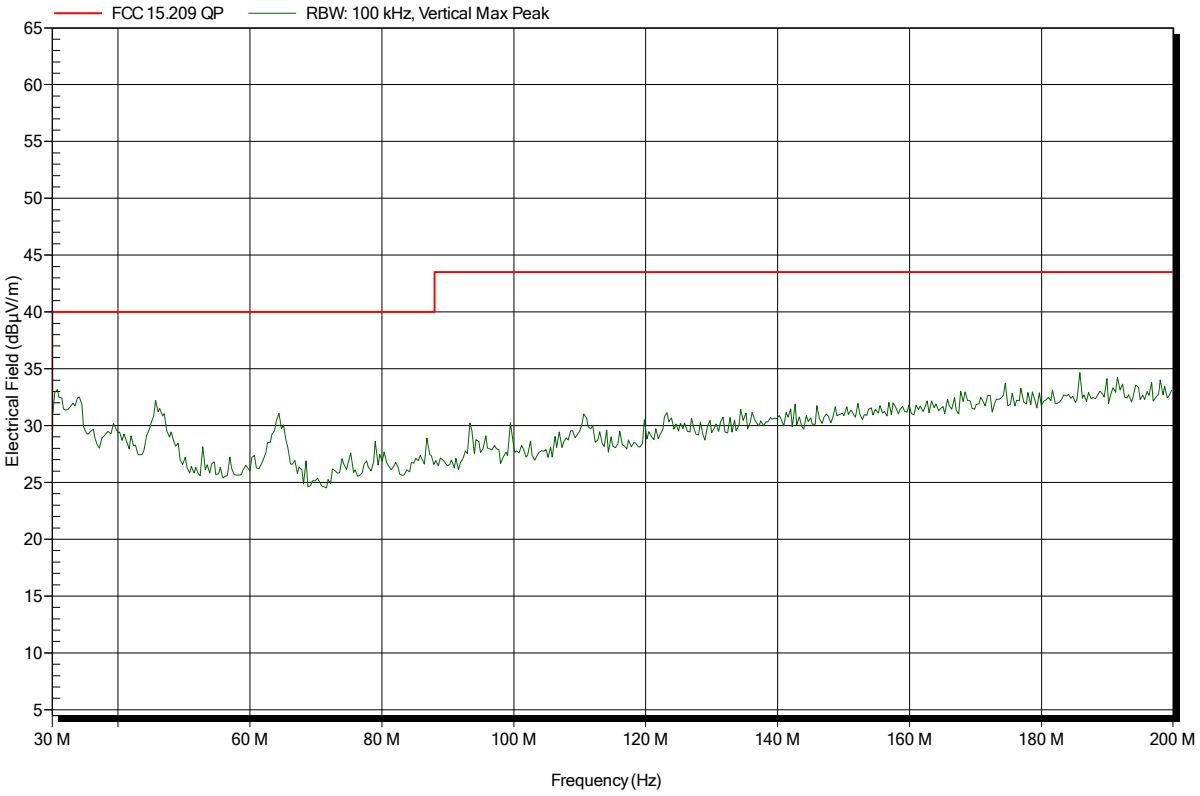


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-10
Note:	worst case

Index 32

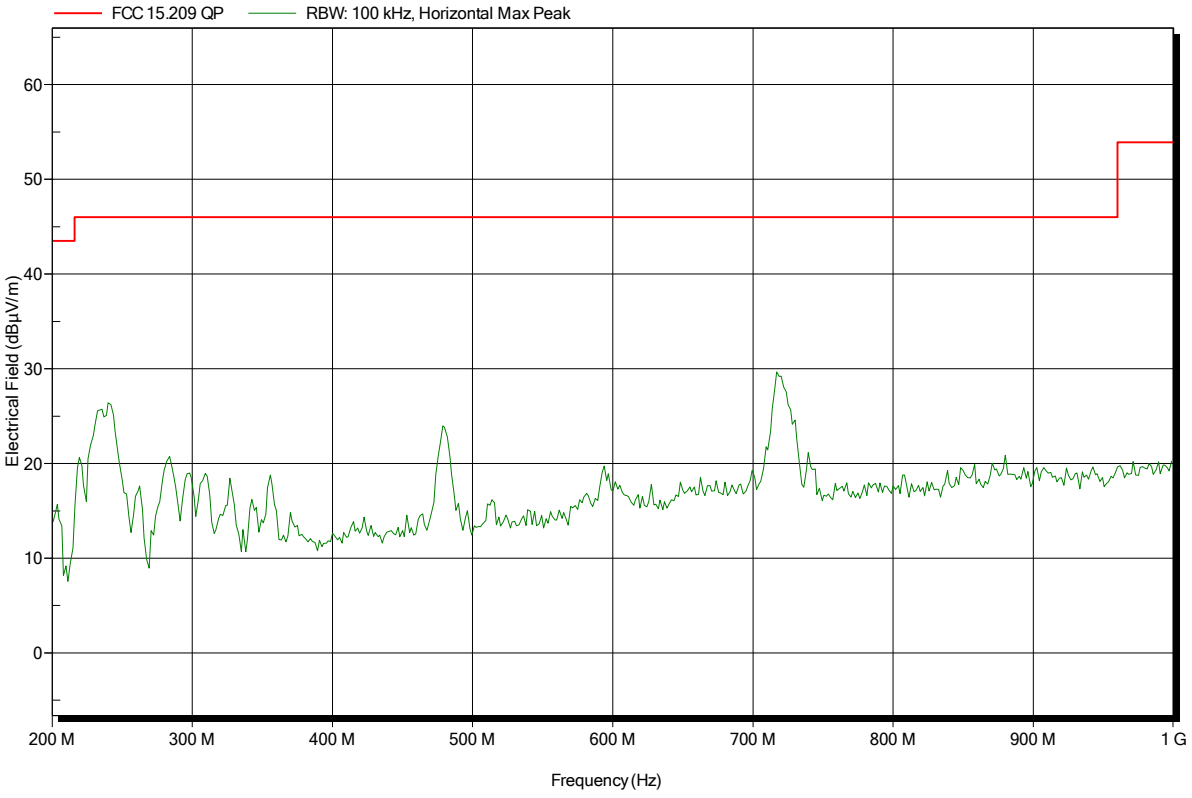


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-10
Note:	worst case

Index 36

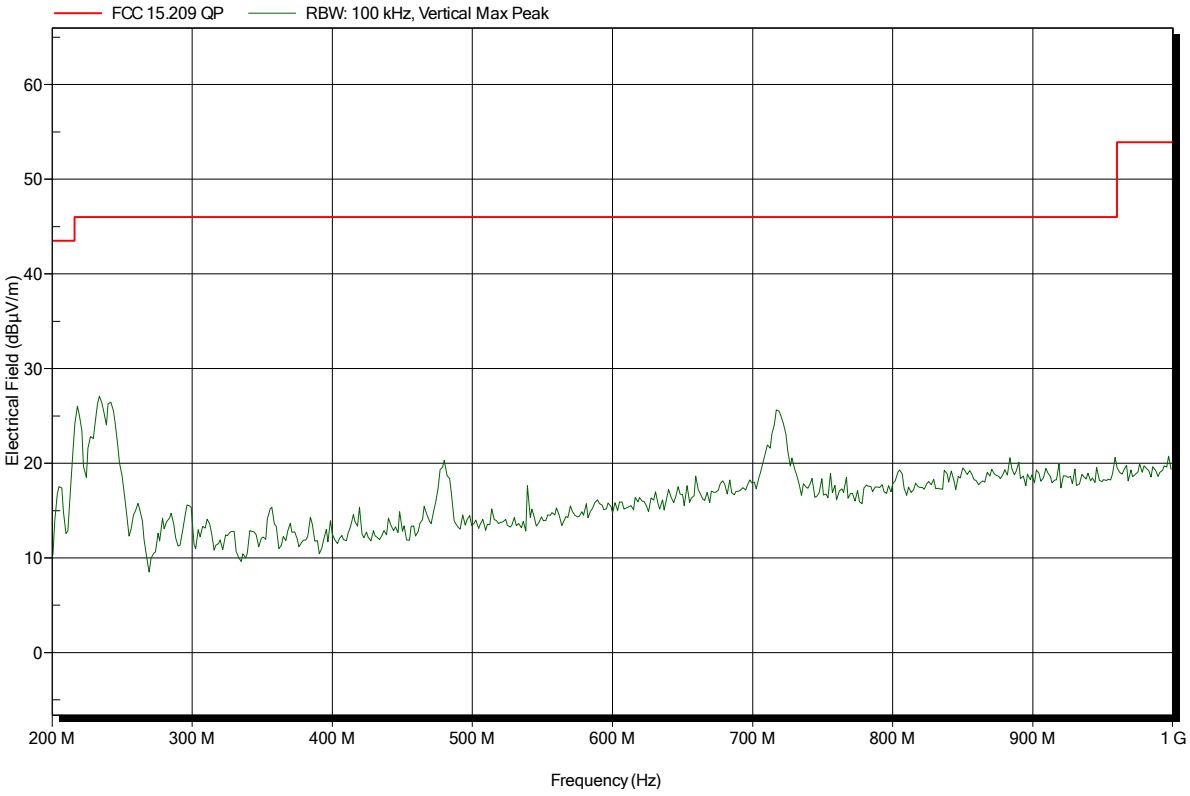


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-10
Note:	worst case

Index 35

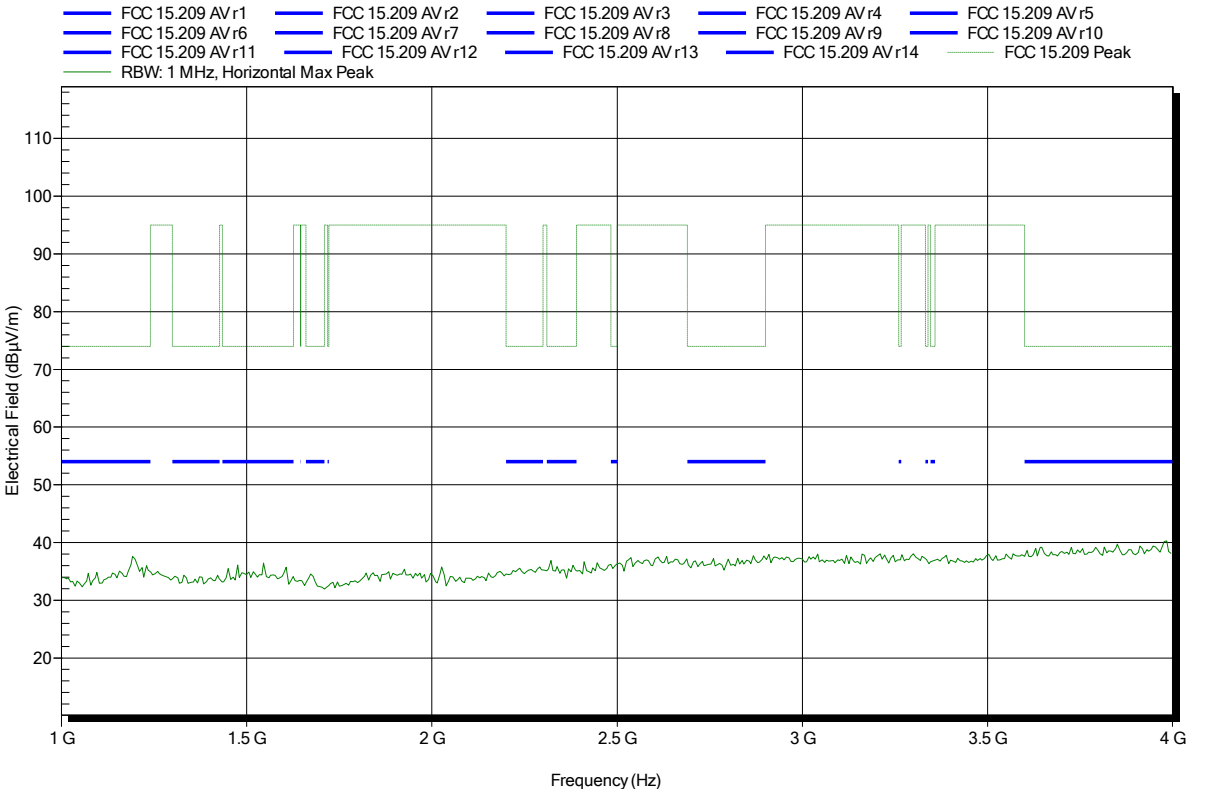


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-08
Note:	

Index 6

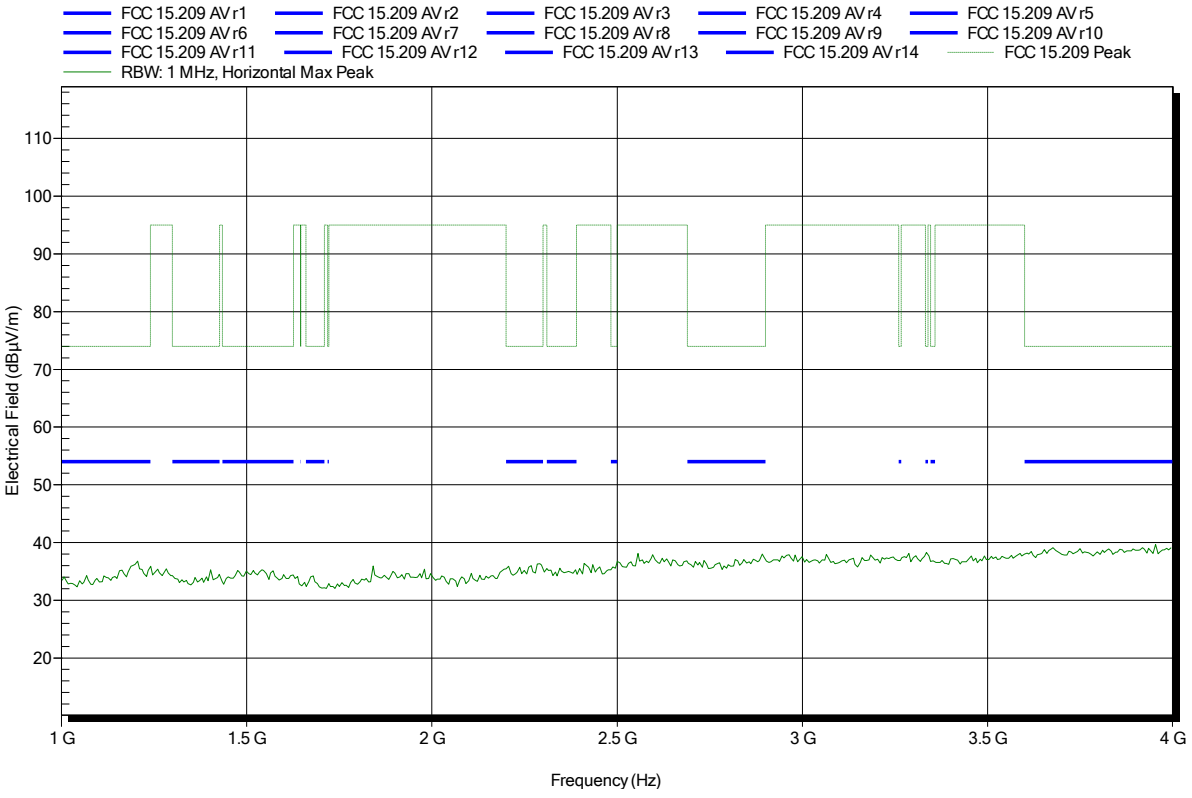


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-08
Note:	

Index 14

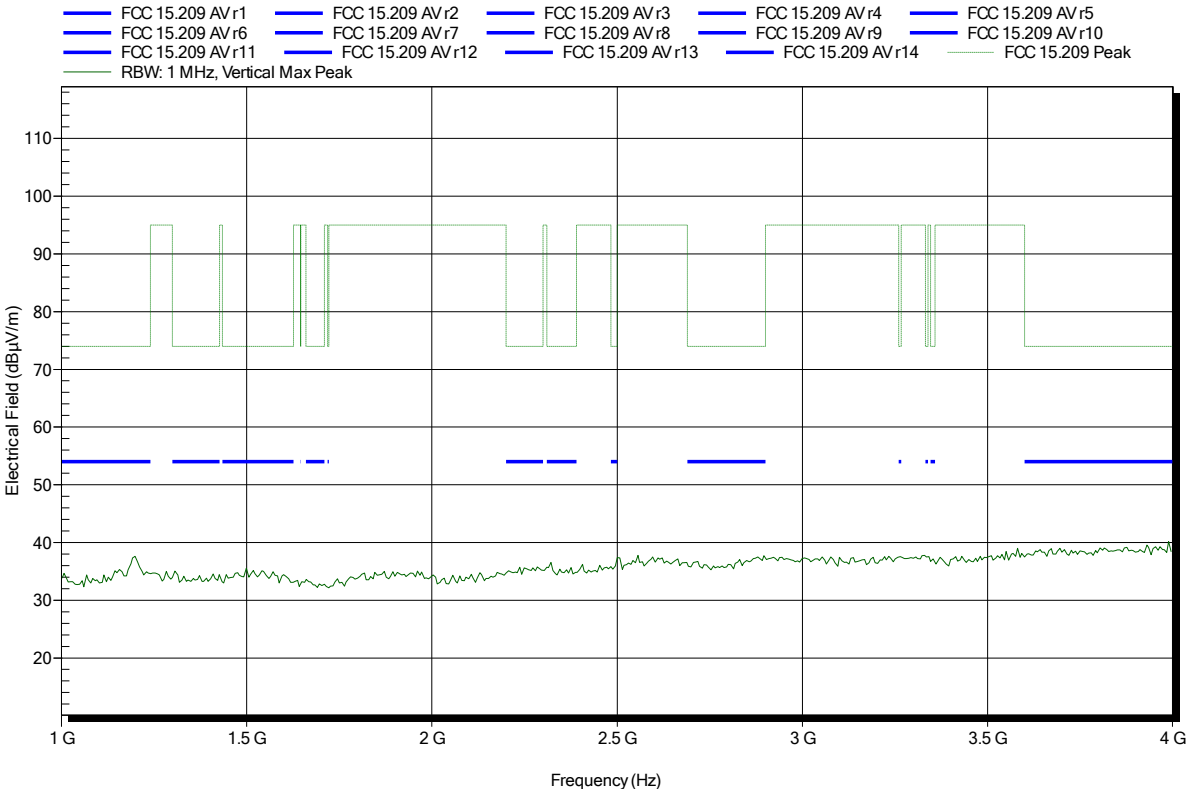


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-08
Note:	

Index 7

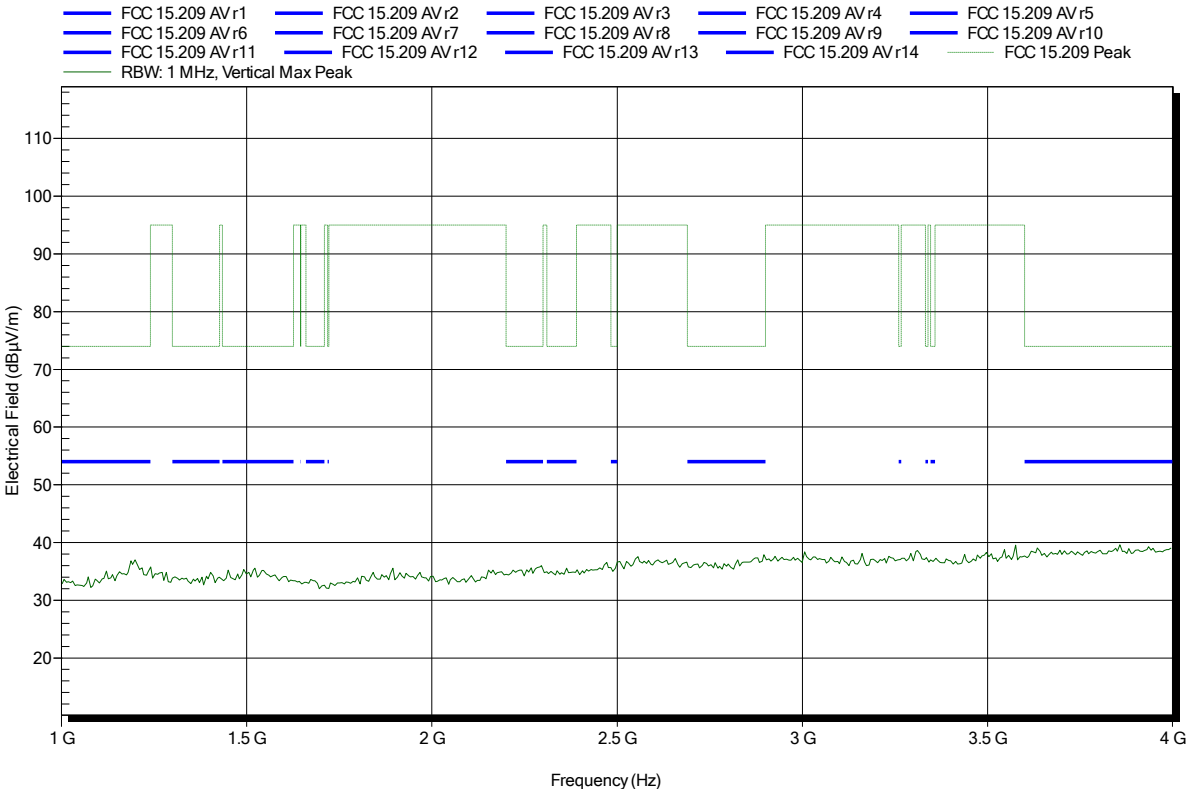


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-08
Note:	

Index 12

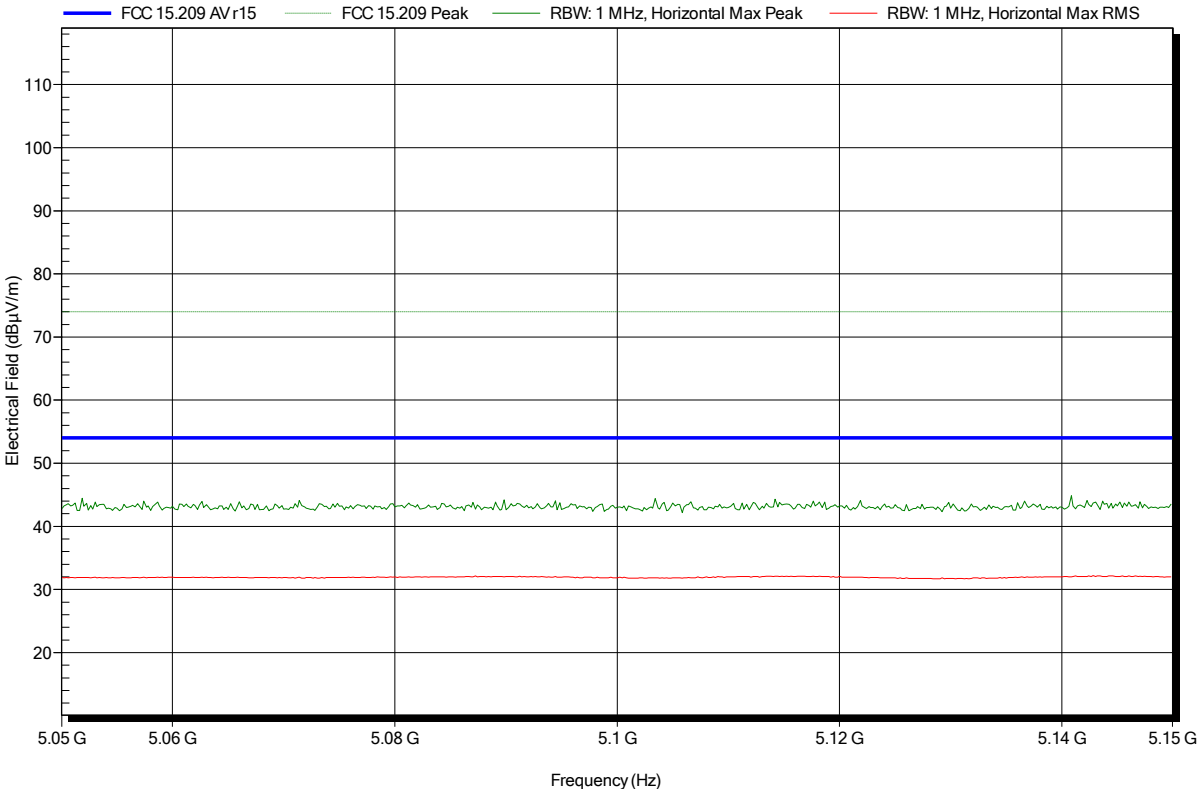


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-08
Note:	lower bandedge

Index 9

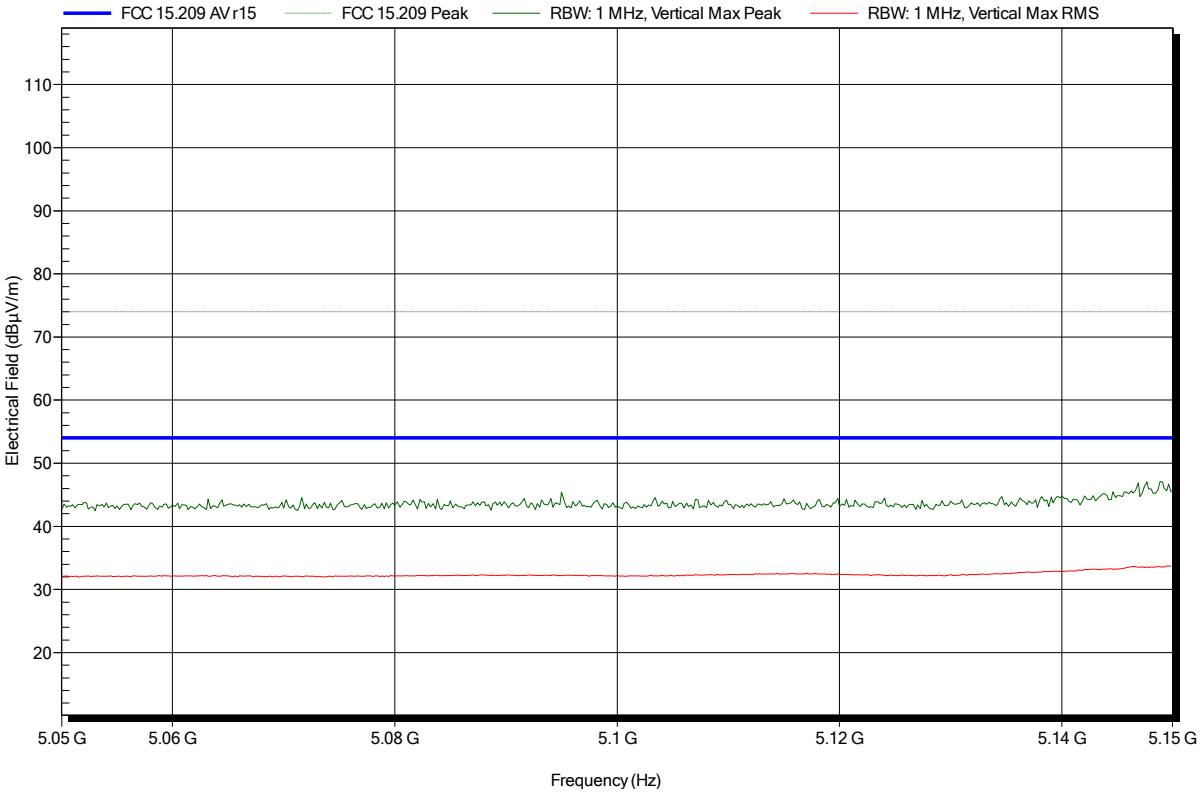


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-08
Note:	lower bandedge

Index 11

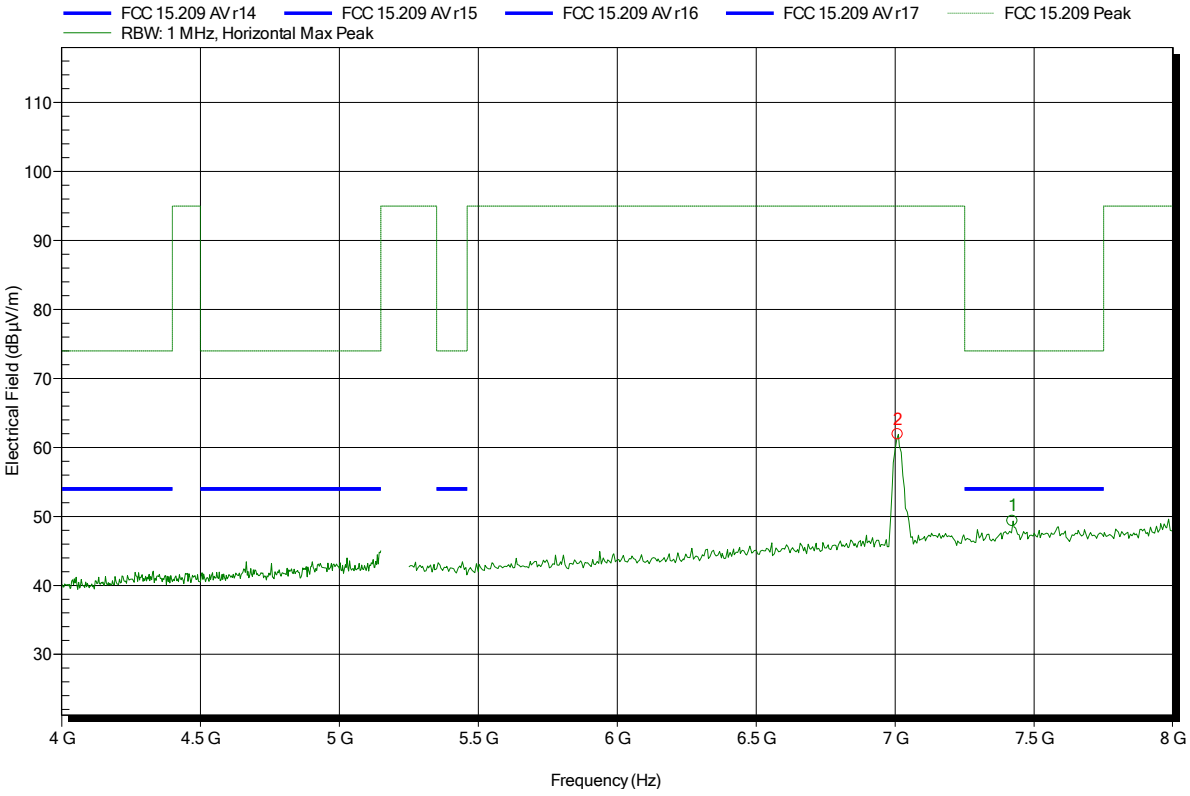


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-08
Note:	

Index 5



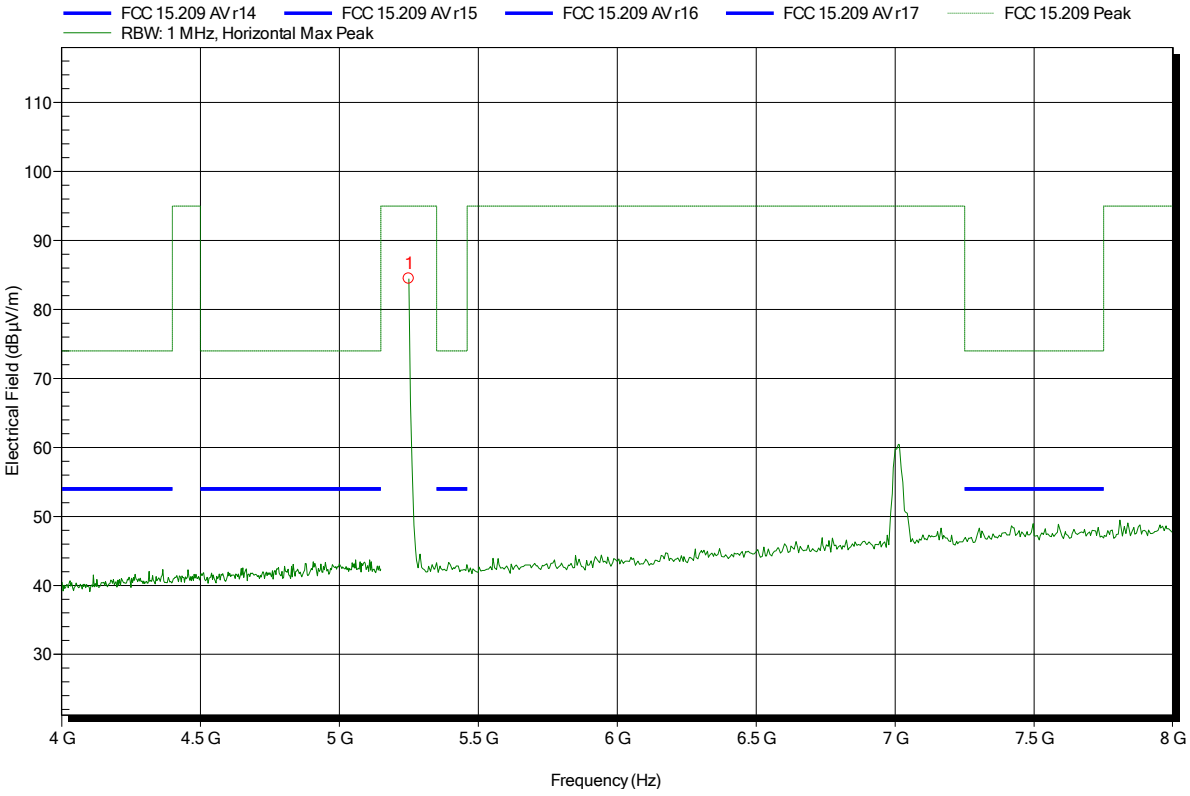
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.01 GHz	61.88 dBµV/m	95 dBµV/m	-33.12 dB	Pass
7.423 GHz	49.35 dBµV/m	74 dBµV/m	-24.65 dB	Pass

Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-08
Note:	

Index 16



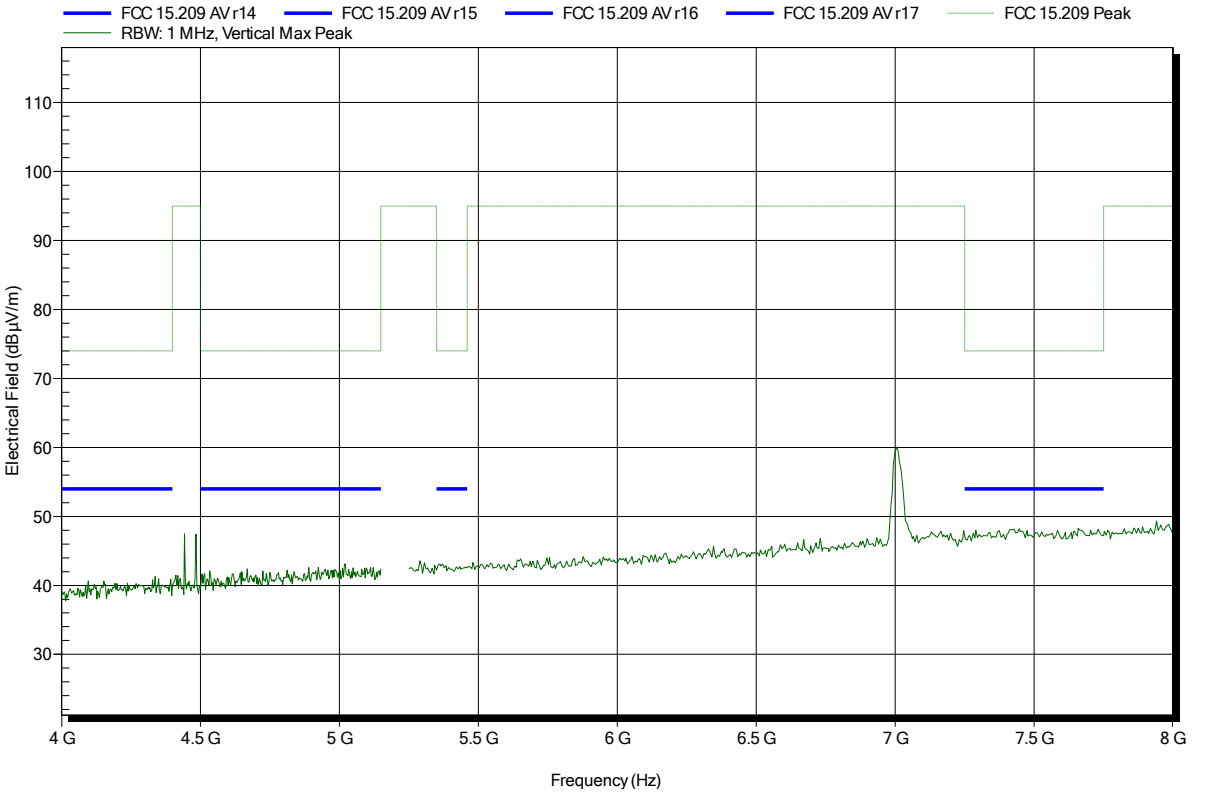
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
5.25 GHz	84.49 dBµV/m	95 dBµV/m	-10.51 dB	Pass

Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-08
Note:	

Index 8

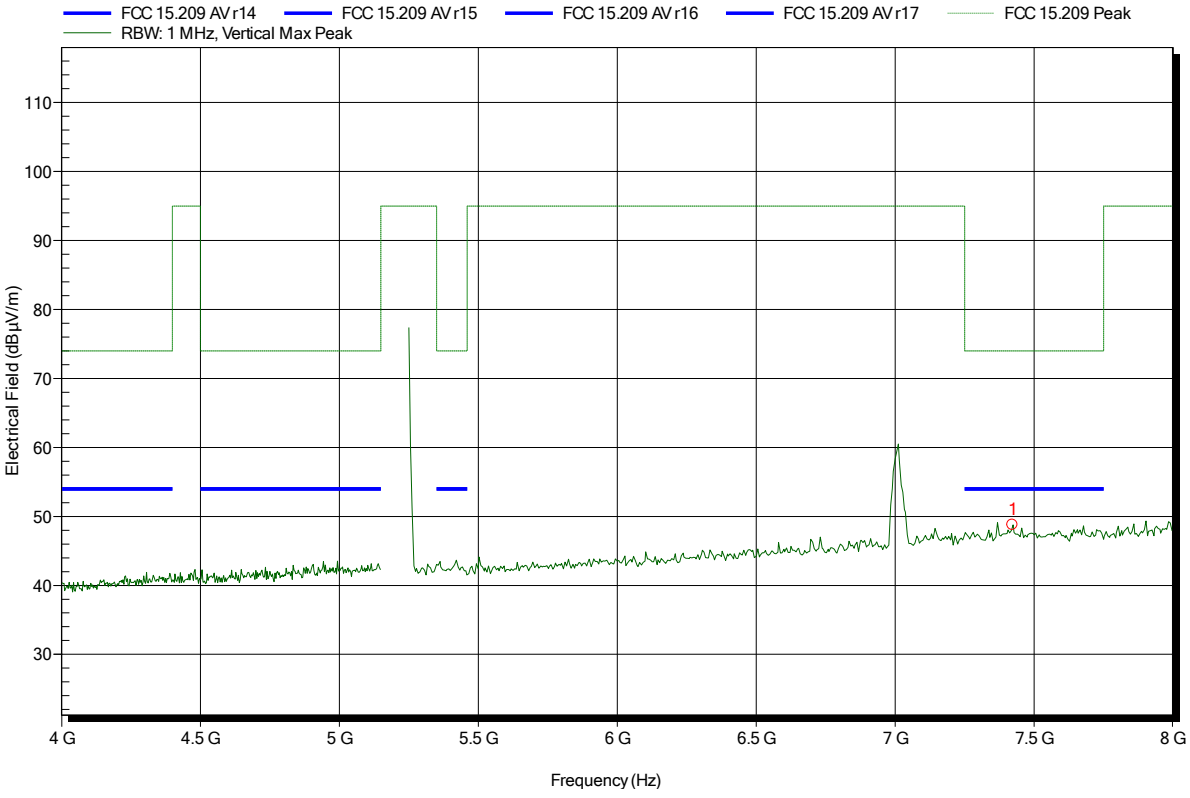


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-08
Note:	

Index 19



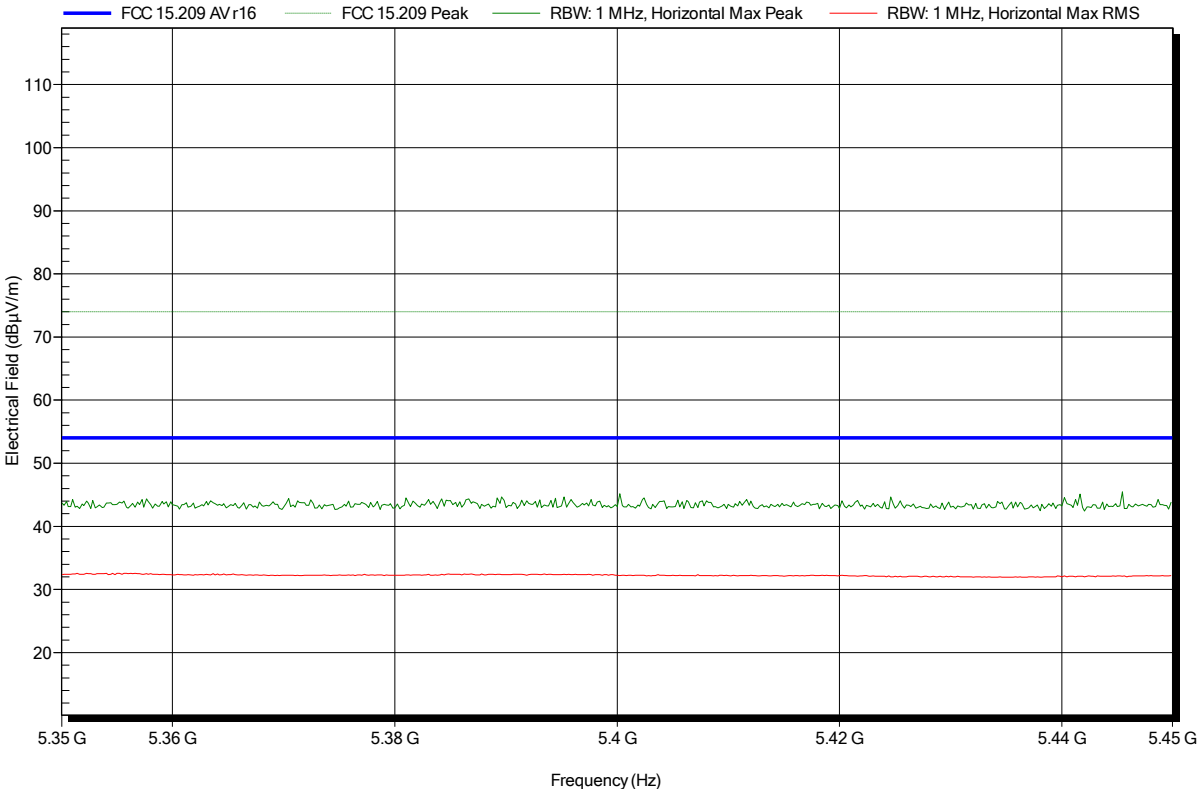
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
7.423 GHz	48.79 dBµV/m	74 dBµV/m	-25.21 dB	Pass

Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-08
Note:	upper bandedge

Index 17

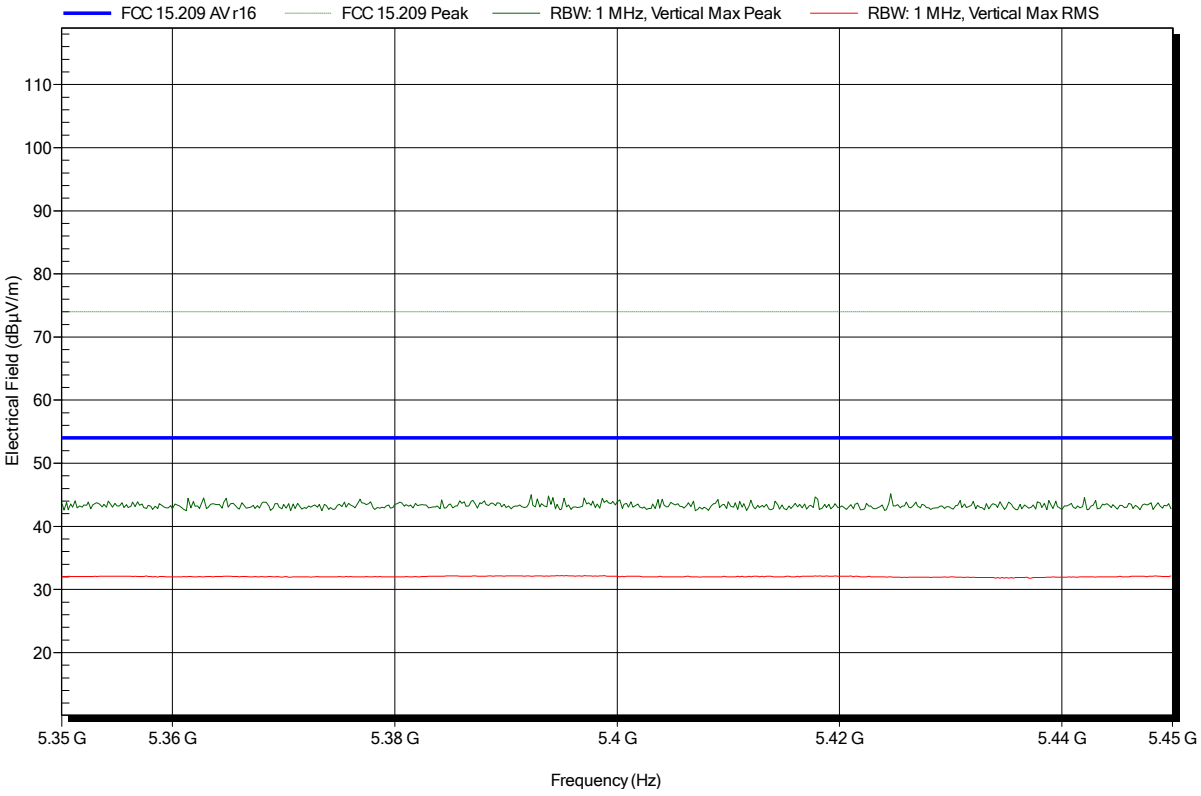


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-08
Note:	upper bandedge

Index 18

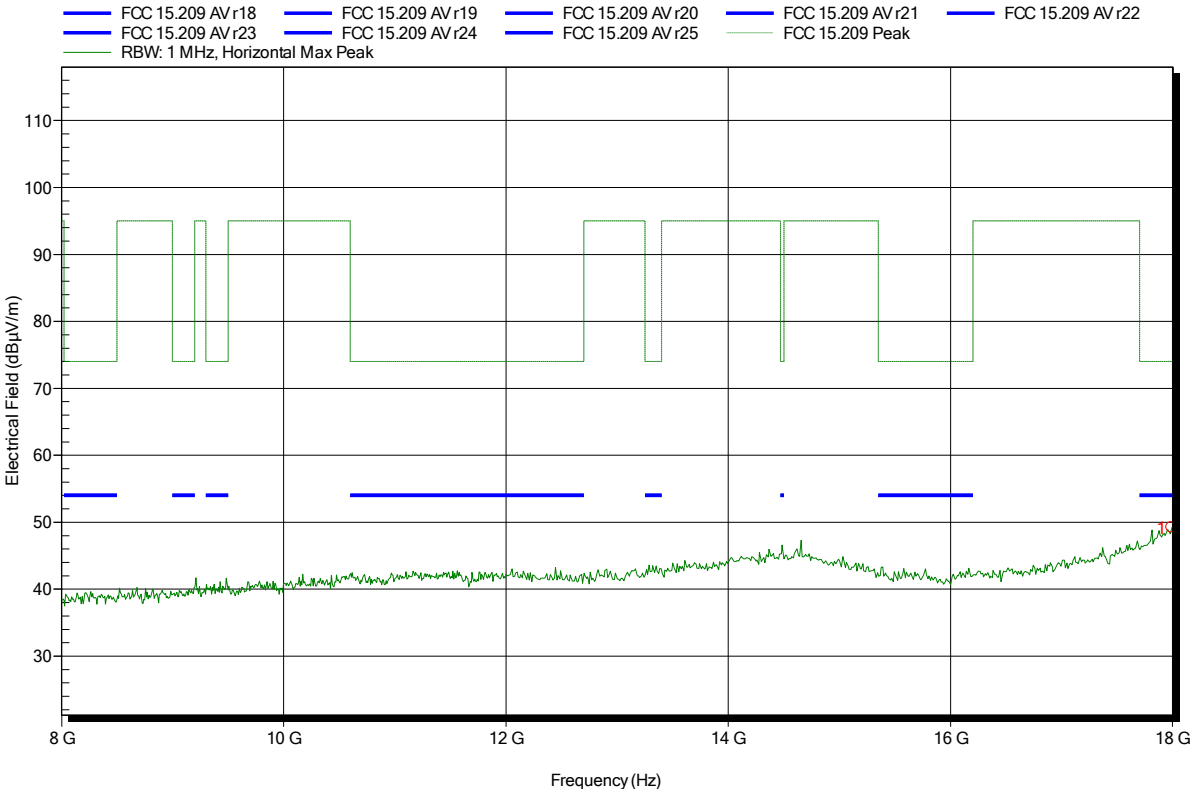


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-08
Note:	

Index 20



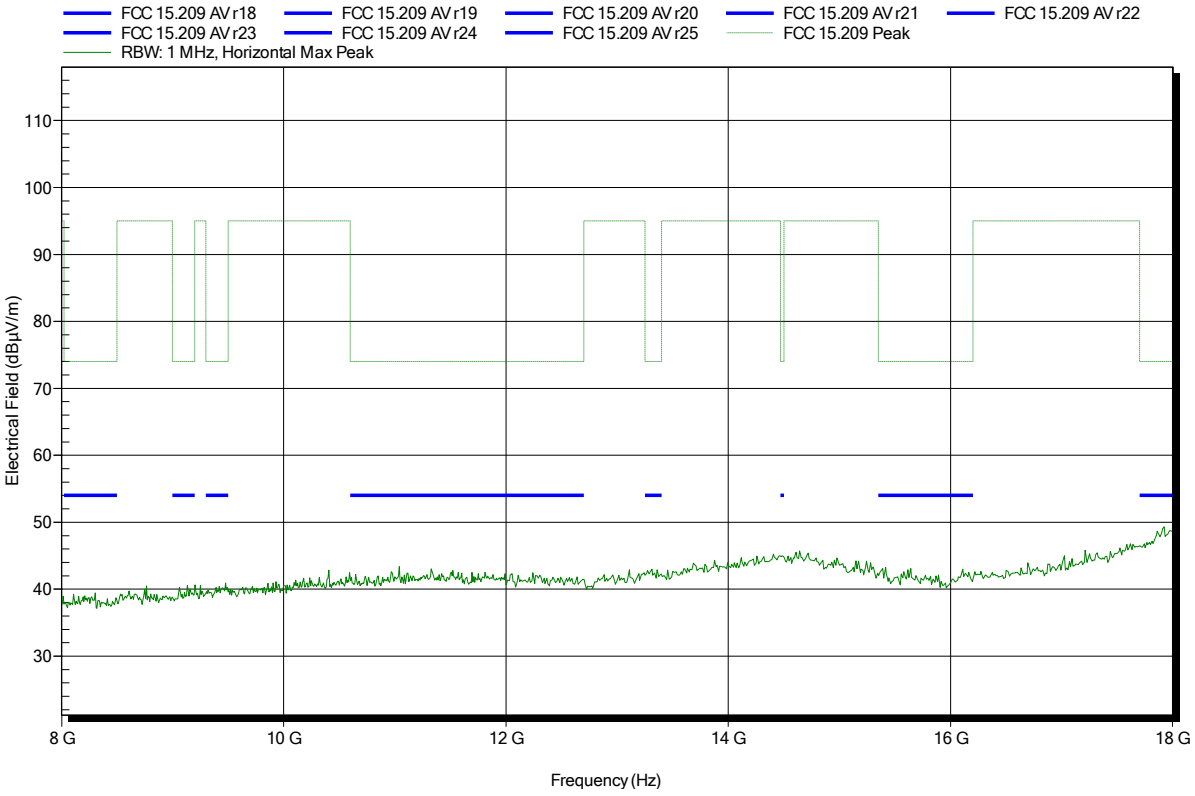
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
17.988 GHz	49.24 dBµV/m	74 dBµV/m	-24.76 dB	Pass

Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-10
Note:	

Index 31

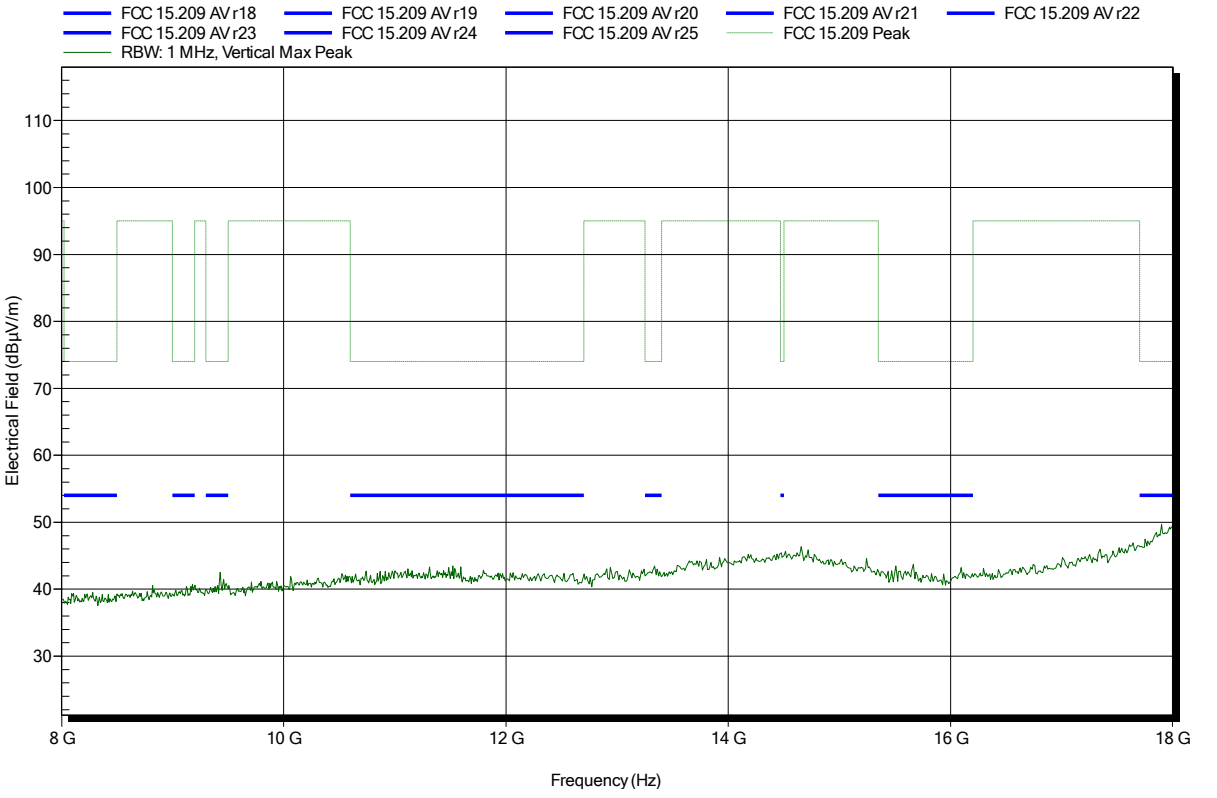


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-08
Note:	

Index 22

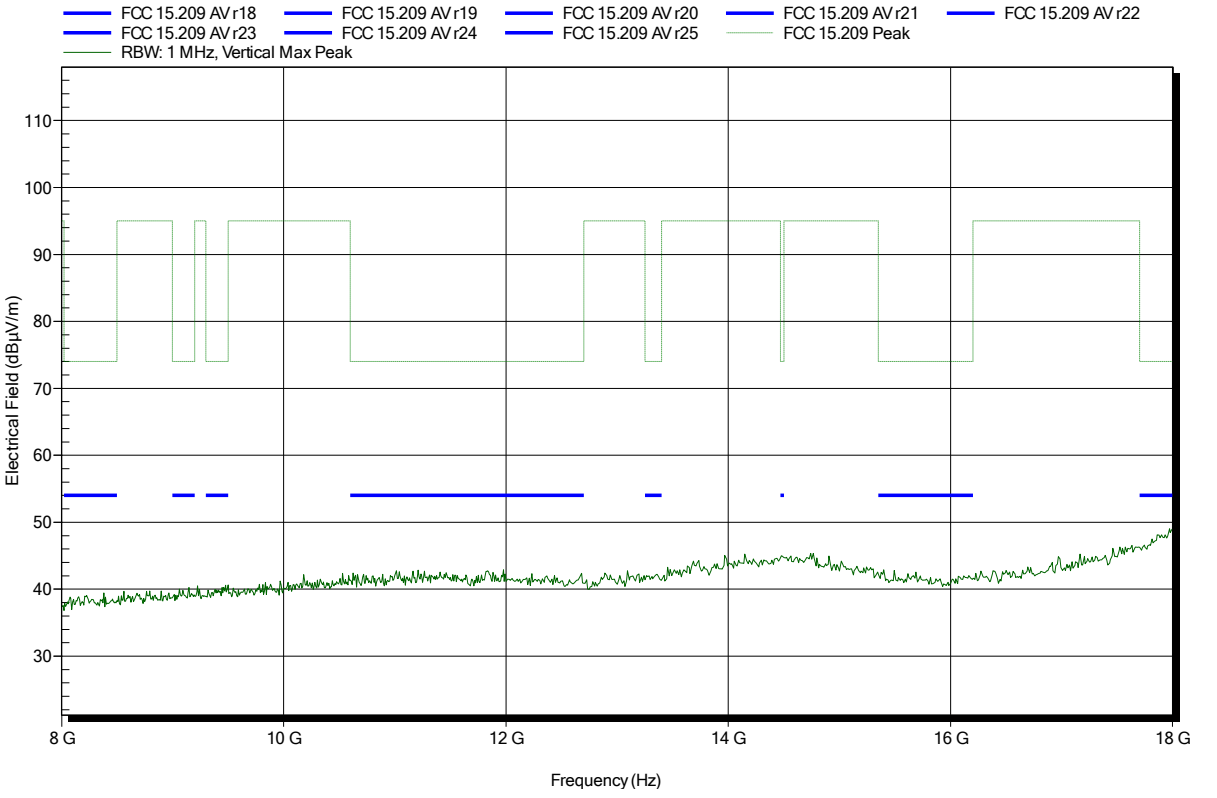


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-10
Note:	

Index 28

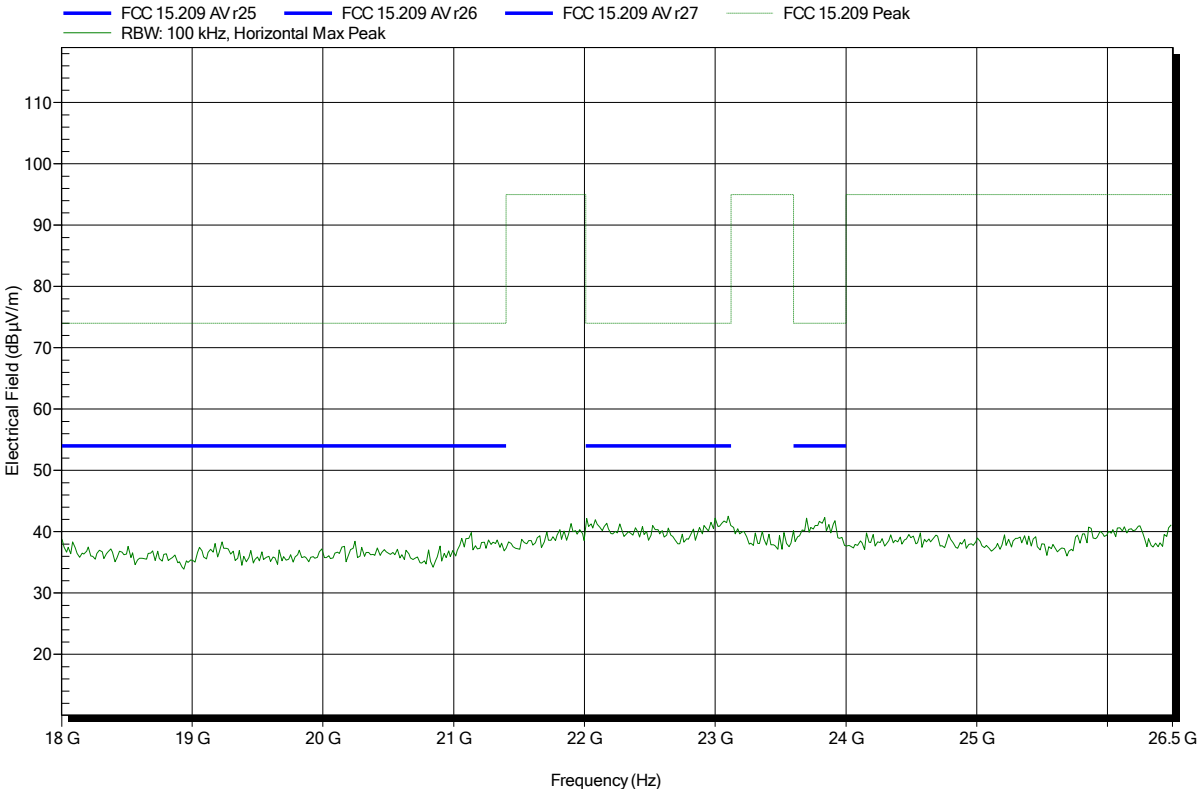


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-08
Note:	

Index 21

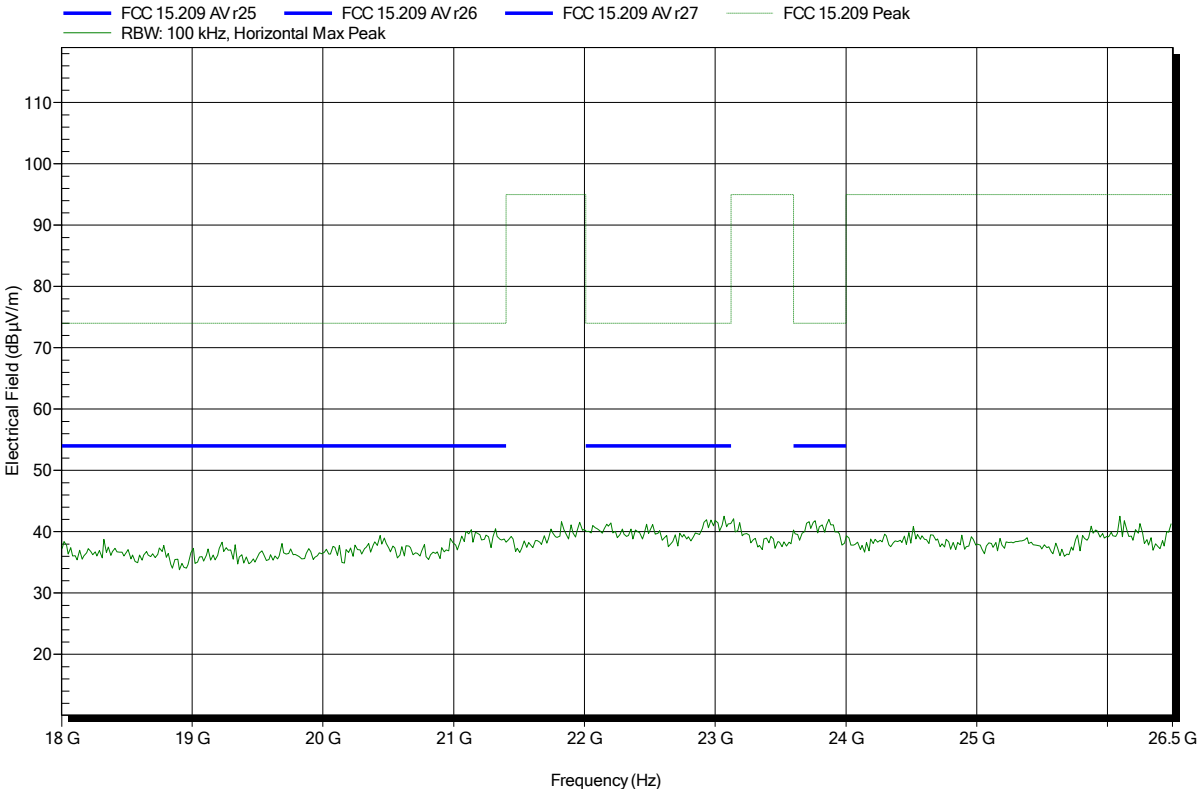


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-10
Note:	

Index 30

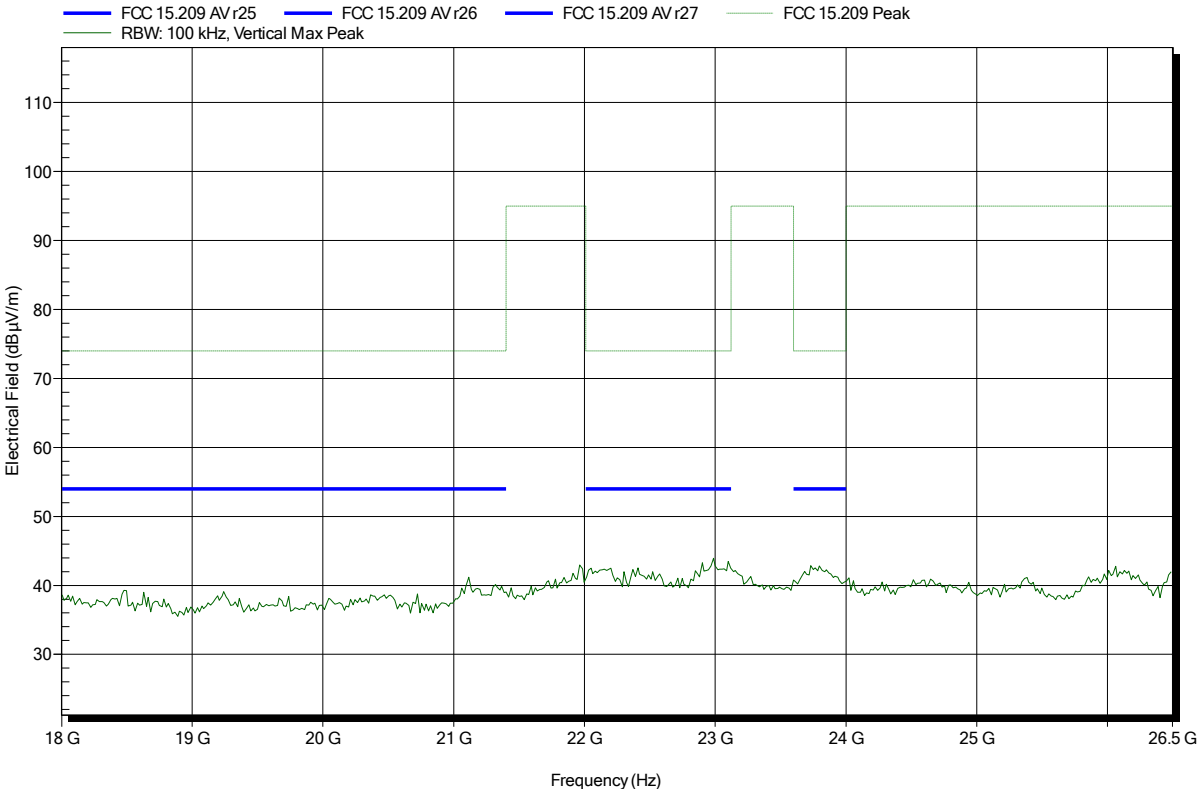


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-08
Note:	

Index 23

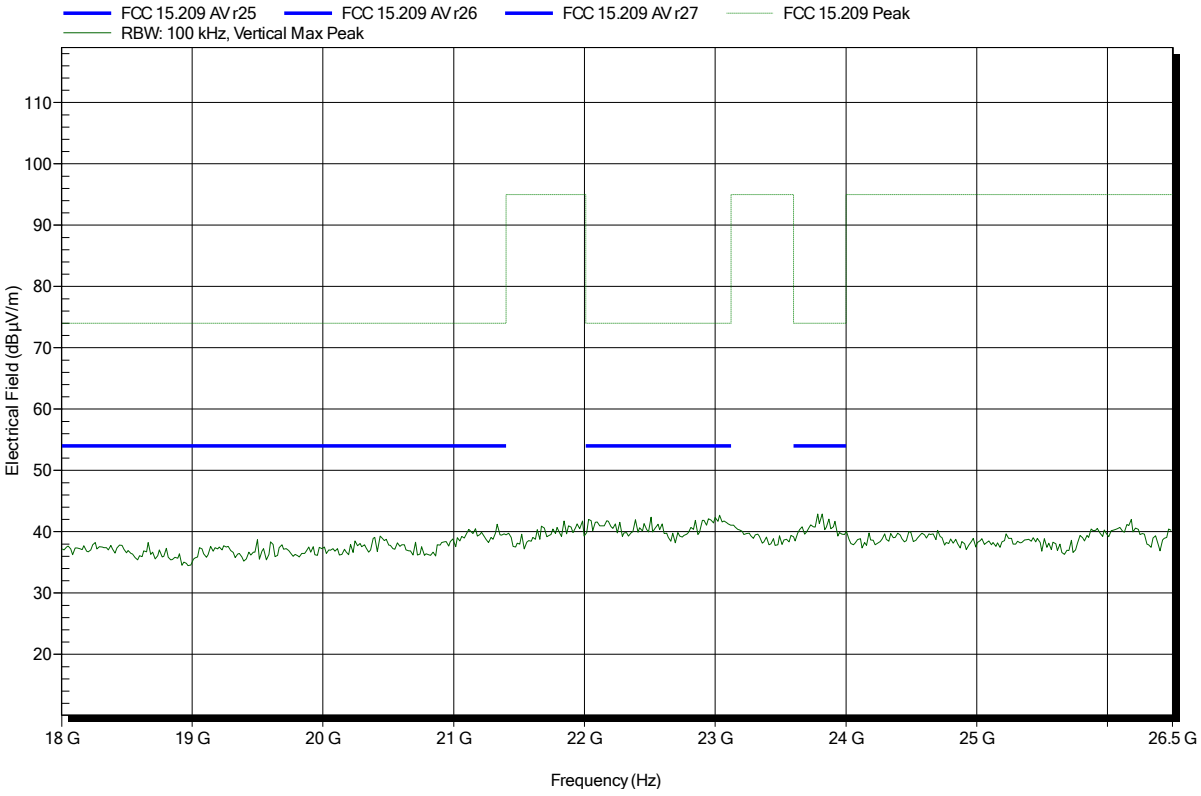


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-10
Note:	

Index 29

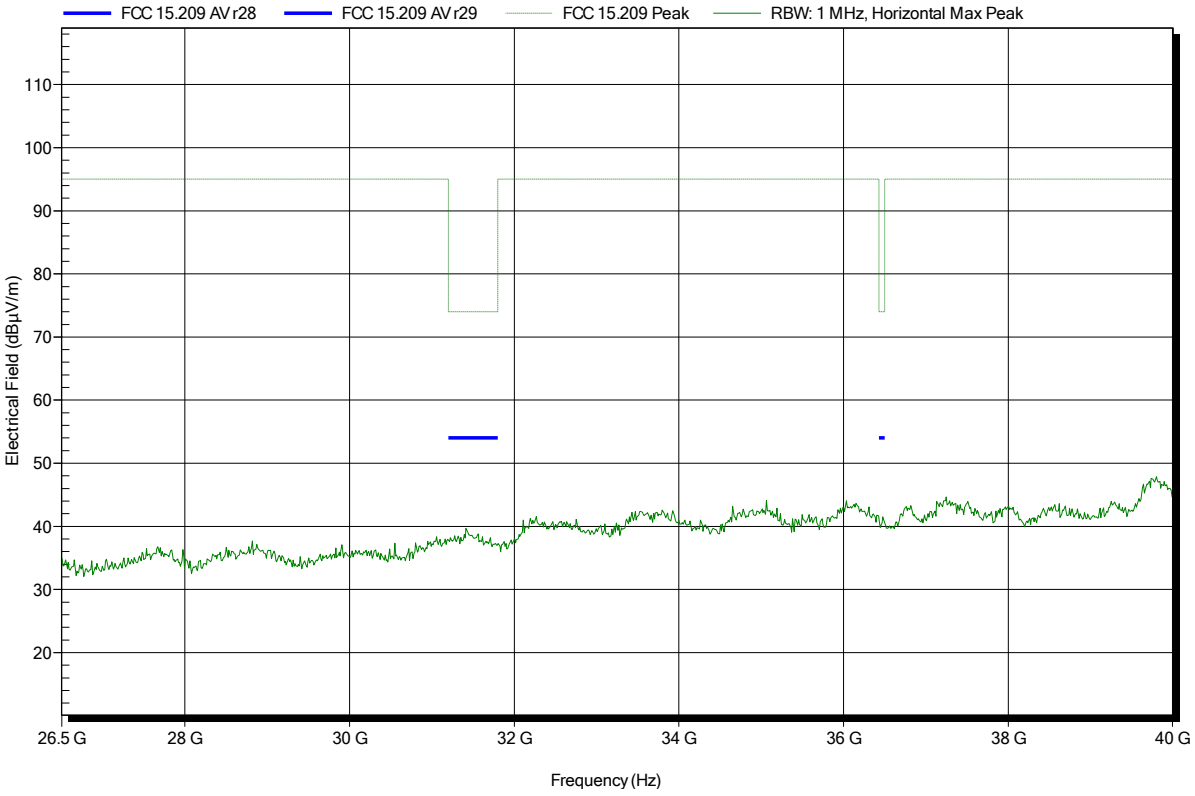


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	22240-25, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-10
Note:	

Index 24

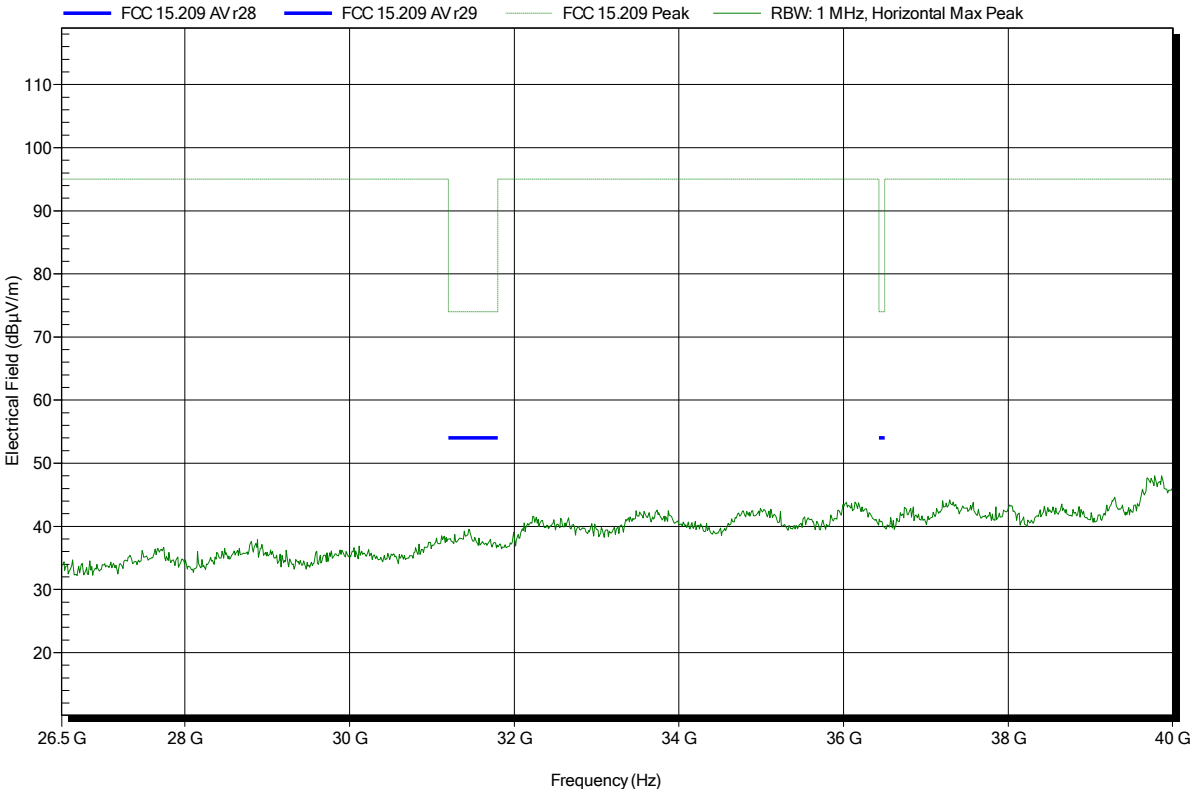


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	22240-25, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-10
Note:	

Index 27

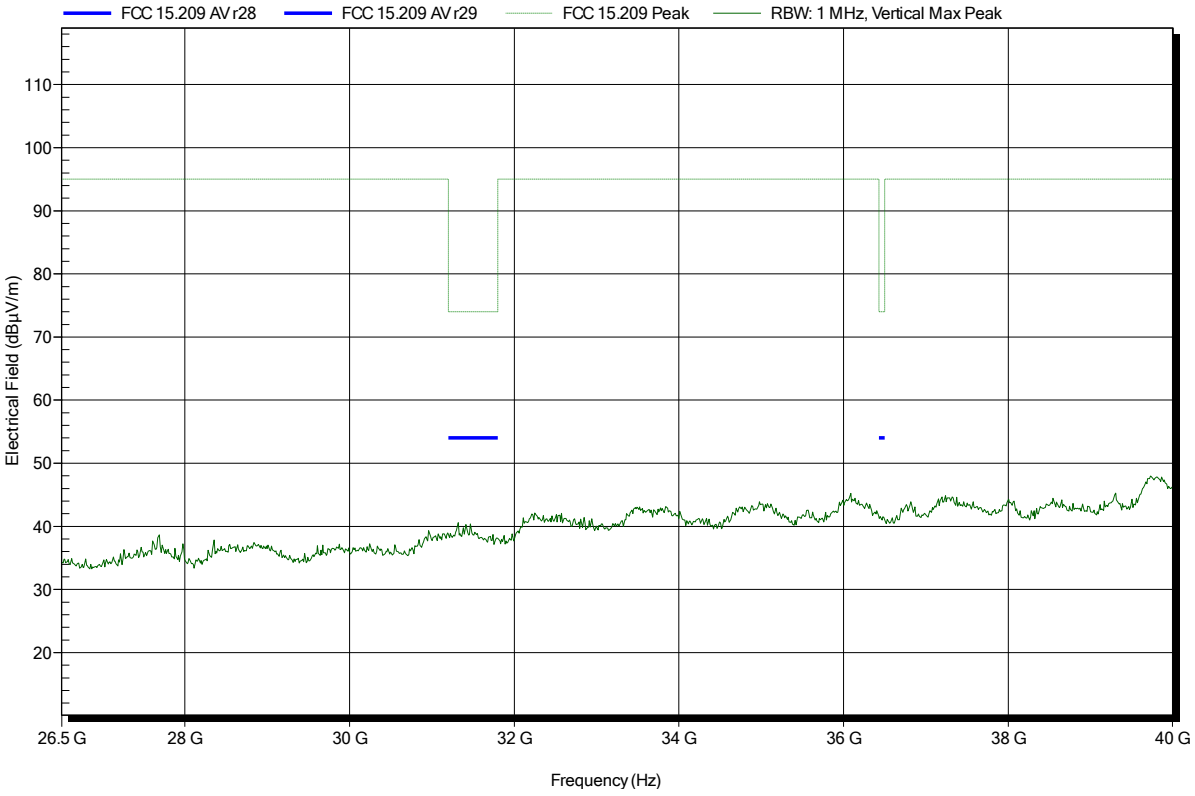


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	22240-25, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; HT20, Ch 36
Test Date:	2014-10-10
Note:	

Index 25

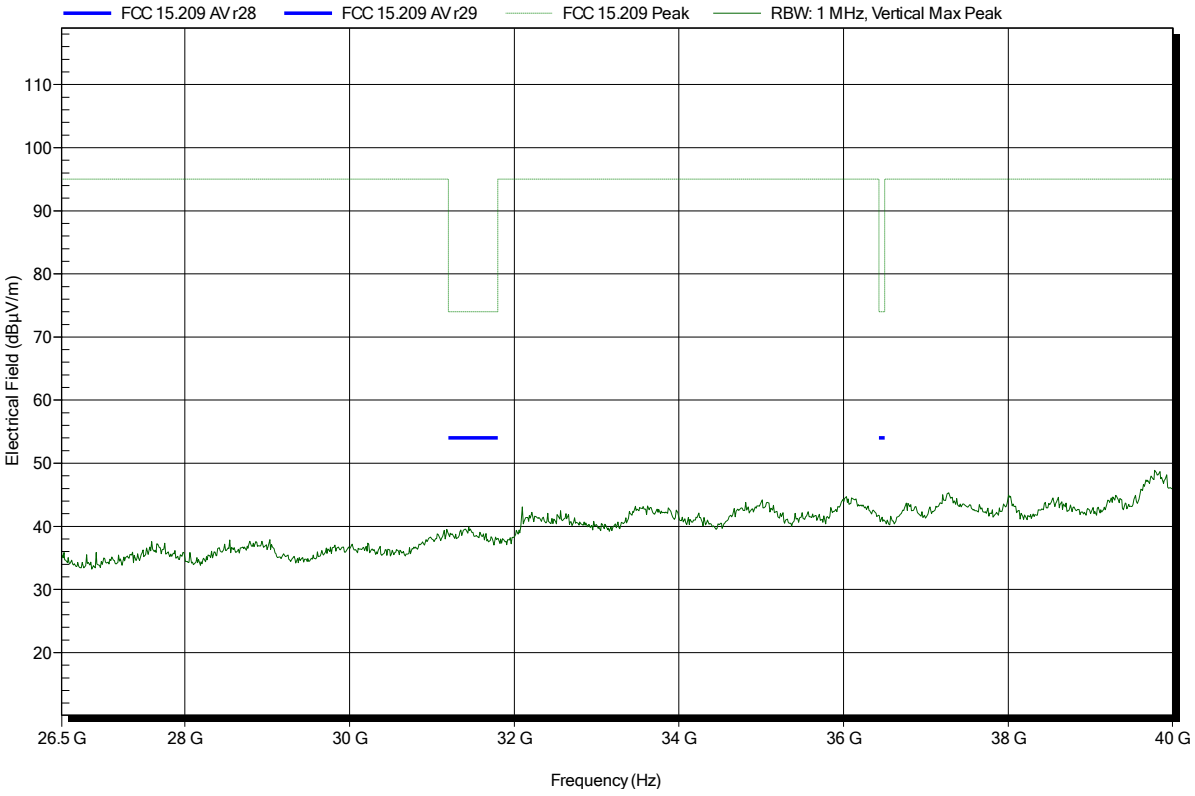


Spurious emissions according to FCC 15.407

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	22240-25, Vertical
Measurement distance:	1 m converted to 3m
Mode:	TX; HT20, Ch 48
Test Date:	2014-10-10
Note:	

Index 26



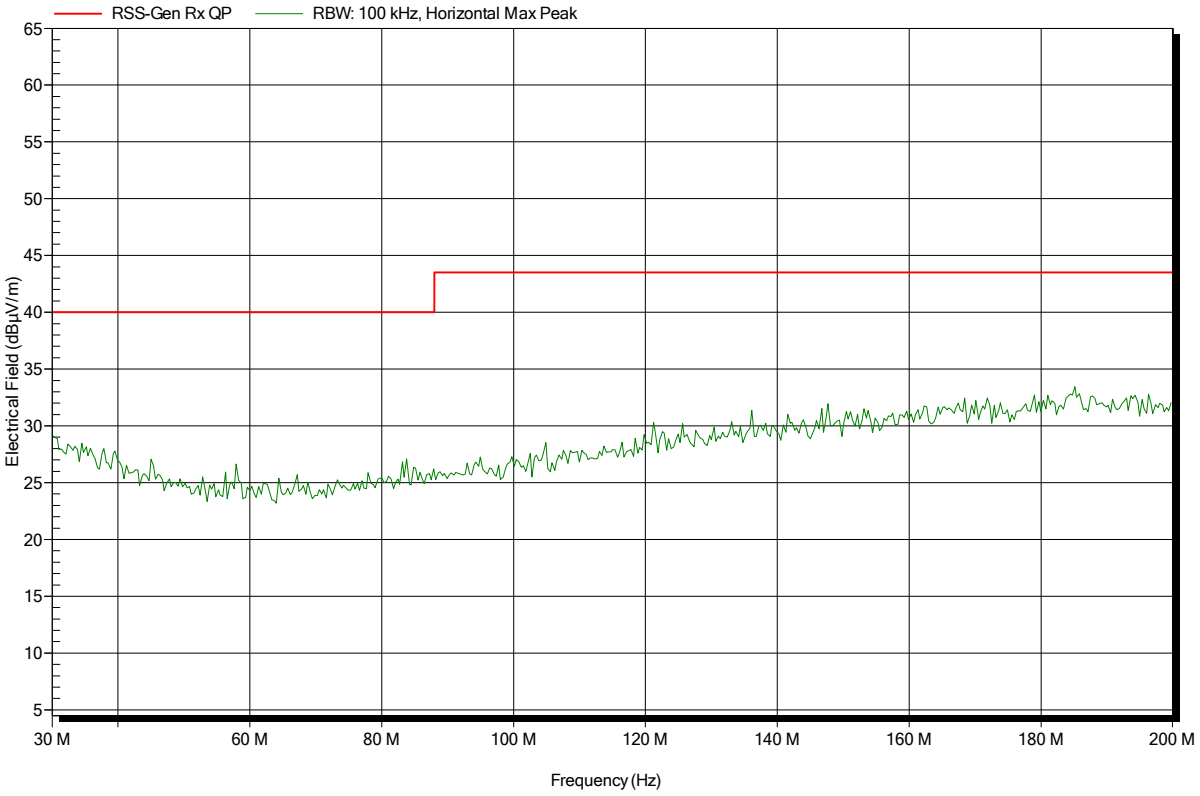
ANNEX B Receiver radiated spurious emissions

Spurious emissions according to RSS-GEN

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3 m
Mode:	RX; Ch 40
Test Date:	2014-10-10
Note:	

Index 26

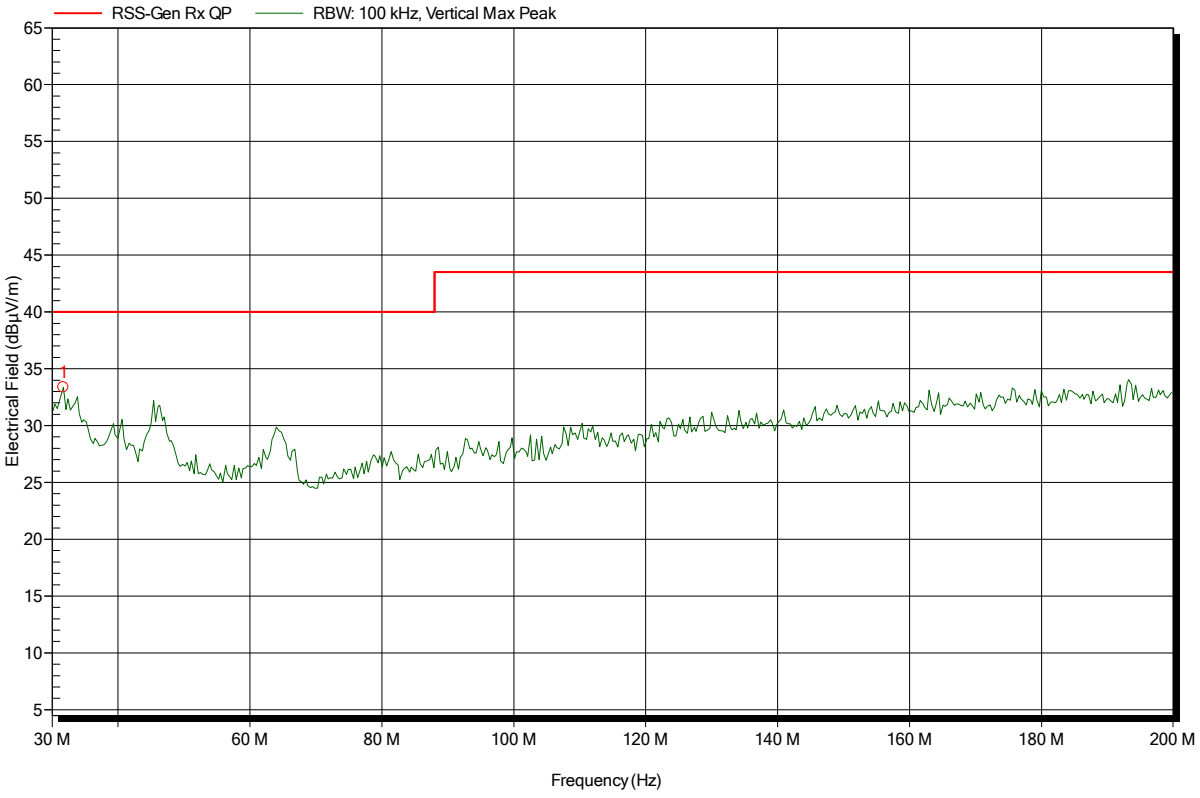


Spurious emissions according to RSS-GEN

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3 m
Mode:	RX; Ch 40
Test Date:	2014-10-10
Note:	

Index 27



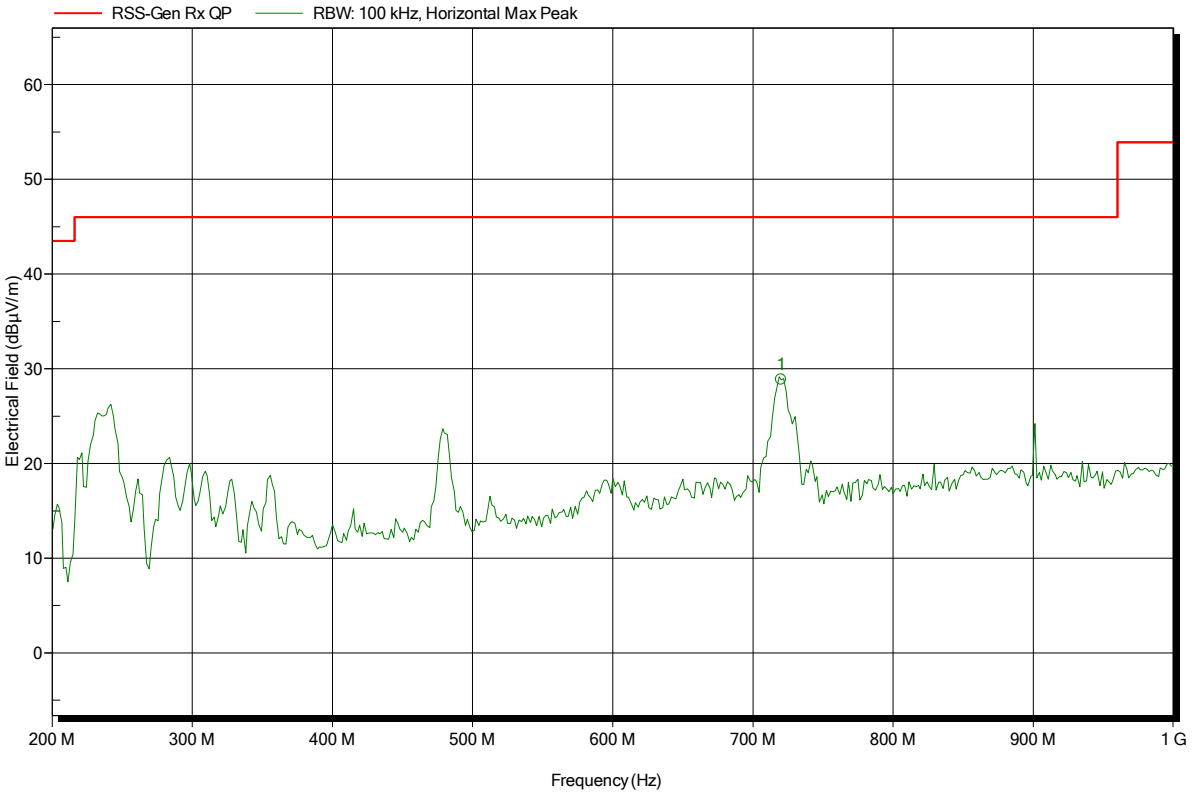
Frequency	Peak	Peak Limit	Peak Difference	Status
31.7 MHz	33.38 dBµV/m	40 dBµV/m	-6.62 dB	Pass

Spurious emissions according to RSS-GEN

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3 m
Mode:	RX; Ch 40
Test Date:	2014-10-10
Note:	

Index 28



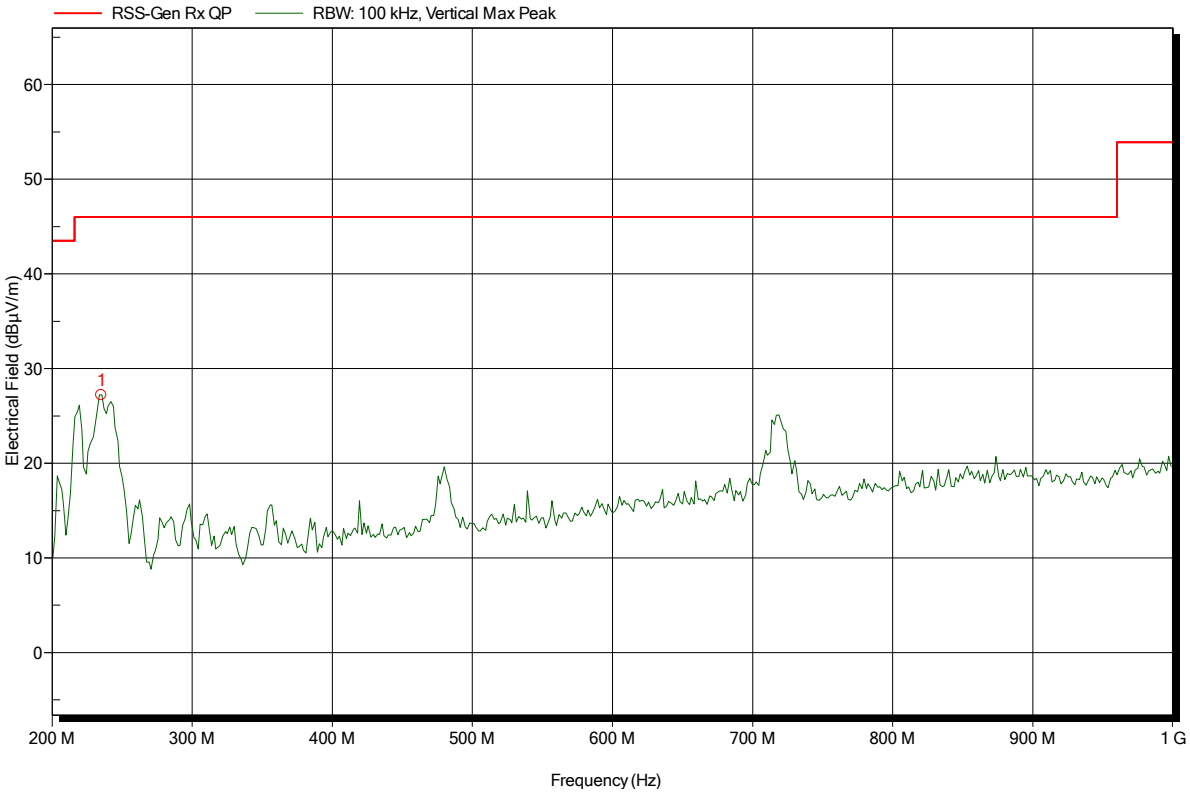
Frequency	Peak	Peak Limit	Peak Difference	Status
720 MHz	28.85 dBµV/m	46 dBµV/m	-17.15 dB	Pass

Spurious emissions according to RSS-GEN

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3 m
Mode:	RX; Ch 40
Test Date:	2014-10-10
Note:	

Index 29



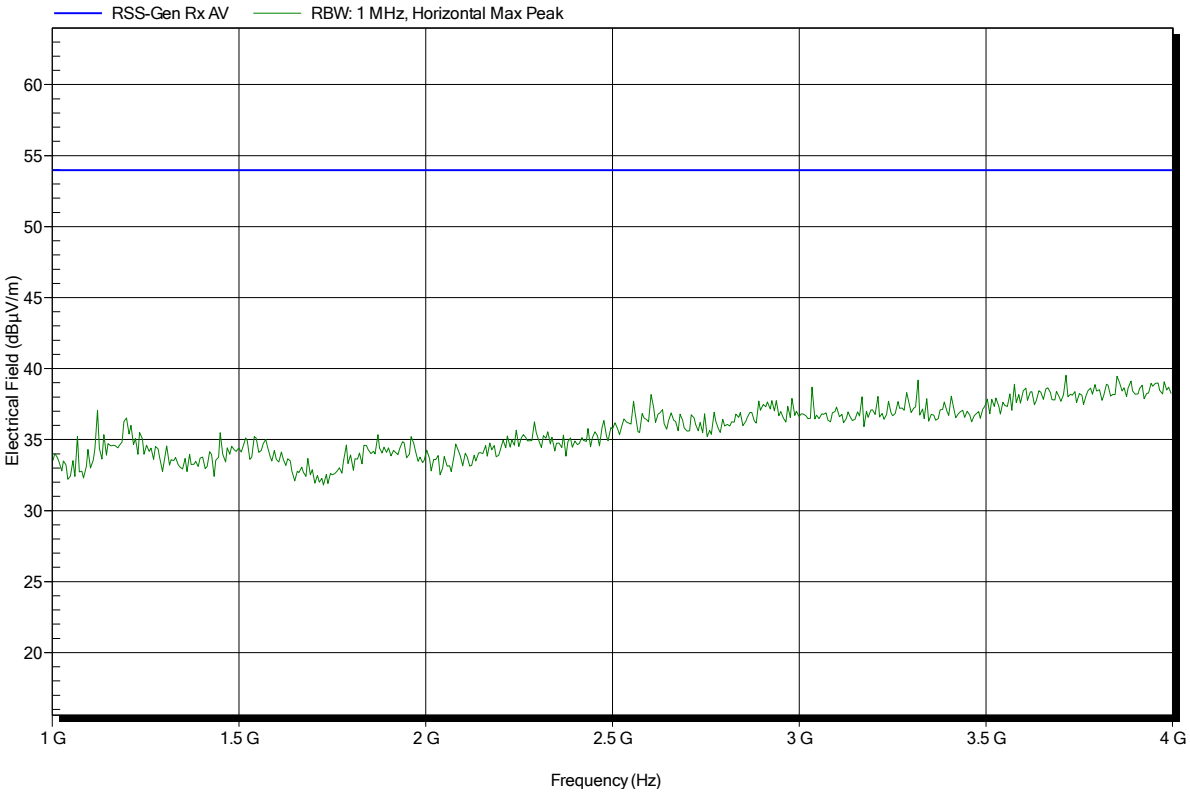
Frequency	Peak	Peak Limit	Peak Difference	Status
235.2 MHz	27.21 dBµV/m	46 dBµV/m	-18.79 dB	Pass

Spurious emissions according to RSS-GEN

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; Ch 40
Test Date:	2014-10-08
Note:	

Index 20

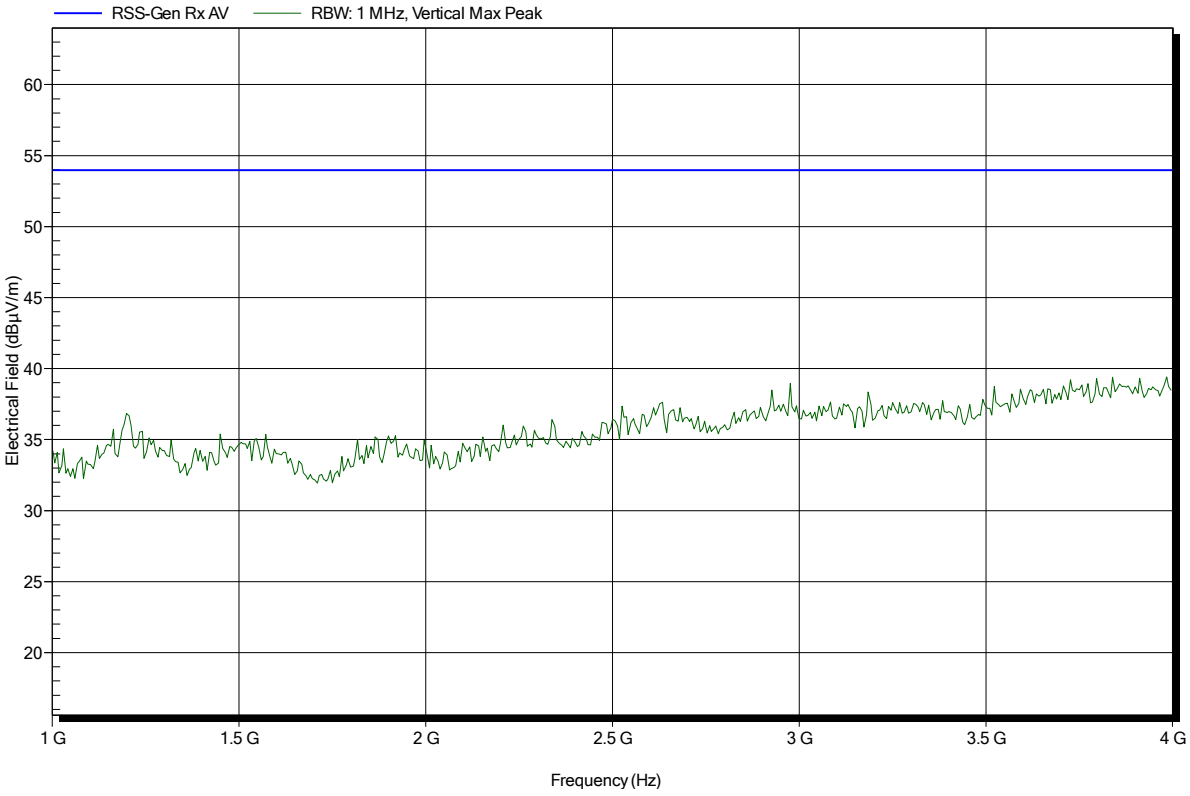


Spurious emissions according to RSS-GEN

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; Ch 40
Test Date:	2014-10-08
Note:	

Index 22

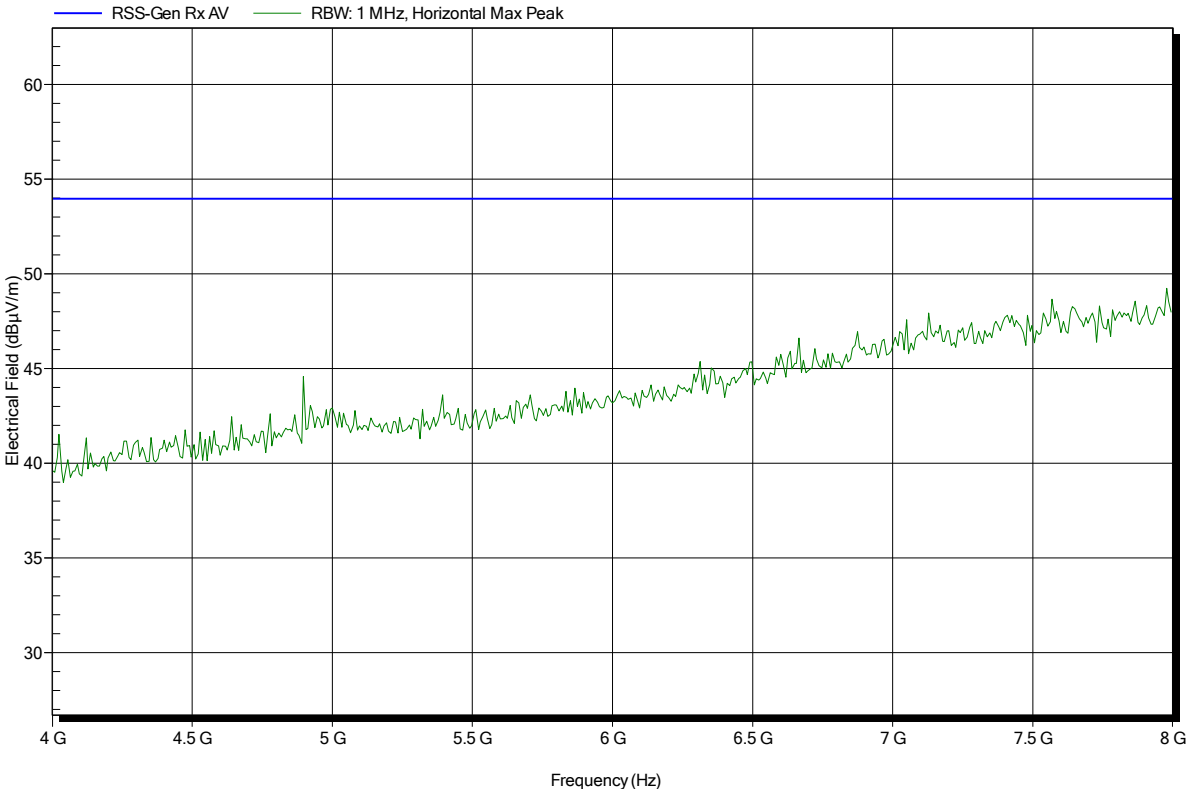


Spurious emissions according to RSS-GEN

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; Ch 40
Test Date:	2014-10-08
Note:	

Index 23

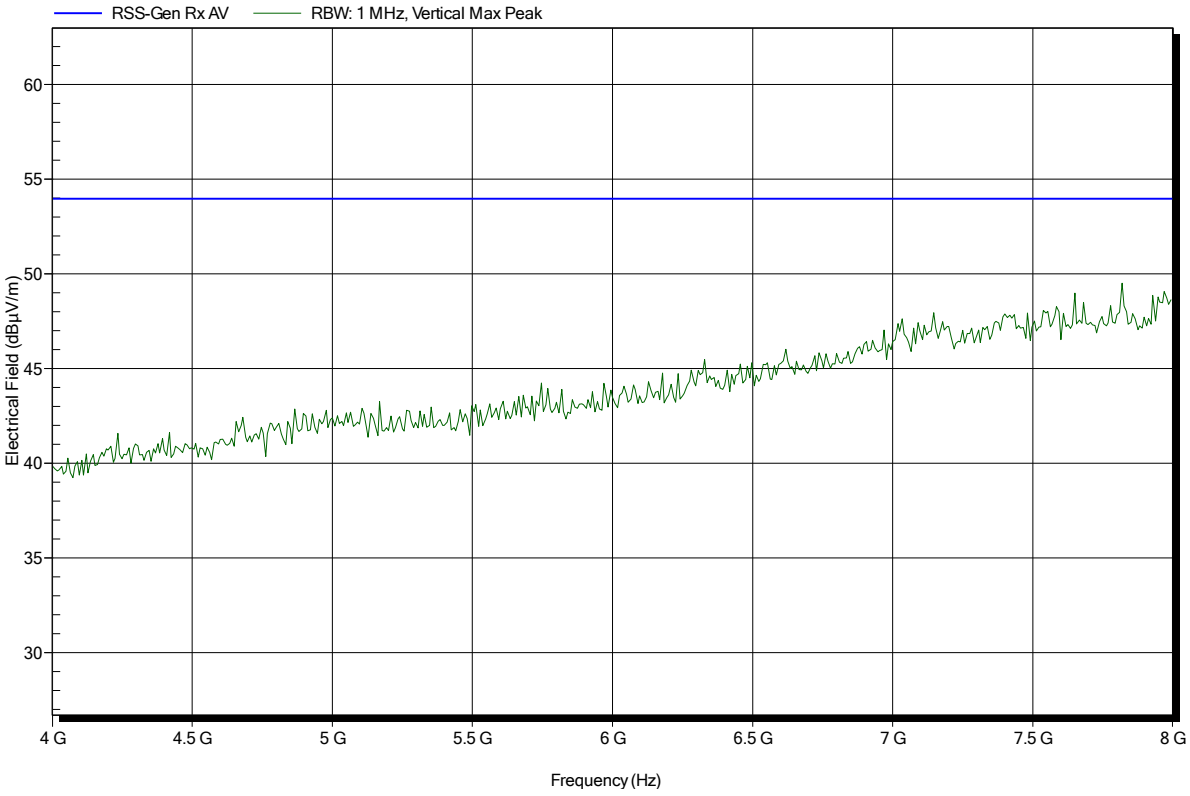


Spurious emissions according to RSS-GEN

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; Ch 40
Test Date:	2014-10-08
Note:	

Index 21

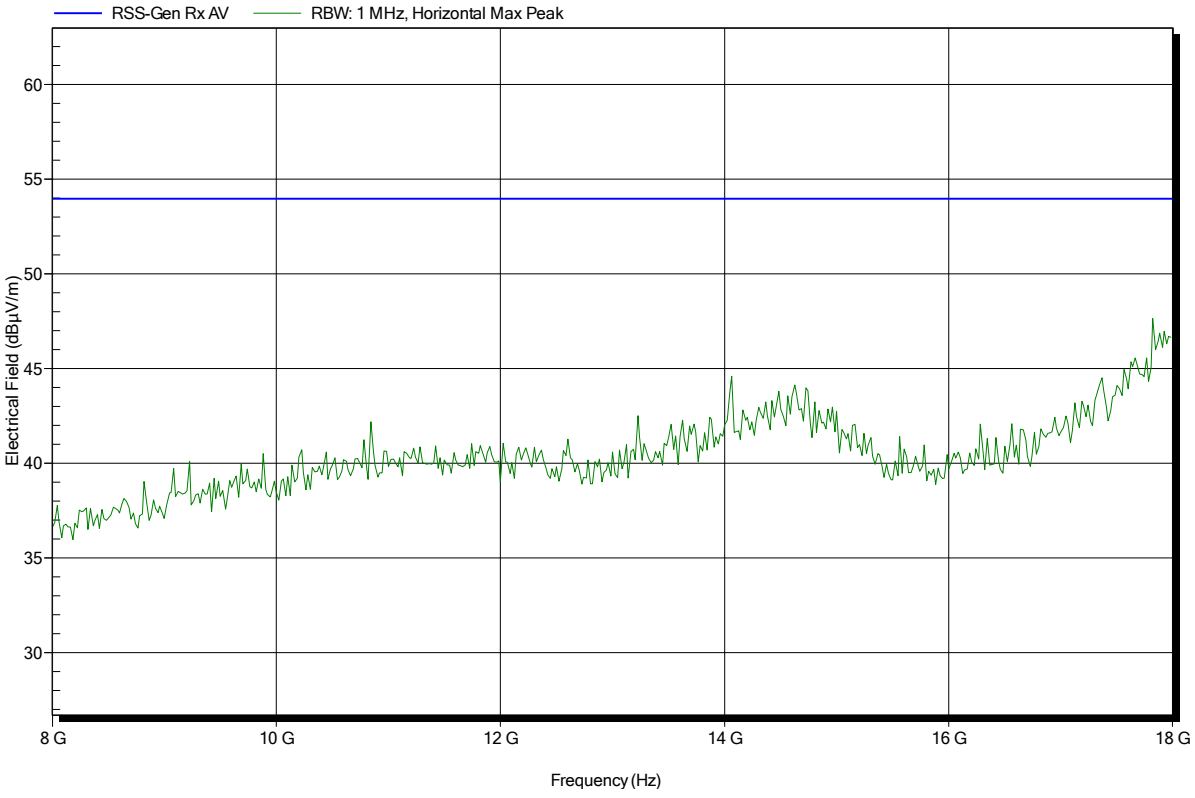


Spurious emissions according to RSS-GEN

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	RX; Ch 40
Test Date:	2014-10-10
Note:	

Index 24



Spurious emissions according to RSS-GEN

Project number: G0M-1407-3973

Applicant:	BARTEC PIXAVI AS
EUT Name:	Smartphone
Model:	ImpactX
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Jahn
Test Conditions:	Tnom: 25°C, Vnom:
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	RX; Ch 40
Test Date:	2014-10-10
Note:	

Index 25