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CERTIFICATION TEST REPORT

Report Number:	2010 11160862 FCC
Project Number:	67067
Nex Number:	160862
Applicant:	EXIGENT SENSORS 11331 MARKON DR Garden Grove, CA 92841
Equipment Under Test (EUT):	WIRELESS SMOKE ALARM
Model(s):	EX10,EX10AC,EX10 CAN,EX10AC CAN
FCC ID:	YST-NX13
IC:	9299A-NX13
In Accordance With:	FCC Part 15 Subpart C, 15.249 IC RSS-210 Issue 8 December 2010 IC RSS-Gen Issue 3 December 2010
Tested By:	Nemko USA Inc. 11696 Sorrento Valley Road, Suite F San Diego, CA 92121
Authorized By:	 Alan Laudani, EMC/RF Test Engineer
Date:	December 10, 2010
Total Number of Pages:	31

Section1: Summary of Test Results

General

All measurements are traceable to national standards

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15; Subpart C and IC RSS-210. Radiated tests were conducted is accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC and IC.

The assessment summary is as follows:

Apparatus Assessed:	Wireless Smoke Alarm
Model:	EX10,EX10AC,EX10 CAN,EX10AC CAN
Specification:	FCC Part 15 Subpart C, 15.249 IC RSS-210 Issue 8 December 2010
Date Received in Laboratory:	November 10, 2010
Compliance Status:	Complies
Exclusions:	None
Non-compliances:	None

1.1 Report Release History

REVISION	DATE	COMMENTS
-	December 10, 2010	Prepared By: Ferdinand Custodio
-	December 10, 2010	Initial Release: Alan Laudani

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025.

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TESTED BY: _____ Date: December 10, 2010
Ferdinand Custodio, EMC Test Engineer

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Section 2: Equipment Under Test

2.1 Product Identification

The Equipment Under Test was indentified as follows:

Exigent Sensors EX10,EX10AC,EX10 CAN,EX10AC CAN Wireless Smoke Alarm

2.2 Samples Submitted for Assessment

The following sample of the apparatus has been submitted for type assessment:

Sample No.	Description	Serial Nos.
160862-1, 160862-2, 160862-3, 160862-4	EX10,EX10AC,EX10 CAN,EX10AC CAN WIRELESS SMOKE ALARM	N/A

2.3 Theory of Operation

The EX10,EX10AC,EX10 CAN,EX10AC CAN are Wireless Smoke Alarm using Z-Wave protocol to wirelessly communicate between other smoke alarms using a mesh network (no host or infrastructure). EX10AC and EX10AC CAN are identical except for model name. EX10 and EX10 CAN are also identical, these are the depopulated versions of the EX10AC and EX10AC_CAN without the AC option. For this report, the EX10AC was assessed as worst case configuration. The EUT was verified in transmit and receive mode. During transmit mode, the EUT was configured to transmit continuously.

2.4 Technical Specifications of the EUT

Manufacturer:	Exigent Sensors
Operating Frequency:	908.42 MHz in the 902-928 MHz Band
Number of Operating Frequencies:	1
Rated Power:	91dBµV/m @ 3 meters
Modulation:	FSK
Reference Designator:	182KF1D
Antenna Type:	Microstrip trace (50Ω/0 dBi @ 906-910MHz)
Antenna Connector:	None (integral)
Power Source:	3VDC (AA Batteries – for Battery model) 120VAC (for AC model)

Section 3: Test Conditions

3.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 15 Subpart C, 15.249
Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5850 MHz and 24.0-24.25 GHz bands.

IC RSS-210 Issue 8 December 2010
Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment

IC RSS-Gen Issue 3 December 2010
General Requirements and Information for the Certification of Radio Apparatus

3.2 Deviations From Laboratory Test Procedures

No deviations from Laboratory Test Procedure

3.3 Test Environment

All tests were performed under the following environmental conditions:

Temperature range	18-22 ^{o}C
Humidity range	13-24%
Pressure range	101.6 – 102.1 kPa

3.4 Test Equipment

Nemko ID	Device	Manufacturer	Model	Serial Number	Cal Date	Cal Due Date
E1018	9kHz to 7GHz Spectrum Analyzer	Rohde & Schwarz	FSP7	835363/0003	1/22/2010	1/22/2011
E1019	Two Line V-Network	Rohde & Schwarz	ENV216	101045	3/12/10	03/12/11
827	Preamplifier	Com-Power	PA-103	161032	4/21/10	04/21/11
911	Spectrum Analyzer	Agilent	E4440A	US41421266	10/26/10	10/26/11
317	Preamplifier	HP	8449A	2749A00167	5/7/2010	5/7/2011
877	Antenna, DRG Horn, .7-18GHz	AH Systems	SAS-571	688	8/16/2010	8/16/2011
114	Antenna, Bicon	EMCO	3104	2997	3/5/2010	3/5/2012
110	Antenna, LPA	Electrometrics	LPA-25	1217	1/10/2009	2/10/2011

Registration of the OATS are on file with the Federal Communications Commission, under Registration Number 90579, the VCCI under registration number R-3027, and are also registered with Industry Canada under Site Numbers 2040B-1 and 2040B-2.

Section 4: Observations

4.1 Modifications Performed During Assessment

No modifications were performed during assessment.

4.2 Record Of Technical Judgements

No technical judgements were made during the assessment.

4.3 EUT Parameters Affecting Compliance

The user of the apparatus could not alter parameters that would affect compliance.

4.4 Test Deleted

No Tests were deleted from this assessment.

4.5 Additional Observations

There were no additional observations made during this assessment.

Section 5: Results Summary

This section contains the following:

FCC Part 15 Subpart C: §15.249
IC RSS-210 Issue 8 December 2010 Annex A2.9
IC RSS-Gen Issue 3 December 2010

The column headed "Required" indicates whether the associated clauses were invoked for the apparatus under test. The following abbreviations are used:

N No: not applicable / not relevant
Y Yes: Mandatory i.e. the apparatus shall conform to these tests.
N/T Not Tested, mandatory but not assessed. (See section 4.4 Test deleted)

The results contained in this section are representative of the operation of the apparatus as originally submitted.

5.1 Test Results

Part 15C	Industry Canada	Test Description	Required	Result
15.207 (a)	RSS-Gen 7.2.4	Conducted Emission Limit	Y	Pass
15.215(c)	RSS-Gen 4.6.3	20 dB Bandwidth	Y	Pass
15.249 (a)	RSS-Gen 4.8 & RSS-210 A2.9	Field Strength of Emissions	Y	Pass
15.249 (d) & 15.209 (a)	RSS-Gen 4.9 & RSS-210 A2.9	Spurious Emissions Outside of the band	Y	Pass
15.249 (b)		Fixed Point-to-Point Operation	N	
15.109 (a)	RSS-Gen 4.10 & RSS-Gen 6.1	Receiver Spurious Emissions	Y	Pass

Appendix A: Test Results

Section 15.207(a) – Power Line Conducted Emissions

15.207(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi□peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5□3□	60	50

*Decreases with the logarithm of the frequency.

Test Conditions:

Sample Number:	EX10AC	**Temperature:**	20°C
Date:	November 30, 2010	**Humidity:**	24 %
Modification State:	TX and RX mode	**Tester:**	FSCustodio
		Laboratory:	Nemko

Test Results:

See attached plots

Additional Observations:

- EUT was assessed in both transmit (TX) and receive (RX) mode.
- Test parameters are internal to the automated test software used (R&S®ES-SCAN Version 2.4) for conducted emission test.
- Red limit line is Quasi Peak limit while pink limit line is Average limit.
- ▽ represents final quasi peak measurements while ▽ represent final average measurements.
- Six sub ranges were created in order to have at least six measurements (6 QP and 6 Ave.).

Device Under Test	Exigent Sensors EX10AC
Operator Name	FSCustodio
Test Specification	FCC Class B Conducted Emissions
Comment	Line 1 Transmit Mode

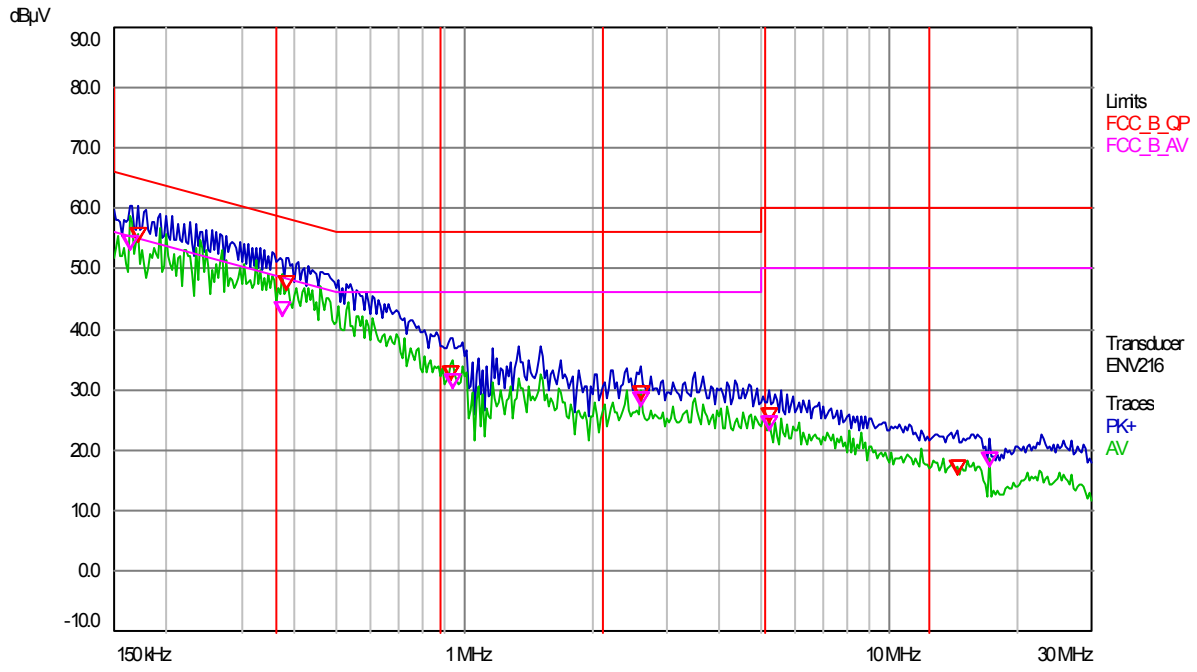
Sweep Settings (5 Ranges)

Frequencies			Analyzer Settings					
Start	**Stop**	**Sweep Points**	**Res BW**	**Sweep Time**	**Atten**	**Preamp**	**Pre-selector**	**Ref Level**
150 kHz	500 kHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
500 kHz	1 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
1 MHz	10 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
10 MHz	20 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
20 MHz	30 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV

Final Measurement

Detectors:	QP , AV	Meas Time:	1 s
Peaks:	6	Acc. Margin:	70 dB

Pre-measurement Graph



Final Measurement Results

Trace	Frequency (MHz)	Level (dBµV)	Limit (dBµV)	Delta Limit (dB)
2 AV	0.160544	53.88	55.44	-1.56
1 QP	0.2032	53.01	63.48	-10.47
2 AV	0.37155	43.95	48.47	-4.52
1 QP	0.377325	46.96	58.34	-11.38
1 QP	0.910188	32.30	56.00	-23.70
2 AV	0.951813	29.64	46.00	-16.36
1 QP	2.13175	24.14	56.00	-31.86
2 AV	2.13175	22.92	46.00	-23.08
2 AV	5.618125	17.31	50.00	-32.69
1 QP	6.389875	17.66	60.00	-42.34
1 QP	26.3275	22.61	60.00	-37.39
2 AV	26.675	20.98	50.00	-29.02

* = limit exceeded

Device Under Test	Exigent Sensors EX10AC
Operator Name	FSCustodio
Test Specification	FCC Class B Conducted Emissions
Comment	Line 2 Transmit Mode

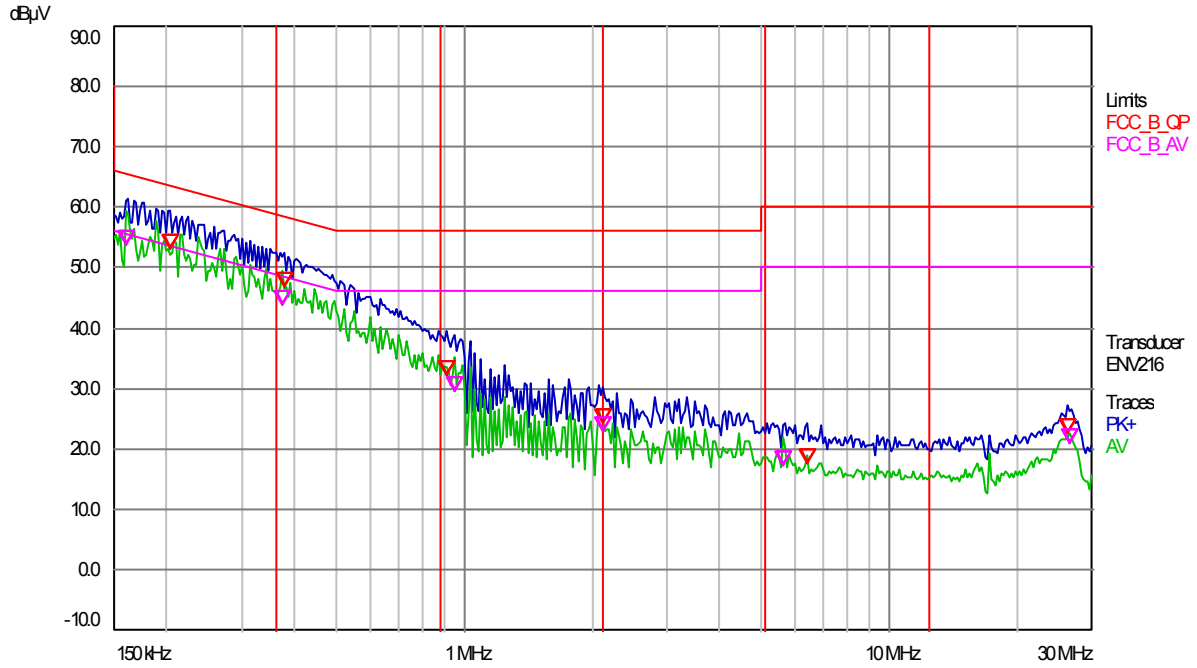
Sweep Settings (5 Ranges)

Frequencies			Analyzer Settings					
Start	**Stop**	**Sweep Points**	**Res BW**	**Sweep Time**	**Atten**	**Preamp**	**Pre-selector**	**Ref Level**
150 kHz	500 kHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
500 kHz	1 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
1 MHz	10 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
10 MHz	20 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
20 MHz	30 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV

Final Measurement

Detectors:	QP , AV	Meas Time:	1 s
Peaks:	6	Acc. Margin:	70 dB

Pre-measurement Graph



Final Measurement Results

Trace	Frequency (MHz)	Level (dBµV)	Limit (dBµV)	Delta Limit (dB)
2 AV	0.163431	53.04	55.29	-2.25
1 QP	0.170431	54.49	64.94	-10.45
2 AV	0.374481	42.21	48.40	-6.19
1 QP	0.380956	46.37	58.26	-11.89
1 QP	0.927125	31.66	56.00	-24.34
2 AV	0.937063	30.04	46.00	-15.96
1 QP	2.59525	28.36	56.00	-27.64
2 AV	2.59525	27.21	46.00	-18.79
2 AV	5.2165	23.32	50.00	-26.68
1 QP	5.248	24.39	60.00	-35.61
1 QP	14.46125	15.94	60.00	-44.06
2 AV	17.2225	17.30	50.00	-32.70

* = limit exceeded

Device Under Test	Exigent Sensors EX10AC
Operator Name	FSCustodio
Test Specification	FCC Class B Conducted Emissions
Comment	Line 1 Receive Mode

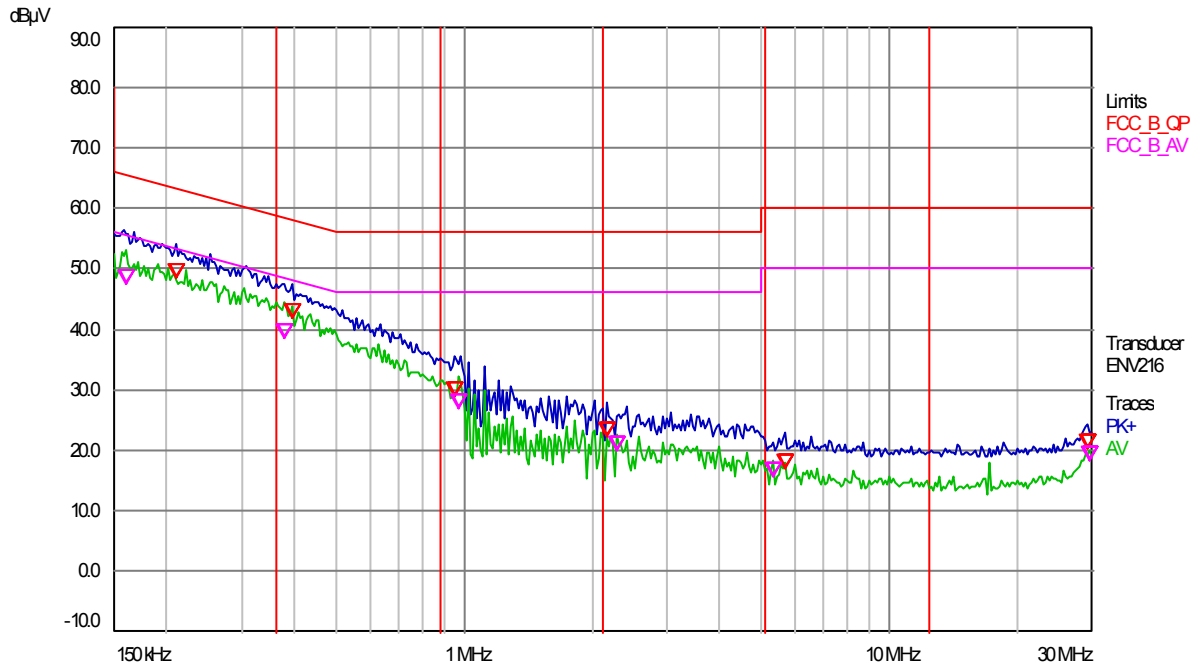
Sweep Settings (5 Ranges)

Frequencies			Analyzer Settings					
Start	**Stop**	**Sweep Points**	**Res BW**	**Sweep Time**	**Atten**	**Preamp**	**Pre-selector**	**Ref Level**
150 kHz	500 kHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
500 kHz	1 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
1 MHz	10 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
10 MHz	20 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
20 MHz	30 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV

Final Measurement

Detectors:	QP , AV	Meas Time:	1 s
Peaks:	6	Acc. Margin:	70 dB

Pre-measurement Graph



Final Measurement Results

Trace	Frequency (MHz)	Level (dBµV)	Limit (dBµV)	Delta Limit (dB)
2 AV	0.160106	47.55	55.46	-7.91
1 QP	0.210856	48.57	63.17	-14.60
2 AV	0.375575	38.42	48.38	-9.96
1 QP	0.39605	41.74	57.94	-16.20
1 QP	0.952125	29.00	56.00	-27.00
2 AV	0.966438	26.73	46.00	-19.27
1 QP	2.15875	22.19	56.00	-33.81
2 AV	2.278	19.81	46.00	-26.19
2 AV	5.343625	15.54	50.00	-34.46
1 QP	5.672125	16.84	60.00	-43.16
1 QP	29.4275	20.38	60.00	-39.62
2 AV	29.6725	18.24	50.00	-31.76

* = limit exceeded

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Device Under Test	Exigent Sensors EX10AC
Operator Name	FSCustodio
Test Specification	FCC Class B Conducted Emissions
Comment	Line 2 Receive Mode

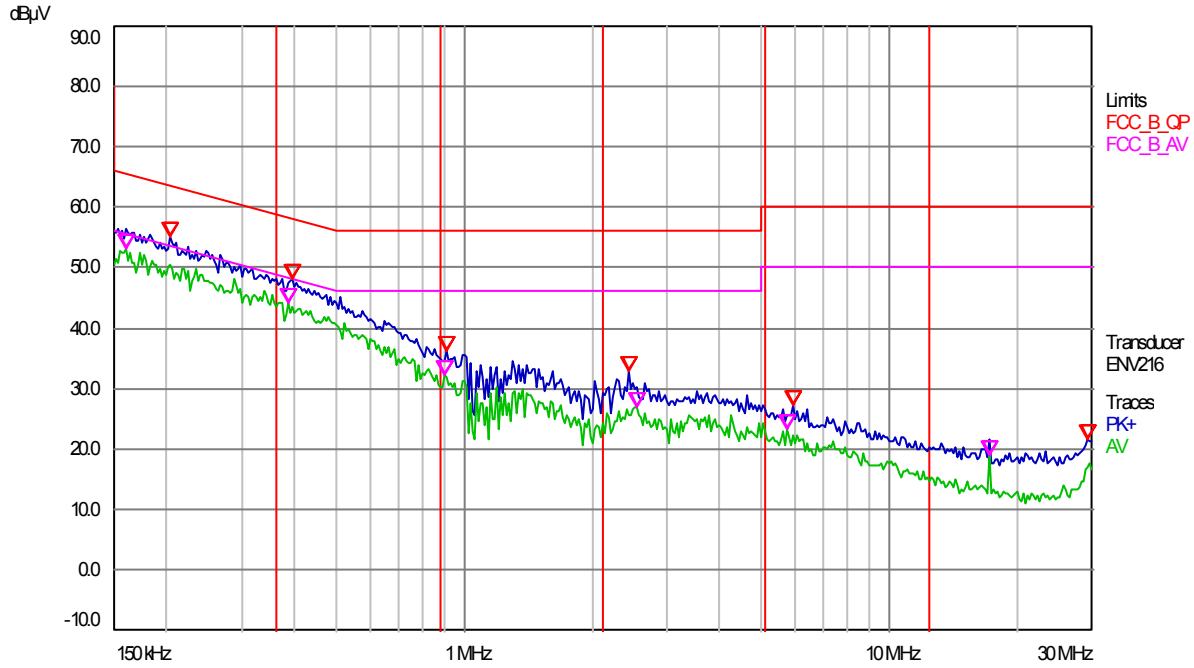
Sweep Settings (5 Ranges)

Frequencies			Analyzer Settings					
Start	**Stop**	**Sweep Points**	**Res BW**	**Sweep Time**	**Atten**	**Preamp**	**Pre-selector**	**Ref Level**
150 kHz	500 kHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
500 kHz	1 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
1 MHz	10 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
10 MHz	20 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV
20 MHz	30 MHz	8001	9 kHz (6dB)	5 s	10 dB	Off	Off	60 dBµV

Final Measurement

Detectors:	QP , AV	Meas Time:	1 s
Peaks:	6	Acc. Margin:	70 dB

Pre-measurement Graph



Final Measurement Results

Trace	Frequency (MHz)	Level (dBµV)	Limit (dBµV)	Delta Limit (dB)
2 AV	0.159581	53.22	55.49	-2.27
1 PK+	0.202281	55.17	63.52	-8.35
2 AV	0.385156	44.22	48.17	-3.95
1 PK+	0.395656	48.06	57.94	-9.88
2 AV	0.89525	32.12	46.00	-13.88
1 PK+	0.90525	36.30	56.00	-19.70
1 PK+	2.43775	32.94	56.00	-23.06
2 AV	2.557	26.79	46.00	-19.21
2 AV	5.77675	23.28	50.00	-26.72
1 PK+	5.9545	27.11	60.00	-32.89
2 AV	17.21375	18.97	50.00	-31.03
1 PK+	29.24	21.59	60.00	-38.41

* = limit exceeded

Section 15.215(c) – Occupied Bandwidth

(c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

RSS-Gen Section 4.6.1 – Occupied Bandwidth

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.

The transmitter shall be operated at its maximum carrier power measured under normal test conditions.

The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual.

The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded.

The span between the two recorded frequencies is the occupied bandwidth.

Test Conditions:

Sample Number:	EX10AC	**Temperature:**	22°C
Date:	November 10, 2010	**Humidity:**	40 %
Modification State:	Transmit Mode	**Tester:**	FSCustodio
		Laboratory:	Nemko

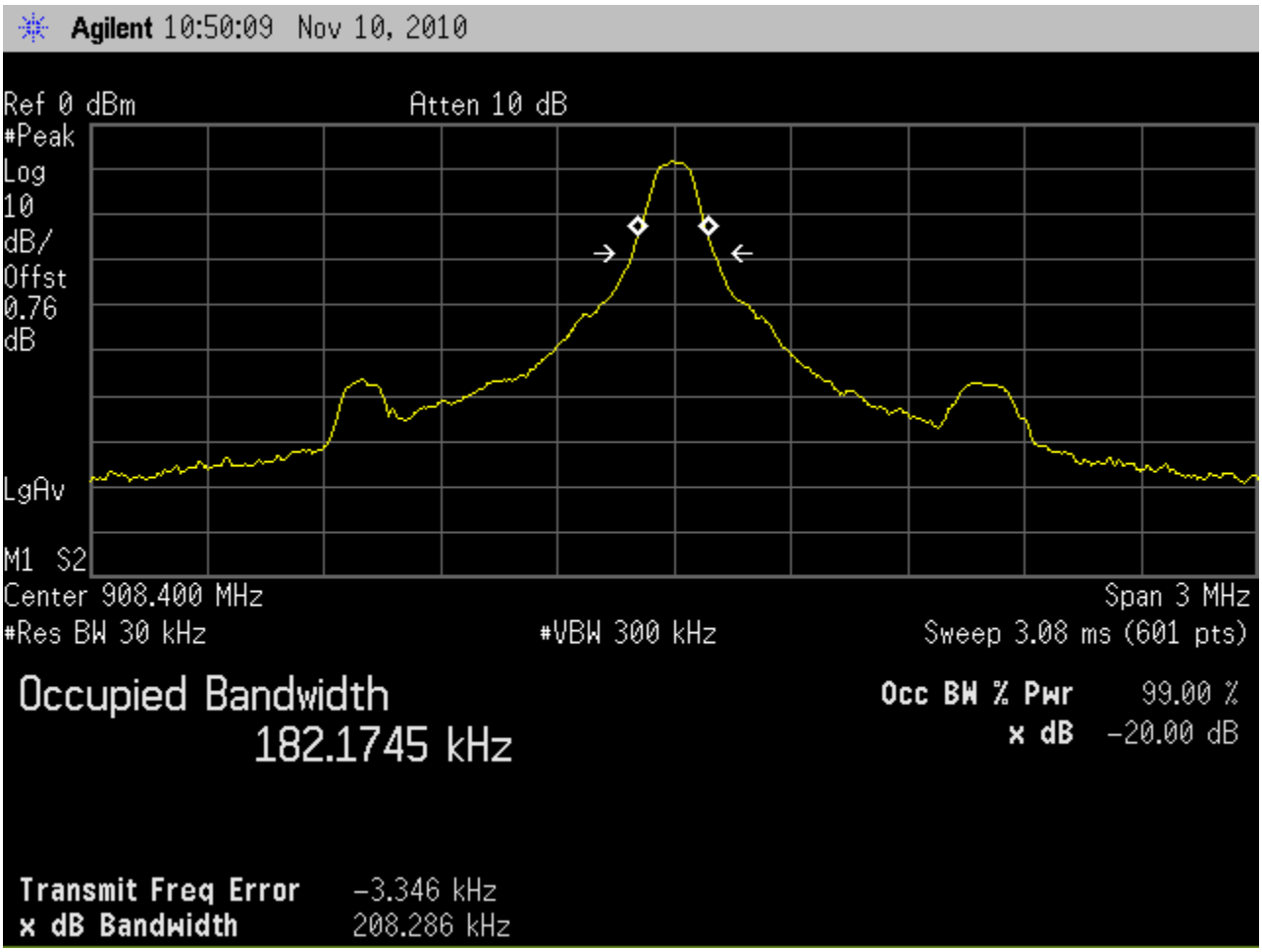
Test Results:

See attached plots

Additional Observations:

- Span is wide enough to capture the channel transmission.
- RBW is 1% of the span.
- VBW is 3X RBW
- Sweep is auto
- Detector is Peak

- Trace is Max Hold
- Measurement was made using the built-in OBW measuring feature of the spectrum analyzer with power BW of 99% @ -20dB.
- Observed maximum occupied BW is 182.17kHz



Section 15.249(a) – Field Strength of Emissions

(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

RSS-210 A2.9 – Field Strength of Emissions

This section provides standards for low-power devices that can be used for any application provided the following conditions are met:
(a) The field strengths measured at 3 metres shall not exceed the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (millivolts/meter)
902–928 MHz	50(Note 1)	0.5
2400–2483.5 MHz	50(Note 1)	0.5
5725–5875 MHz	50(Note 1)	0.5

Note 1: Equivalent to 0.75 mW e.i.r.p.

(b) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to Table 2 limits, whichever is the less stringent.

Section 4.4 of RSS-Gen (Pulsed Operation) does not apply to CISPR measurement for the band 902-928 MHz.

Test Conditions:

Sample Number:	EX10AC	**Temperature:**	18°C
Date:	November 30, 2010	**Humidity:**	13 %
Modification State:	Transmit Mode	**Tester:**	FSCustodio
		Laboratory:	SOATS

Test Results:

See attached plots.

Additional Observations:

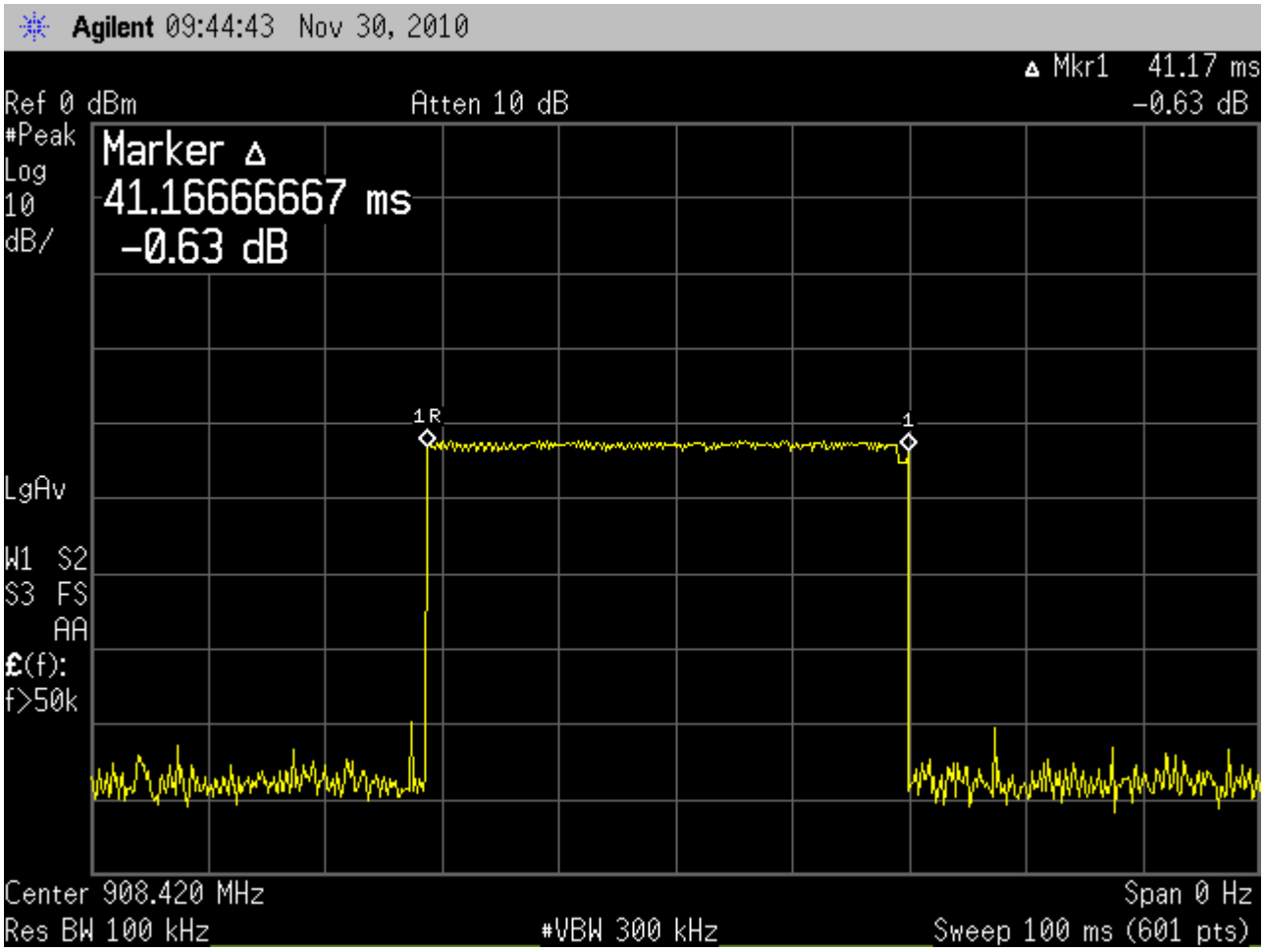
- Detector used below 1GHz is QP and Peak above 1GHz.

- EUT verified on both horizontal and vertical configuration (actual installation configurations). Worst case configuration reported (vertical).
- Average data above 1GHz are calculated from Peak measurements and Duty Cycle Correction Factor (DCCF).
- Spectrum was investigated up to 10GHz
- There were no emissions found other than the fundamental

Sample Computation (Radiated Emissions Data Sheet):

Correction factor @ 908.42MHz	= 27.6 = Antenna factor + Cable loss – Preamp gain = 23.4 + 4.2 – 0
Corrected reading	= Max. reading + Correction factor = 63.46 + 27.6 = 91.06 dBµV/m

Duty Cycle Correction Factor Calculations



One data packet (41.167ms long)

Duty Cycle = 41.167ms/100 ms
= 41.167%

DCCF = 20 log (0.41167)
= -7.7

NEMKO USA, Inc.

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Radiated Emissions Data

Job # :	67067	Date :	11/30/2010	Page	1 of 1
NEX #:	160862	Time :	11:45AM		
		Staff :	FSC		

Client Name :	Exigent Sensors	EUT Voltage :	120VAC
EUT Name :	Wireless Smoke Alarm	EUT Frequency :	60HZ
EUT Model # :	EX10AC	Phase:	1
EUT Serial # :	N/A	NOATS	
EUT Config. :	Transmit	SOATS	X
		Distance < 1000 MHz:	3 m
		Distance > 1000 MHz:	3 m

Specification :	CFR47 Part 15, Subpart B, Class B		
Loop Ant. #:	NA		
Bicon Ant.#:	114_3m	Temp. (°C) :	18
Log Ant.#:	110_3m	Humidity (%) :	13
DRG Ant. #	877	Spec Analyzer #:	911
Cable LF#:	SOATS	Analyzer Display #:	NA
Cable HF#:	SOATS	Quasi-Peak Detector #:	911
Preamp LF#:	827	DCCF:	7.7
Preamp HF#	317		

Quasi-Peak	RBW: 120 kHz
	Video Bandwidth 300 kHz
Peak	RBW: 1 MHz
	Video Bandwidth 3 MHz
Average	= Peak-DCCF

Measurements below 1 GHz are Quasi-Peak values, unless otherwise stated.
Measurements above 1 GHz are Average values, unless otherwise stated.

Meas. Freq. (MHz)	Meter Reading **Vertical**	Meter Reading **Horizontal**	Det.	EUT Side F/L/R/B	Ant. Height m	Max. Reading (dBµV)	Corrected Reading (dBµV/m)	Spec. limit (dBµV/m)	CR/SL Diff. (dB)	Pass Fail	Comment
908.4	59.8	63.5	QP	B	1.0	63.5	91.0	94.0	-3.0	Pass	
902.0	47.2	46.7	QP	B	1.0	47.2	40.4	46.0	-5.6	Pass	low band edge
928.0	43.1	40.0	QP	B	1.0	43.1	36.2	46.0	-9.8	Pass	high band edge
1816.8	47.3	48.5	P	B	1.0	48.5	51.4	74.0	-22.6	Pass	Noise Floor
1816.8	39.6	40.8	A	B	1.0	40.8	43.7	54.0	-10.3	Pass	Noise Floor
2725.3	49.5	47.3	P	B	1.0	49.5	57.0	74.0	-17.0	Pass	Noise Floor
2725.3	41.8	39.6	A	B	1.0	41.8	49.3	54.0	-4.7	Pass	Noise Floor

Section 15.249 (d) – Spurious Emissions Outside of the band

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

RSS-210 A2.9 – Spurious Emissions Outside of the band

(b) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general field strength limits listed in RSS-Gen, whichever is less stringent.

Test Conditions:

Sample Number:	EX10AC	**Temperature:**	18°C
Date:	November 30, 2010	**Humidity:**	13 %
Modification State:	Transmit Mode	**Tester:**	FSCustodio
		Laboratory:	SOATS

Test Results:

See attached plots.

Additional Observations:

- Detector used below 1GHz is QP and Peak above 1GHz.
- EUT verified on both horizontal and vertical configuration (actual installation configurations). Results are identical.
- Spectrum was investigated up to 10GHz
- There were no emissions found above 200MHz other than the fundamental.

Sample Computation (Radiated Emissions Data Sheet):

Correction factor @ 31.8MHz = -20.7
= Antenna factor + Cable loss – Preamp gain
= 13.3 + 0.7 – 34.7

Corrected reading = Max. reading + Correction factor
= 55.9 – 20.7
= 35.2 dBµV/m

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Radiated Emissions Data

Job # :	67067	Date :	11/30/2010	Page	1 of 1
NEX#:	160862	Time :	10:30AM		
		Staff :	FSC		
Client Name :	Exigent Sensors			EUT Voltage :	120VAC
EUT Name :	Wireless Smoke Alarm			EUT Frequency :	60HZ
EUT Model # :	EX10AC			Phase:	1
EUT Serial # :	N/A			NOATS	
EUT Config. :	Transmit			SOATS	X
				Distance < 1000 MHz:	3 m
				Distance > 1000 MHz:	3 m
Specification :	CFR47 Part 15, Subpart B, Class B				
Loop Ant. #:	NA				
Bicon Ant.#:	114_3m	Temp. (°C) :	18		
Log Ant.#:	110_3m	Humidity (%) :	13		
DRG Ant. #	NA	Spec Analyzer #:	911		
Cable LF#:	SOATS	Analyzer Display #:	NA		
Cable HF#:	NA	Quasi-Peak Detector #:	911		
Preamp LF#:	827	Preselector #:	NA		
Preamp HF#	NA				

Quasi-Peak	RBW:	120 kHz
	Video Bandwidth	300 kHz
Peak	RBW:	1 MHz
	Video Bandwidth	3 MHz
Average	RBW:	1 MHz
	Video Bandwidth	10 Hz

Measurements below 1 GHz are Quasi-Peak values, unless otherwise stated.
Measurements above 1 GHz are Average values, unless otherwise stated.

Meas. Freq. (MHz)	Meter Reading **Vertical**	Meter Reading **Horizontal**	Det.	EUT Side F/L/R/B	Ant. Height m	Max. Reading (dBµV)	Corrected Reading (dBµV/m)	Spec. limit (dBµV/m)	CR/SL Diff. (dB)	Pass Fail	Comment
31.8	55.9	50.4	Q		1.0	55.9	35.2	40.0	-4.8	Pass	Ambient Noise
41.2	55.7	50.7	Q		1.0	55.7	33.3	40.0	-6.7	Pass	Ambient Noise
58.1	52.4	52.9	Q		1.0	52.9	31.0	40.0	-9.0	Pass	Ambient Noise
85.4	54.0	53.1	Q		1.0	54.0	27.9	40.0	-12.1	Pass	Ambient Noise
120.9	51.1	55.7	Q		1.0	55.7	38.5	43.5	-5.1	Pass	Ambient Noise
199.8	48.8	44.3	Q		1.0	48.8	32.2	43.5	-11.4	Pass	Ambient Noise

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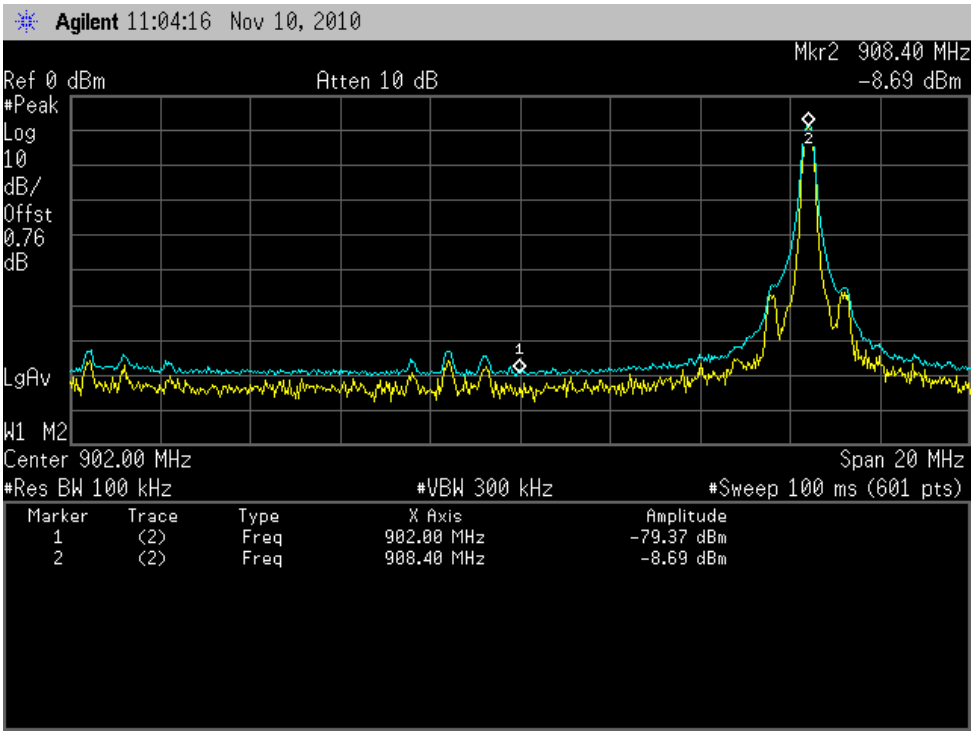
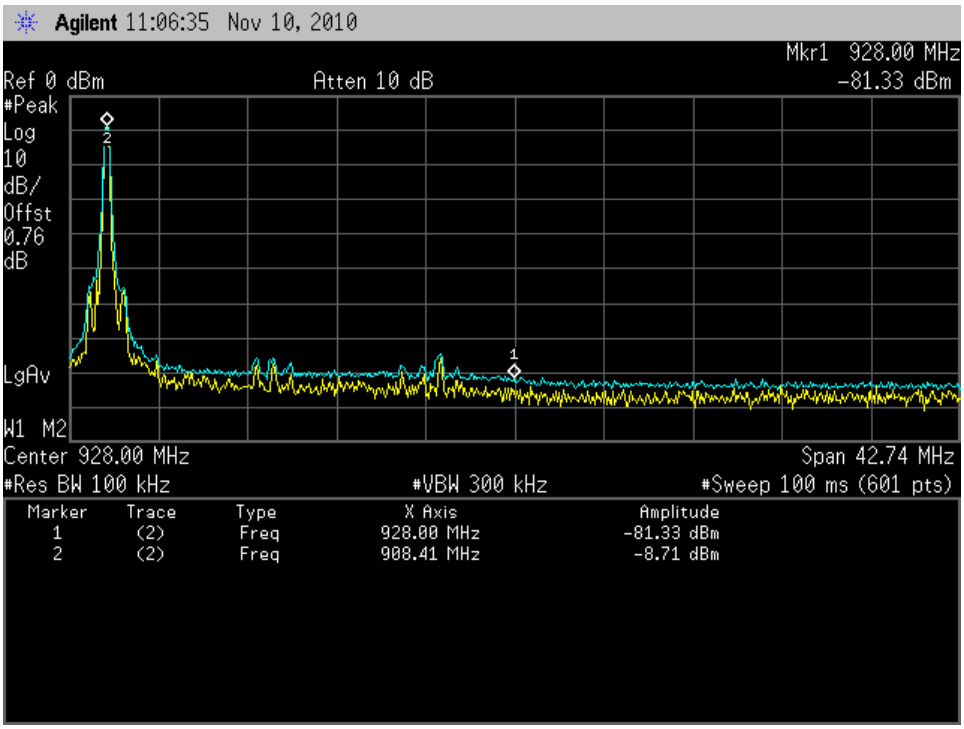
Conducted Band Edge measurements:





6.1 (RSS-Gen) – Receiver Spurious Emission Limits

All spurious emissions shall comply with the limits of Table 2 (see brlow).

Spurious Frequency (MHz)	Field Strength (microvolt/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960	500

Test Conditions:

Sample Number:	EX10AC	**Temperature:**	18°C
Date:	November 30, 2010	**Humidity:**	13 %
Modification State:	Receive Mode	**Tester:**	FSCustodio
		Laboratory:	SOATS

Test Results:

See attached plots.

Additional Observations:

- Detector used below 1GHz is QP and Peak above 1GHz.
- EUT verified on both horizontal and vertical configuration (actual installation configurations). Results are identical; all verified emissions were ambient noise out on the OATS.
- Spectrum was investigated up to 5GHz.
- There were no emissions found above 200MHz other than the fundamental.

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Radiated Emissions Data

Job # :	67067	Date :	11/30/2010	Page	1 of 1
NEX#:	160862	Time :	11:00AM		
		Staff :	FSC		

Client Name :	Exigent Sensors	EUT Voltage :	120VAC
EUT Name :	Wireless Smoke Alarm	EUT Frequency :	60HZ
EUT Model # :	EX10AC	Phase:	1
EUT Serial # :	N/A	NOATS	
EUT Config. :	Receive	SOATS	X
		Distance < 1000 MHz:	3 m
		Distance > 1000 MHz:	3 m

Specification :	CFR47 Part 15, Subpart B, Class B		
Loop Ant. #:	NA		
Bicon Ant.#:	114_3m	Temp. (°C) :	18
Log Ant.#:	110_3m	Humidity (%) :	13
DRG Ant. #	NA	Spec Analyzer #:	911
Cable LF#:	SOATS	Analyzer Display #:	NA
Cable HF#:	NA	Quasi-Peak Detector #:	911
Preamp LF#:	827	Preselector #:	NA
Preamp HF#	NA		

Quasi-Peak	RBW:	120 kHz
	Video Bandwidth	300 kHz
Peak	RBW:	1 MHz
	Video Bandwidth	3 MHz
Average	RBW:	1 MHz
	Video Bandwidth	10 Hz

Measurements below 1 GHz are Quasi-Peak values, unless otherwise stated.
Measurements above 1 GHz are Average values, unless otherwise stated.

Meas. Freq. (MHz)	Meter Reading **Vertical**	Meter Reading **Horizontal**	Det.	EUT Side F/L/R/B	Ant. Height m	Max. Reading (dBµV)	Corrected Reading (dBµV/m)	Spec. limit (dBµV/m)	CR/SL Diff. (dB)	Pass Fail	Comment
30.2	52.1	51.5	Q		1.0	52.1	31.8	40.0	-8.2	Pass	Ambient Noise
45.9	56.6	55.8	Q		1.0	56.6	34.2	40.0	-5.8	Pass	Ambient Noise
57.7	51.7	51.1	Q		1.0	51.7	29.8	40.0	-10.2	Pass	Ambient Noise
87.8	54.4	61.5	Q		1.0	61.5	36.0	40.0	-4.0	Pass	Ambient Noise
128.0	58.3	58.8	Q		1.0	58.8	37.5	43.5	-6.0	Pass	Ambient Noise
186.4	43.1	43.3	Q		1.0	43.3	27.2	43.5	-16.3	Pass	Ambient Noise

Appendix C: Block Diagram of Test Setups

Test Site For Radiated Emissions