FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS 210

CERTIFICATION TEST REPORT

FOR

DOOR SENSOR

MODEL NUMBER: 13N80000

FCC ID: SO7-13N80000
IC: 11009A-13N80000

REPORT NUMBER: 16U23095-E1V4

ISSUE DATE: 7/14/16

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	06/23/16	Initial Issue	C.S.OOI
V2	07/13/16	Added KDB 937606 Correlation Justification on Page 23	C.S.OOI
V3	07/13/16	Revised Information on Page 23	C.S.OOI
V4	07/14/16	Removed Term “ CISPR” from Table on Page 27	C.S.OOI

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: PELLA CORPORATION
102 MAIN ST
PELLA, IA 50219 USA

EUT DESCRIPTION: DOOR SENSOR

MODEL: 13N80000

Serial Number: 2321953, 2321594

DATE TESTED: MAY 31 - JUNE 23, 2016

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 15 SUBPART C	Pass
INDUSTRY CANADA RSS-210 Issue 8, Annex 1	Pass
INDUSTRY CANADA RSS-GEN Issue 4	Pass

UL Verification Services Inc tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 4, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A	☐ Chamber D
☒ Chamber B	☐ Chamber E
☐ Chamber C	☐ Chamber F

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.htm.

Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

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4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 9KHz to 30 MHz	2.14 dB
Radiated Disturbance, 30 to 1000 MHz	4.98 dB
Radiated Disturbance,1000 to 6000 MHz	3.86 dB
Radiated Disturbance,6000 to 18000 MHz	4.23 dB
Radiated Disturbance,18000 to 26000 MHz	5.30 dB
Radiated Disturbance,26000 to 40000 MHz	5.23 dB

Uncertainty figures are valid to a confidence level of 95%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a wireless sensor for installation on a door as part of a security system or home automation system. The sensor wirelessly transmits the open or closed status of the door.

5.2. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an internal, loop antenna, with a maximum gain of -15 dBi.

5.3. SOFTWARE AND FIRMWARE

The typical factory firmware installed in the EUT during testing was ESW1112-01-A01.

The firmware installed in the EUT to allow continuous transmit during testing was B03-3 1112_v1.00.

5.4. WORST-CASE CONFIGURATION AND MODE

The EUT was investigated in each of its three orthogonal axes. All radiated testing was performed in the worse-case axis, which was found to be the “Z-axis”. See photos for details.

5.5. MODIFICATIONS

No modifications were made during testing.

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

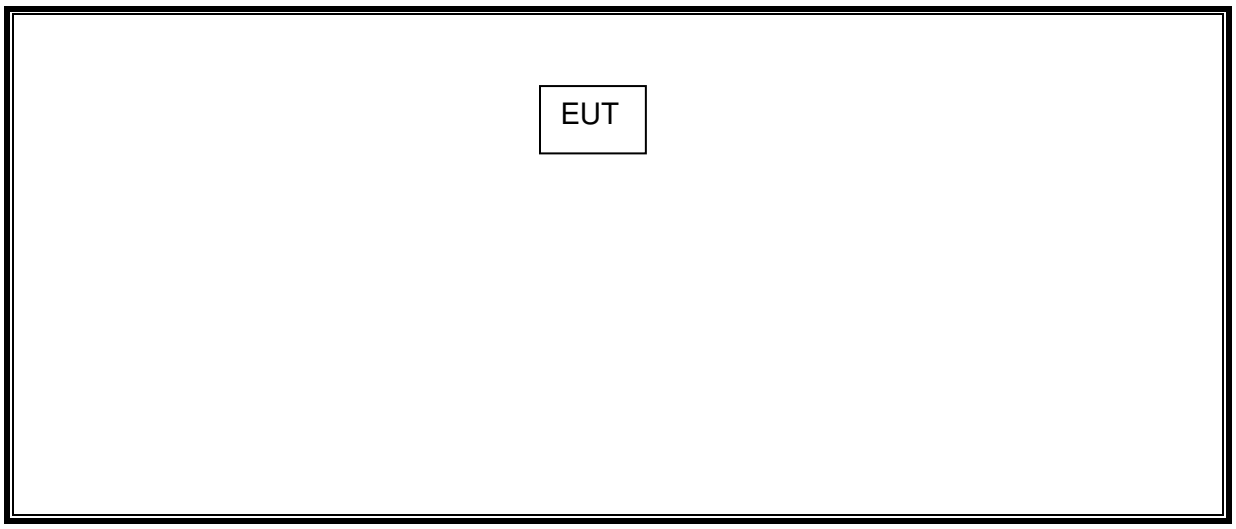
NONE

I/O CABLES

NONE

TEST SETUP

SETUP DIAGRAM FOR TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Antenna, Biconolog, 30MHz-2 GHz	Sunol Sciences	JB1	T130	09/01/16
Antenna, Horn, 18GHz	ETS Lindgren	3117	T345	03/07/17
Preamplifier, 1300 MHz	Keysight	8447D	T64	08/14/16
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	10/22/16
PXA Signal Analyzer, 44 GHz	Keysight	N9030A	T907	01/06/17
Antenna, Loop, 30 MHz	ETS Lindgren	6502	T35	03/24/17
Dipole Antenna 400MHz-1000MHz	ETS Lindgren	N/A	T416	04/18/17

Test Software List			
Description	**Manufacturer**	**Model**	**Version**
Radiated Software	UL	UL EMC	Ver 9.5, Apr 26, 2016
Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015
Antenna Port Software	UL	UL RF	Ver 4.2, Mar 7, 2016

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7. ANTENNA PORT TEST RESULTS

7.1. 20 dB AND 99% BW

LIMITS

FCC §15.231 (c)
The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

IC A1.1.3
For the purpose of Section A1.1, the 99% Bandwidth shall be no wider than 0.25% of the center frequency for devices operating between 70-900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency.

TEST PROCEDURE

ANSI C63.10

The transmitter output is connected to the spectrum analyzer.

20dB Bandwidth: The RBW is set to 1% to 5% of OBW. The VBW is set to 3 times the RBW. The sweep time is coupled. Bandwidth is determined at the points 20 dB down from the modulated carrier.

99% Bandwidth: The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

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RESULTS

No non-compliance noted:

20dB Bandwidth

Frequency (MHz)	20dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)
433.92	97	1084.8	-987.8

99% Bandwidth

Frequency (MHz)	99% Bandwidth (kHz)	Limit (kHz)	Margin (kHz)
433.92	1010.4	1084.8	-74.4

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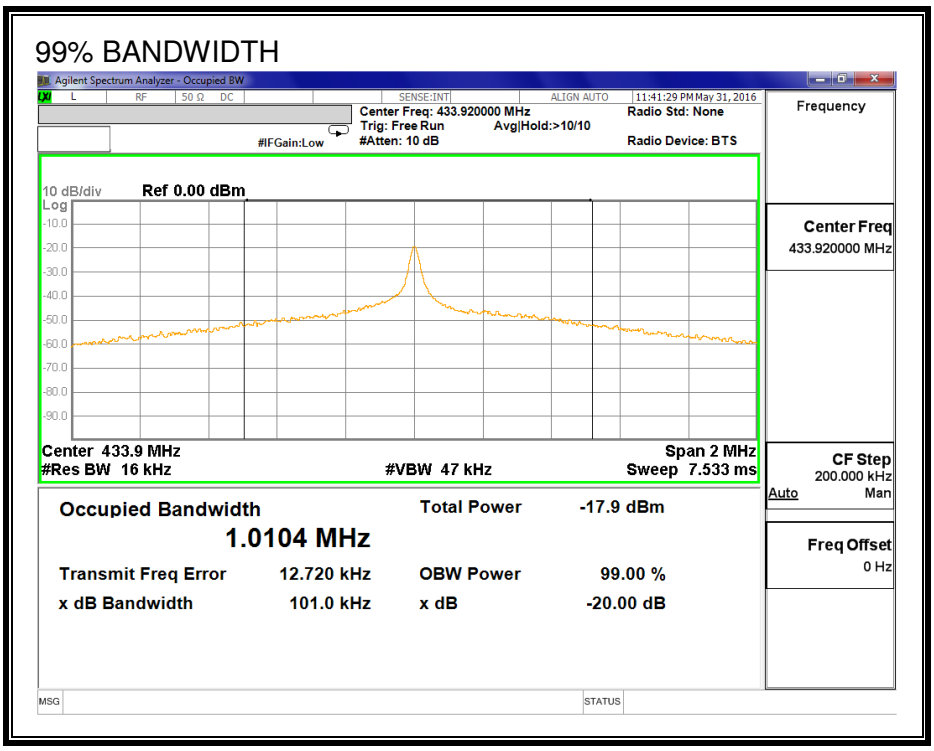
20dB BANDWIDTH

99% BANDWIDTH



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7.2. DUTY CYCLE

LIMITS

FCC §15.35 (c)
The measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value. The exact method of calculating the average field strength shall be submitted with any application for certification or shall be retained in the measurement data file for equipment subject to notification or verification.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer or radiated field strength. The RBW is set to 1MHz and the VBW is set to 1MHz. The sweep time is coupled and the span is set to 0 Hz. The number of pulses is measured and calculated in a 100 ms scan.

CALCULATION

Average Reading = Peak Reading (dBuV/m) + 20log (Duty Cycle), Where Duty Cycle is
(# of long pulses * long pulse width) + (# of short pulses * short pulse width) / 100 or T

RESULTS

No non-compliance noted:

One Period (ms)	Long Pulse Width (ms)	# of Long Pulses	Short Width (ms)	# of Short Pulses	Duty Cycle	20*Log Duty Cycle (dB)
100	0.250	15	0.125	50	0.100	-20.00

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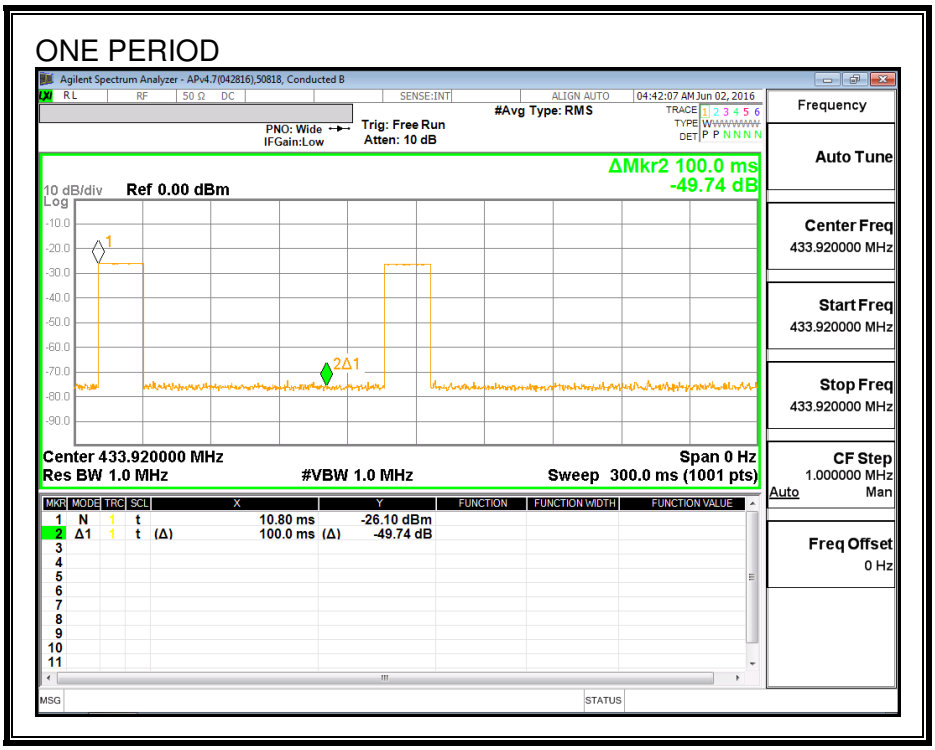
ONE PERIOD



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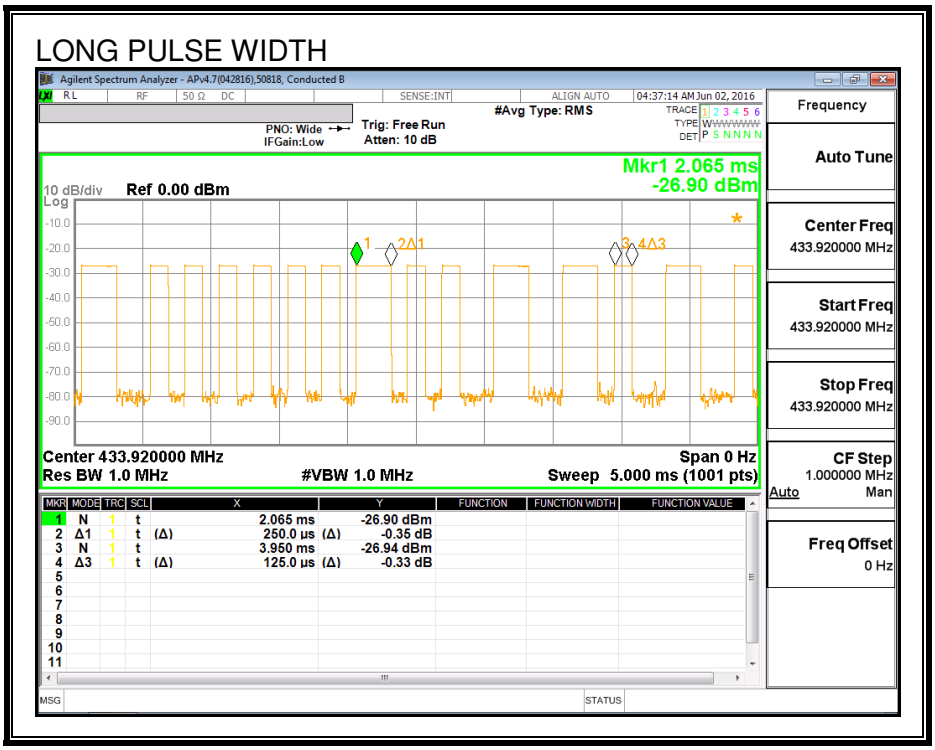
LONG PULSE WIDTH



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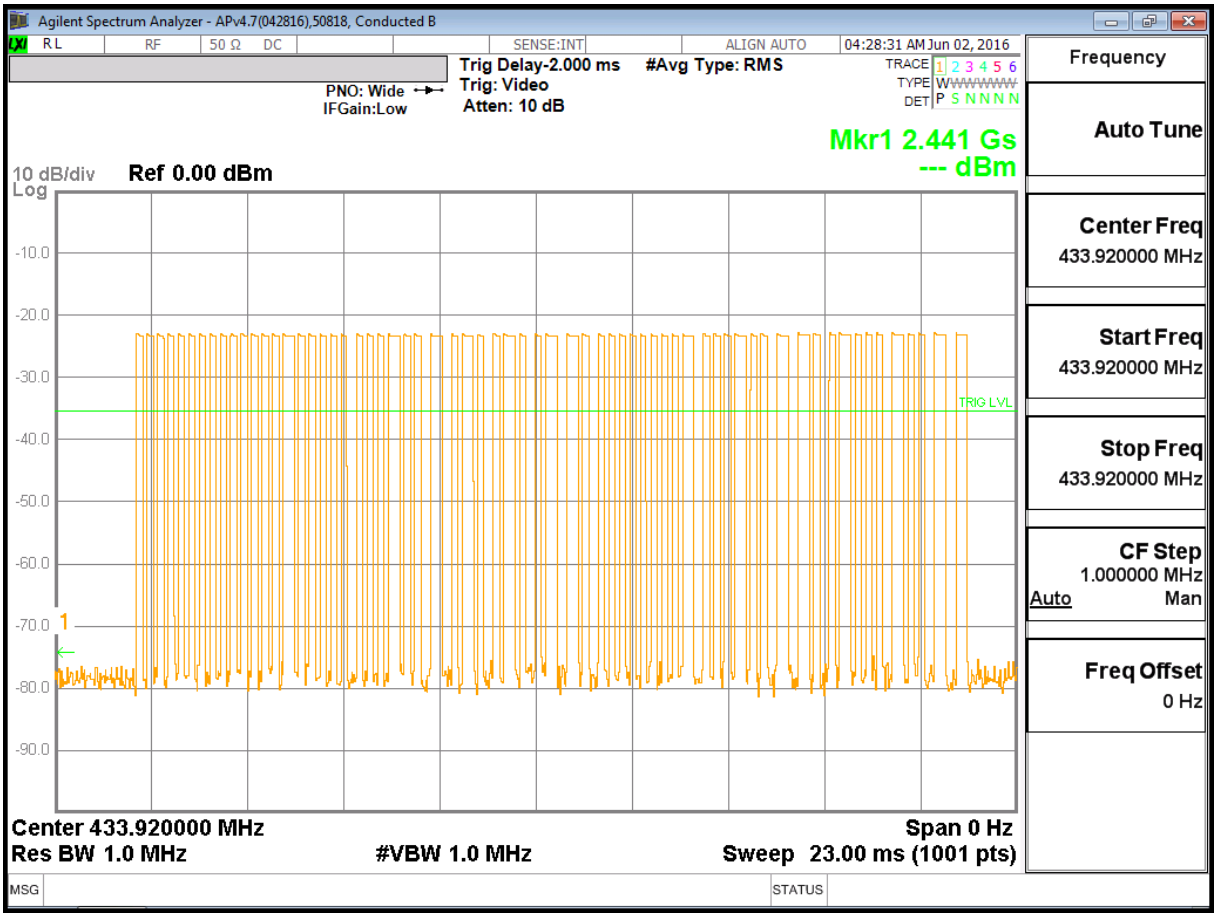
NUMBER OF LONG PULSES

NUMBER OF LONG PULSES



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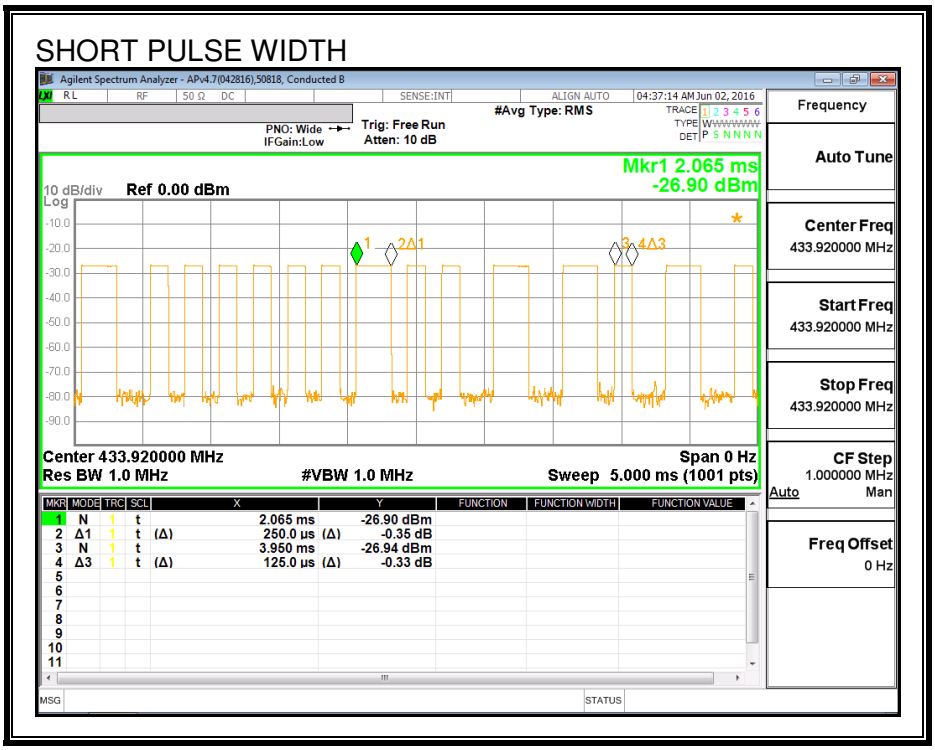
SHORT PULSE WIDTH



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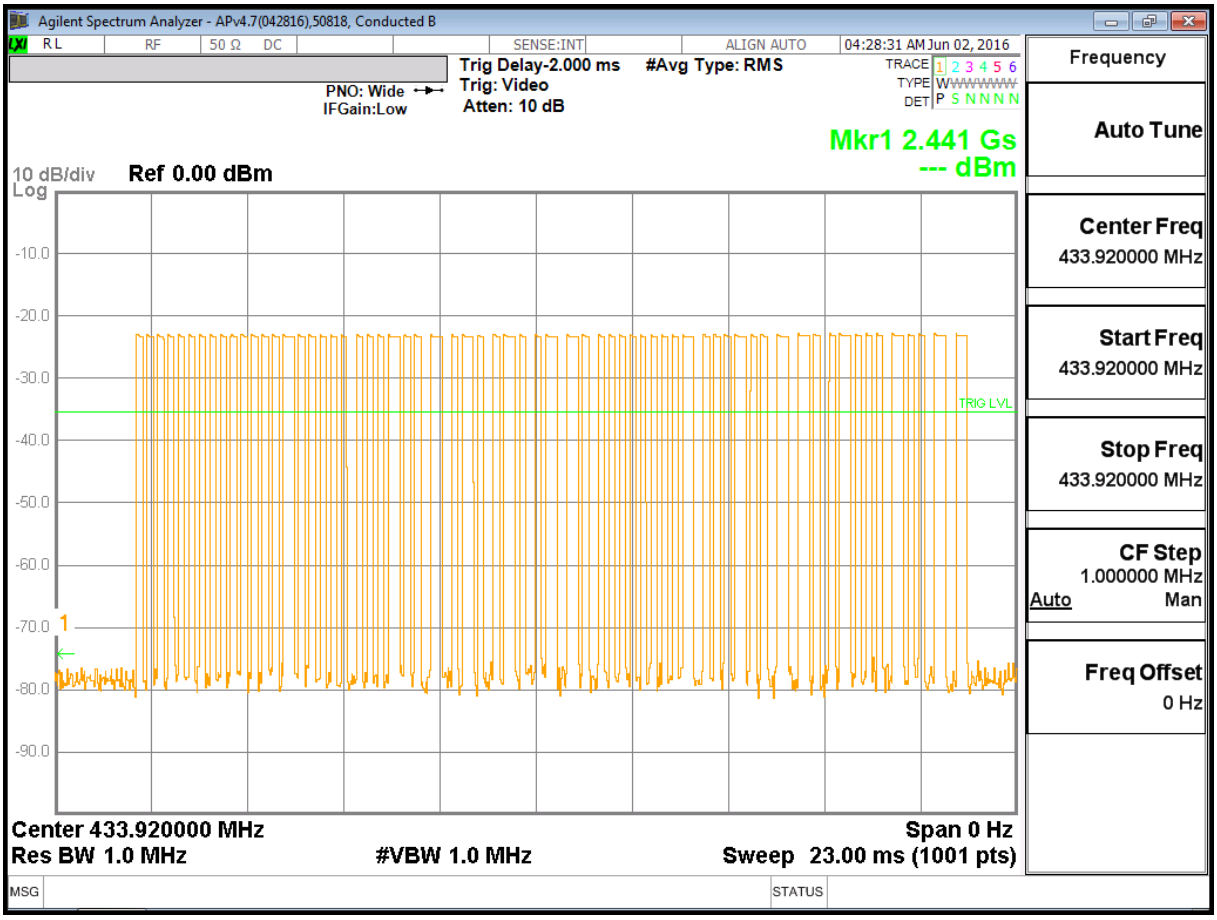
NUMBER OF SHORT PULSES

NUMBER OF SHORT PULSES



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7.3. SUPERVISION TRANSMISSIONS

LIMITS

FCC §15.35 (a) (3)

Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour

Results

1. The periodic supervisory signal has the same bit period and duty cycle characteristics as the switch sensor signal.

2. According to manufacturer technical description, the device transmits brief supervisory signal at approximately 70 minutes intervals.

3. One pulse stream is 0.25ms*15 + 0.125ms* 50 = 10 ms. Base on section 7.4 test plot, one transition contain 8 pulse streams which is 10 ms * 8 = 80 ms

4. According to manufacturer technical description, the total amount of transmitter on time for supervisory signal does not exceed 2 seconds per hour.

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7.4. TRANSMISSION TIME

LIMITS

FCC §15.231 (a) (2)

IC A1.1.1 (b)

A transmitter activated automatically shall cease transmission within 5 seconds after activation.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer or radiated field strength. The RBW is set to 1MHz and the VBW is set to 1MHz. The sweep time is set to 10 seconds and the span is set to 0 Hz.

RESULTS

No non-compliance noted:

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8. RADIATED EMISSION TEST RESULTS

8.1. TX RADIATED SPURIOUS EMISSION

LIMITS

FCC §15.231 (b)
IC A1.1.2
In addition to the provisions of § 15.205, the field strength of emissions from Intentional radiators operated under this section shall not exceed the following:

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66-40.70	2,250	225
70-130	1,250	125
130-174	[1]1,250 to 3,750	[1]125 to 375
174-260	3,750	375
260-470	[1]3,750 to 12,500	[1]375 to 1,250
Above 470	12,500	1,250

[1]Linear interpolation

§15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	([2])
13.36 – 13.41	322 - 335.4		

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1 Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
2 Above 38.6

§15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

§15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

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TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and apply DCCF for average measurements.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

RESULTS

No non-compliance noted:

KDB 937606 OATS and Chamber Correlation Justification

- Device is a small wireless sensor.

- Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

- OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

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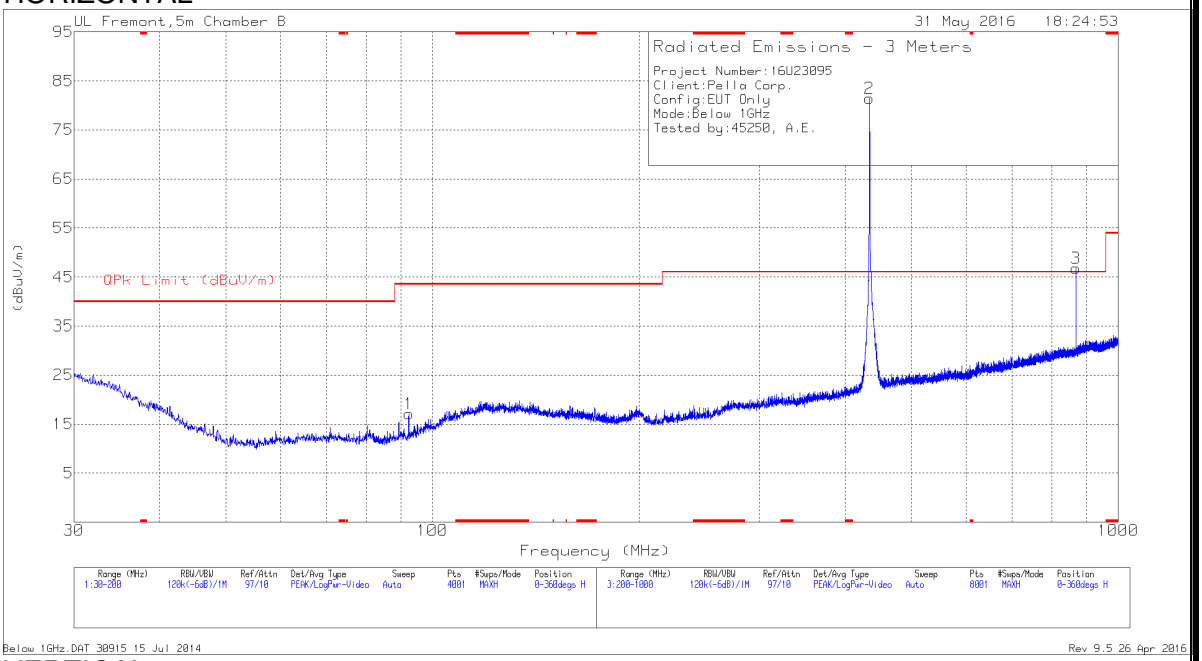
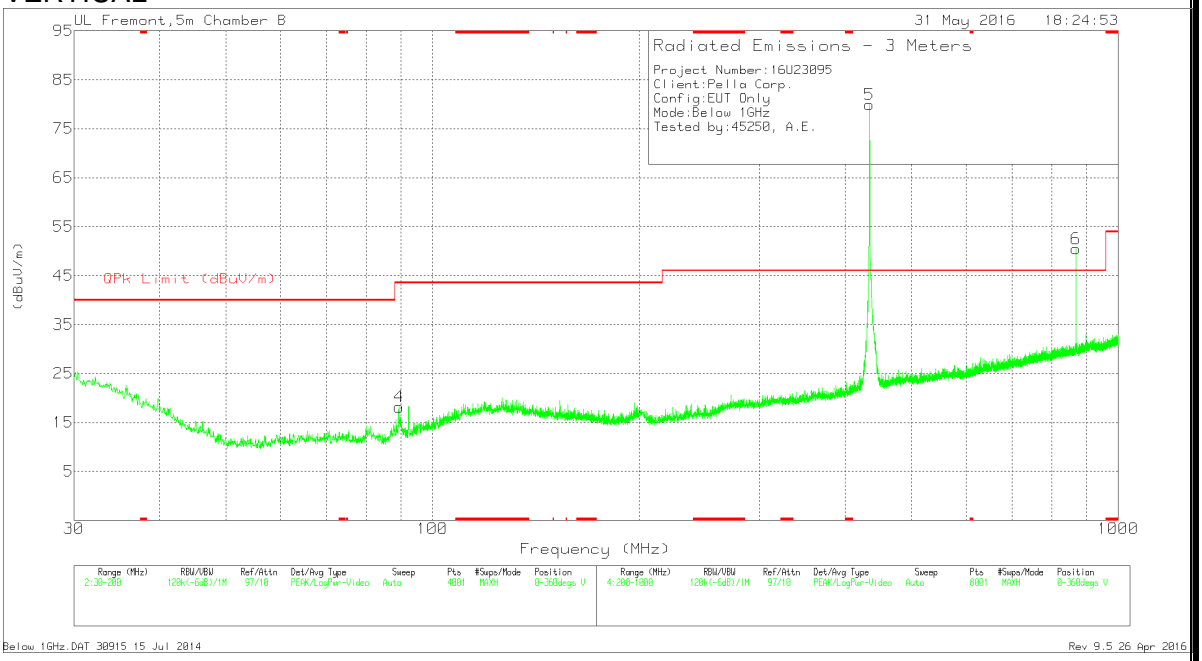
FUNDAMENTAL, HARMONICS AND TX SPURIOUS EMISSION (30 – 1000 MHz)

HORIZONTAL



VERTICAL



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BELOW 1GHZ RADIATED EMISSIONS

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	89.2875	34.78	Pk	11.6	-28.2	18.18	43.52	-25.34	0-360	100	V
1	92.3475	33.04	Pk	12.2	-28.2	17.04	43.52	-26.48	0-360	100	H
2	433.9	87.15	Pk	20.6	-26.3	81.45			0-360	100	H
5	433.9	85.58	Pk	20.6	-26.3	79.88			0-360	300	V
3	867.8	45.05	Pk	25.8	-24.1	46.75			0-360	100	H
6	867.8	48.8	Pk	25.8	-24.1	50.5			0-360	200	V

FUNDAMENTAL AND HARMONICS SPURIOUS EMISSIONS

Frequency (MHz)	Meter Reading (dBuV)	Det	AF T130 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	PK Limit (dBuV/m)	AVG Limit (dBuV/m)	PK Margin (dB)	AVG Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
433.9225	102.99	Pk	20.6	-28.9	94.69	100.82	-	-6.13	-	116	124	V
		Av			74.69	-	80.82	-	-6.13	116	124	V
433.923	96.74	Pk	20.6	-28.9	88.44	100.82	-	-12.38	-	329	229	H
		Av			68.44	-	80.82	-	-12.38	329	229	H
**867.8418	52.31	Pk	25.8	-24.1	54.01	80.82	-	-26.81	-	269	126	V
		Av			34.01	-	60.82	-	-26.81	269	126	V
**867.848	45.54	Pk	25.8	-24.1	47.24	80.82	-	-33.58	-	56	101	H
		Av			27.24	-	60.82	-	-33.58	56	101	H

* Average Reading = Peak Reading (dBuV/m) + 20log (Duty Cycle), Where Duty Cycle is 0.1
(# of long pulses * long pulse width) + (# of short pulses * short pulse width) / 100 or T
Refer to section 7.2 for duty cycle factor calculation (-20dB)
Note: Radiated peak result is based on 100% duty cycle sample; average reading = peak reading + DCCF
** Harmonics of fundamental 433.92MHz

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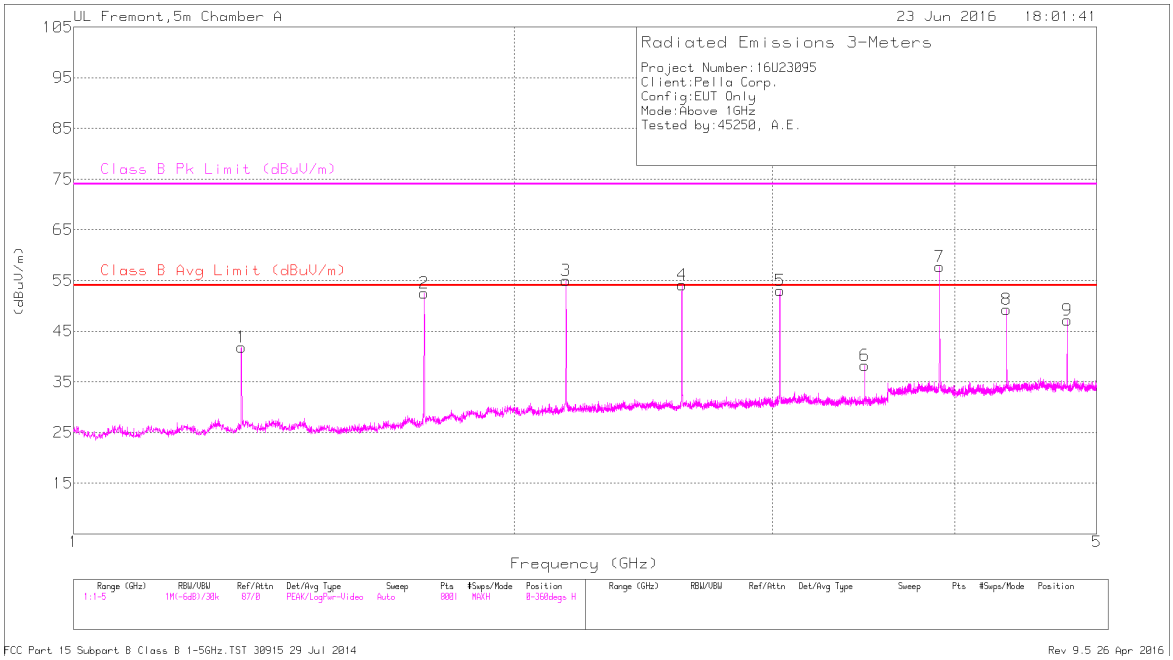
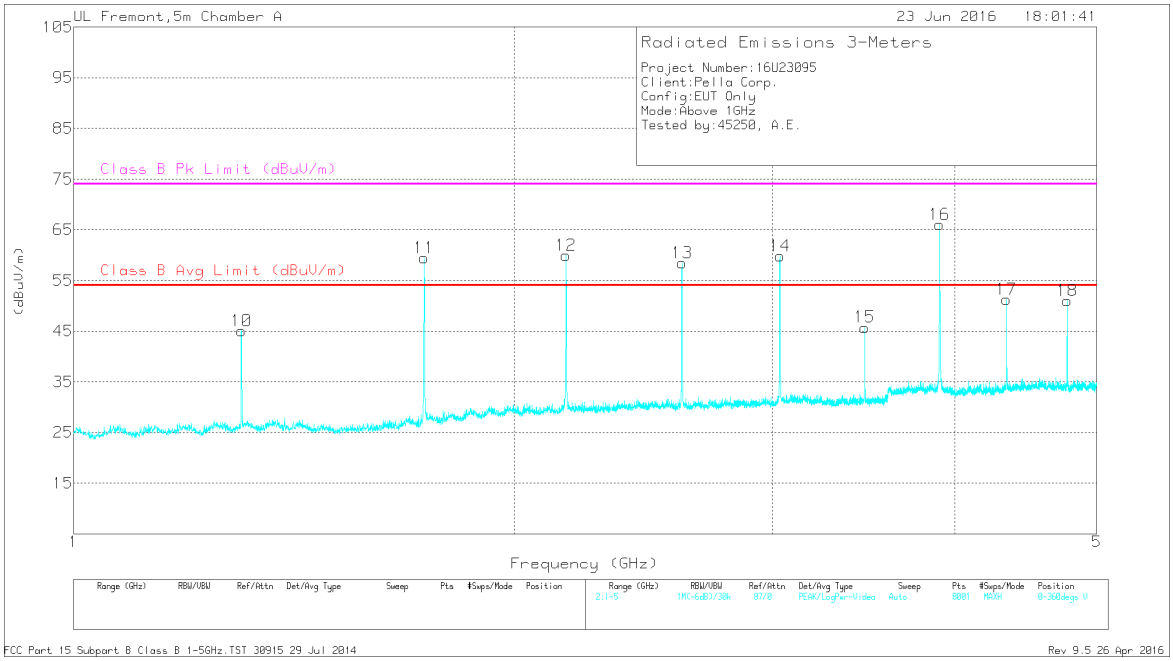
HARMONICS AND TX SPURIOUS EMISSIONS ABOVE 1GHz

HORIZONTAL



VERTICAL



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Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl (dB)	Corrected Avg Reading (dBuV/m)	Class B Avg Limit (dBuV/m)	Av Margin (dB)	Corrected PK Reading (dBuV/m)	Class B Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.736	58.9	Pk	29.6	-34	-	-	-	54.5	80.82	-26.32	223	207	H
		Av			34.5	60.82	-26.32	-	-	-	223	207	H
1.736	64.38	Pk	29.6	-34	-	-	-	59.98	80.82	-20.84	310	155	V
		Av			39.98	60.82	-20.84	-	-	-	310	155	V
2.169	63.67	Pk	31.7	-33.4	-	-	-	61.97	80.82	-18.85	332	230	V
		Av			41.97	60.82	-18.85	-	-	-	332	230	V
2.17	58.28	Pk	31.7	-33.4	-	-	-	56.58	80.82	-24.24	30	113	H
		Av			36.58	60.82	-24.24	-	-	-	30	113	H
2.603	56.46	Pk	32.3	-32.9	-	-	-	55.86	80.82	-24.96	229	139	H
		Av			35.86	60.82	-24.96	-	-	-	229	139	H
2.604	59.24	Pk	32.3	-32.9	-	-	-	58.64	80.82	-22.18	13	104	V
		Av			38.64	60.82	-22.18	-	-	-	13	104	V
3.037	54.21	Pk	33	-32.5	-	-	-	54.71	80.82	-26.11	199	135	H
		Av			34.71	60.82	-26.11	-	-	-	199	135	H
3.037	59.91	Pk	33	-32.5	-	-	-	60.41	80.82	-20.41	3	271	V
		Av			40.41	60.82	-20.41	-	-	-	3	271	V
3.471	43.95	Pk	33	-31.8	-	-	-	45.15	80.82	-35.67	197	249	H
		Av			25.15	60.82	-35.67	-	-	-	197	249	H
3.471	48.24	Pk	33	-31.8	-	-	-	49.44	80.82	-31.38	5	160	V
		Av			29.44	60.82	-31.38	-	-	-	5	160	V
*1.302	50.9	Pk	28.9	-34.6	-	-	-	45.2	74	-28.8	243	157	H
		Av			25.2	54	-28.8	-	-	-	243	157	H
*1.302	53.05	Pk	28.9	-34.6	-	-	-	47.35	74	-26.65	218	123	V
		Av			27.35	54	-26.65	-	-	-	218	123	V
*3.905	56.66	Pk	33.6	-31.1	-	-	-	59.16	74	-14.84	26	397	H
		Av			39.16	54	-14.84	-	-	-	26	397	H
*3.905	64.17	Pk	33.6	-31	-	-	-	66.77	74	-7.23	360	119	V
		Av			46.77	54	-7.23	-	-	-	360	119	V
*4.339	49.2	Pk	33.9	-30.2	-	-	-	52.9	74	-21.1	355	260	H
		Av			32.9	54	-21.1	-	-	-	355	260	H
*4.339	52.92	Pk	33.9	-30.2	-	-	-	56.62	74	-17.38	54	249	V
		Av			36.62	54	-17.38	-	-	-	54	249	V
*4.773	47.28	Pk	34.3	-29.8	-	-	-	51.78	74	-22.22	17	242	H
		Av			31.78	54	-22.22	-	-	-	17	242	H
*4.773	50.59	Pk	34.3	-29.8	-	-	-	55.09	74	-18.91	20	388	V
		Av			35.09	54	-18.91	-	-	-	20	388	V

Pk - Peak detector

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Average Reading = Peak Reading (dBuV/m) + 20log (Duty Cycle), Where Duty Cycle is
(# of long pulses * long pulse width) + (# of short pulses * short pulse width) / 100 or T
Refer to section 7.2 for duty cycle factor calculation (-20dB)
Note: Radiated peak result is based on 100% duty cycle sample; average reading = peak reading + DCCF

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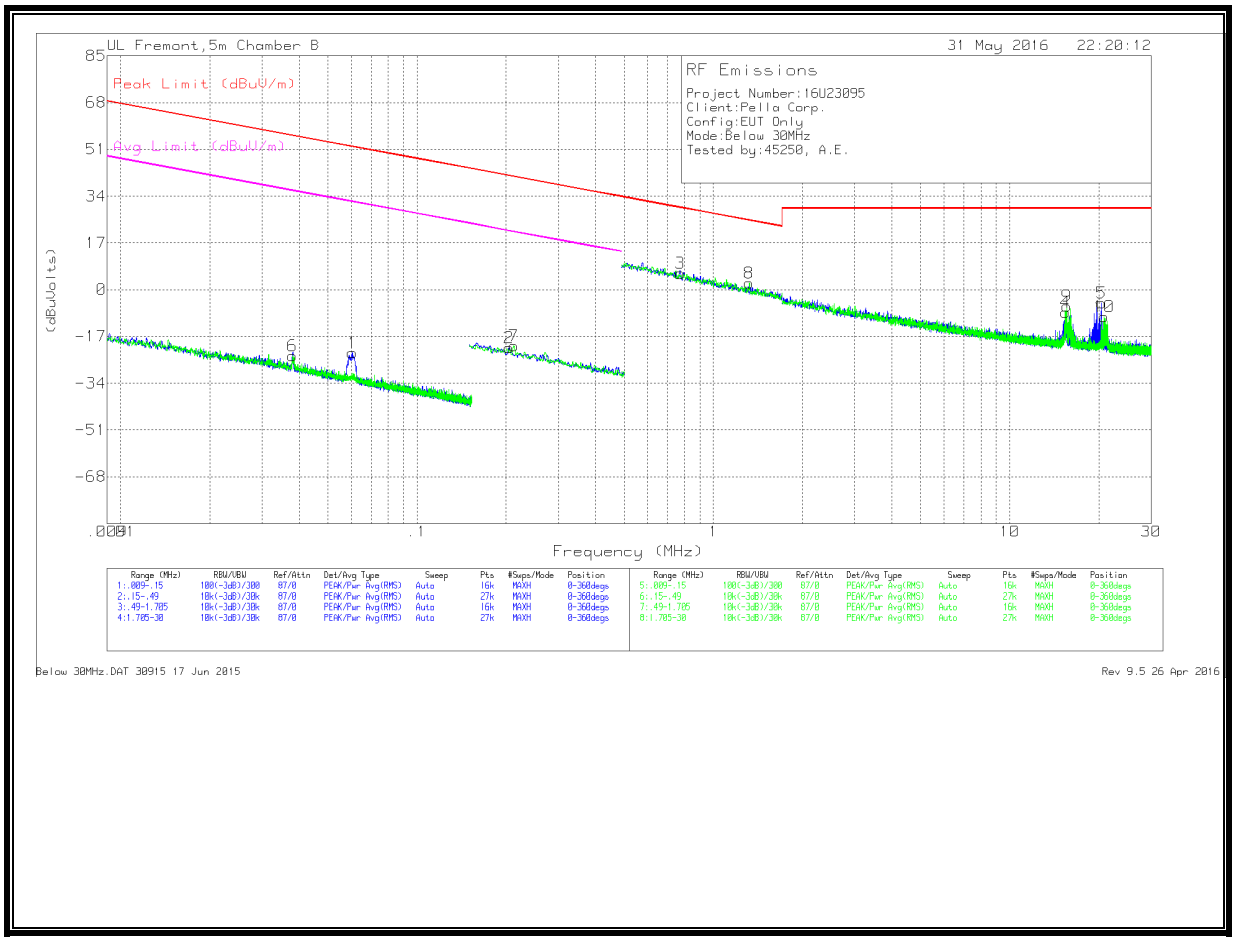
BELOW 30MHz



	Range (MHz)	RBW/VBW	Ref/Attn	Det/Avg Type	Sweep	Pts	#Swps/Mode	Position
1:	.009-.15	100(-3dB)/300	87/0	PEAK/Pwr Avg(RMS)	Auto	16k	MAXH	0-360degs
2:	.15-.49	10k(-3dB)/30k	87/0	PEAK/Pwr Avg(RMS)	Auto	27k	MAXH	0-360degs
3:	.49-1.705	10k(-3dB)/30k	87/0	PEAK/Pwr Avg(RMS)	Auto	16k	MAXH	0-360degs
4:	1.705-30	10k(-3dB)/30k	87/0	PEAK/Pwr Avg(RMS)	Auto	27k	MAXH	0-360degs
5:	.009-.15	100(-3dB)/300	87/0	PEAK/Pwr Avg(RMS)	Auto	16k	MAXH	0-360degs
6:	.15-.49	10k(-3dB)/30k	87/0	PEAK/Pwr Avg(RMS)	Auto	27k	MAXH	0-360degs
7:	.49-1.705	10k(-3dB)/30k	87/0	PEAK/Pwr Avg(RMS)	Auto	16k	MAXH	0-360degs
8:	1.705-30	10k(-3dB)/30k	87/0	PEAK/Pwr Avg(RMS)	Auto	27k	MAXH	0-360degs

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BELOW 1GHZ RADIATED EMISSIONS

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
6	.03809	42.32	Pk	12.3	1.4	-80	-23.98	55.99	-79.97	35.99	-59.97	0-360
1	.06053	44.55	Pk	11.1	1.4	-80	-22.95	51.97	-74.92	31.97	-54.92	0-360
2	.20467	46.63	Pk	10.8	1.5	-80	-21.07	41.38	-62.45	21.38	-42.45	0-360
7	.21207	47.32	Pk	10.8	1.5	-80	-20.38	41.07	-61.45	21.07	-41.45	0-360

Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
3	.77454	33.79	Pk	10.6	1.5	-40	5.89	29.82	-23.93	-	-	0-360
8	1.32216	30.24	Pk	10.7	1.5	-40	2.44	25.18	-22.74	-	-	0-360
4	15.45528	19.53	Pk	10.6	1.6	-40	-8.27	29.54	-37.81	-	-	0-360
9	15.56532	21.91	Pk	10.5	1.6	-40	-5.99	29.54	-35.53	-	-	0-360
5	20.36831	23.48	Pk	10	1.7	-40	-4.82	29.54	-34.36	-	-	0-360
10	20.78751	18.46	Pk	10	1.7	-40	-9.84	29.54	-39.38	-	-	0-360

Pk - Peak detector

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