



**FCC CFR47 PART 15 SUBPART C  
IC RSS-210  
CERTIFICATION  
TEST REPORT**

**FOR**

**GE SLIM DOOR WINDOW SENSOR 5008-01**

**MODEL NUMBER: TX-1010-01-1 & TX-1010-01-3**

**FCC ID: B4Z-TX-1010-01**

**IC: 1175C-TX101001**

**REPORT NUMBER: 07U11131-1, REVISION C**

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*Prepared for*  
**GE SECURITY  
1275 RED FOX ROAD  
ARDEN HILLS, MN 55112, U.S.A.**

*Prepared by*  
**COMPLIANCE CERTIFICATION SERVICES  
47173 BENICIA STREET  
FREMONT, CA 94538, USA  
TEL: (510) 771-1000  
FAX: (510) 661-0888**



**NVLAP LAB CODE 200065-0**

Revision History

Rev.	Issue Date	Revisions	Revised By
---	09/17/07	Initial Issue	T. Chan
B	10/02/07	Modified EUT name	T. Hong
C	01/14/08	Revised model name, FCC ID, and IC #; added section 5.2: Model Differences; and corrected applicant address	T. Chan

## TABLE OF CONTENTS

1.	ATTESTATION OF TEST RESULTS .....	4
2.	TEST METHODOLOGY .....	5
3.	FACILITIES AND ACCREDITATION .....	5
4.	CALIBRATION AND UNCERTAINTY .....	5
4.1.	MEASURING INSTRUMENT CALIBRATION .....	5
4.2.	MEASUREMENT UNCERTAINTY .....	5
5.	EQUIPMENT UNDER TEST .....	6
5.1.	DESCRIPTION OF EUT .....	6
5.2.	MODEL DIFFERENCES .....	6
5.3.	SOFTWARE AND FIRMWARE .....	6
5.4.	MODIFICATIONS .....	6
5.5.	WORST-CASE CONFIGURATION AND MODE .....	6
5.6.	DESCRIPTION OF AVAILABLE ANTENNAS .....	6
5.7.	DESCRIPTION OF TEST SETUP .....	7
6.	TEST AND MEASUREMENT EQUIPMENT .....	9
7.	LIMITS AND RESULTS .....	10
7.1.	20dB BANDWIDTH .....	10
7.2.	MAXIMUM MODULATION PERCENTAGE (M %) .....	13
7.3.	LESS THAN 5 SECONDS PLOT .....	19
7.4.	RADIATED EMISSIONS .....	21
7.4.1.	TRANSMITTER RADIATED SPURIOUS EMISSIONS .....	21
7.4.2.	RECEIVER SPURIOUS EMISSIONS LIMIT .....	26
8.	SETUP PHOTOS .....	27

## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** GE SECURITY  
1275 RED FOX ROAD  
ARDEN HILLS, MN 55112, U.S.A.

**EUT DESCRIPTION:** GE SLIM DOOR WINDOW SENSOR 5008-01

**MODEL:** TX-1010-01-1 & TX-1010-01-3

**SERIAL NUMBER:** 1973

**DATE TESTED:** JUNE 11 - 12, 2007

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART C	NO NON-COMPLIANCE NOTED
IC RSS-210 ISSUE 5	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. 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 Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

Tested By:



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THU CHAN  
EMC SUPERVISOR  
COMPLIANCE CERTIFICATION SERVICES

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CHIN PANG  
EMC ENGINEER  
COMPLIANCE CERTIFICATION SERVICES

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, FCC CFR 47 Part 2 and FCC CFR 47 Part 15, IC RSS-210 and IC RSS-212.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

## 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. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Radiated Emission Above 2000 MHz	+/- 4.3 dB
Power Line Conducted Emission	+/- 2.9 dB

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

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is a Recessed Door/Window Sensor.

<b>Equipment Type</b>	Transmitter
<b>Fundamental Frequency</b>	319.508 MHz
<b>Power Source</b>	Lithium Battery 3V, Type CR2032x2
<b>Transmitting Time</b>	Periodic $\leq 5$ seconds
<b>Manufacturer</b>	Secure Wireless, Inc.

### 5.2. MODEL DIFFERENCES

Model TX-1010-01-1 is the white version and model TX-1010-01-3 is the brown version. The two models are identical other than the color of the plastic case.

### 5.3. SOFTWARE AND FIRMWARE

EUT is modified to transmit continuously.

### 5.4. MODIFICATIONS

No modifications to the EUT were performed.

### 5.5. WORST-CASE CONFIGURATION AND MODE

EUT has been evaluated at X, Y, and Z-axis. The highest measured output power was at X-Axis.

### 5.6. DESCRIPTION OF AVAILABLE ANTENNAS

The transmitter utilizes an internal loop fixed antenna with a maximum gain of -15 dBi.

## **5.7. DESCRIPTION OF TEST SETUP**

### **SUPPORT EQUIPMENT**

N/A

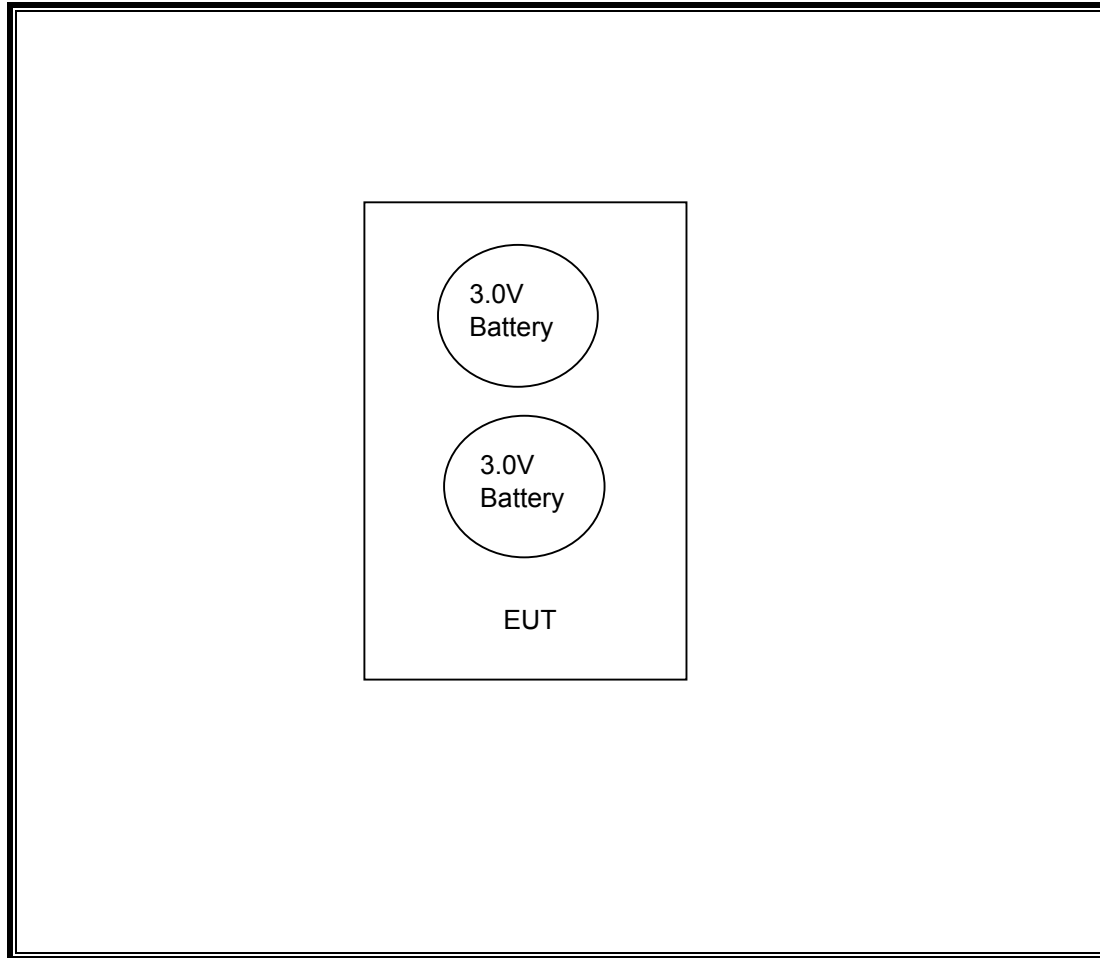
### **I/O CABLES**

N/A

### **TEST SETUP**

The EUT is stand-alone unit and is battery operated.

**SETUP DIAGRAM FOR TESTS**





## 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	Serial Number	Cal Due
SA RF Section, 1.5 GHz	Agilent / HP	85680B	2814A04227	01/07/08
Spectrum Analyzer 9 Hz ~ 26.5 GHz	Agilent / HP	E4407B	US41444322	11/09/08
Antenna, Horn 1 ~ 18 GHz	ETS	3117	29301	04/22/08
Preamplifier, 1 ~ 26.5 GHz	Agilent / HP	8449B	3008A00369	08/03/08
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A0022704	10/13/07
Quasi-Peak Adaptor	Agilent / HP	85650A	3145A01654	01/21/08
SA Display Section 2	Agilent / HP	85662A	2816A16696	04/07/08

## 7. LIMITS AND RESULTS

### 7.1. 20dB BANDWIDTH

#### LIMIT

§15.231  
IC RSS-210 Issue 6 A1.1.3

#### TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer.

20dB Bandwidth: The RBW is set to 100 KHz. The VBW is set to 100 KHz. The sweep time is coupled. Bandwidth is determined at the points 20 dB down from the modulated carrier.

#### RESULTS

No non-compliance noted:

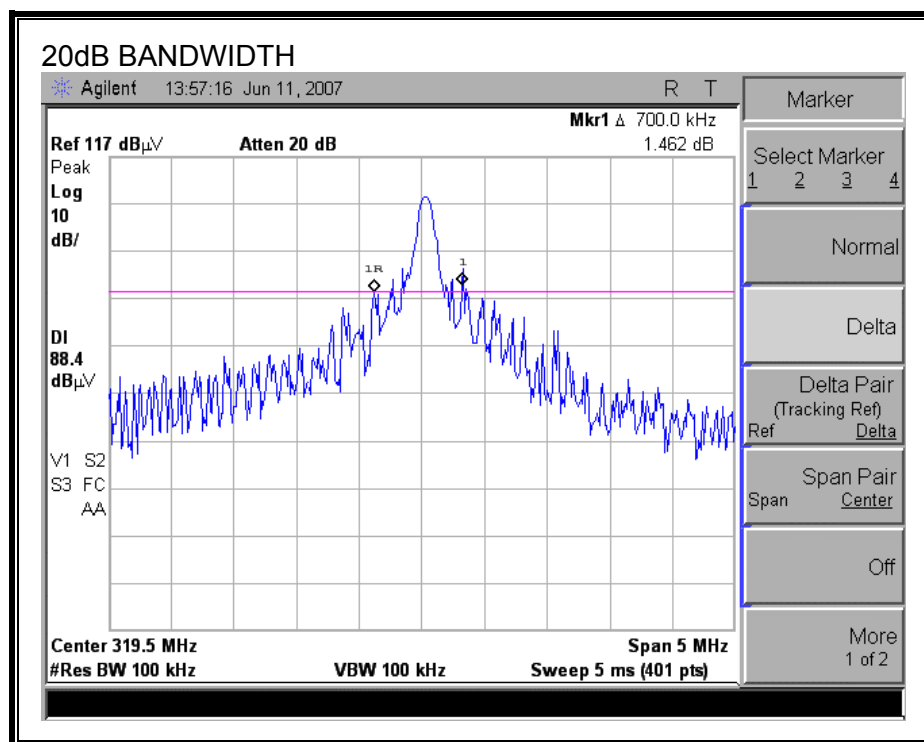
##### 20dB Bandwidth

Frequency (MHz)	20dB Bandwidth (KHz)	Limit (KHz)	Margin (KHz)
319.508	700	798.77	-98.77

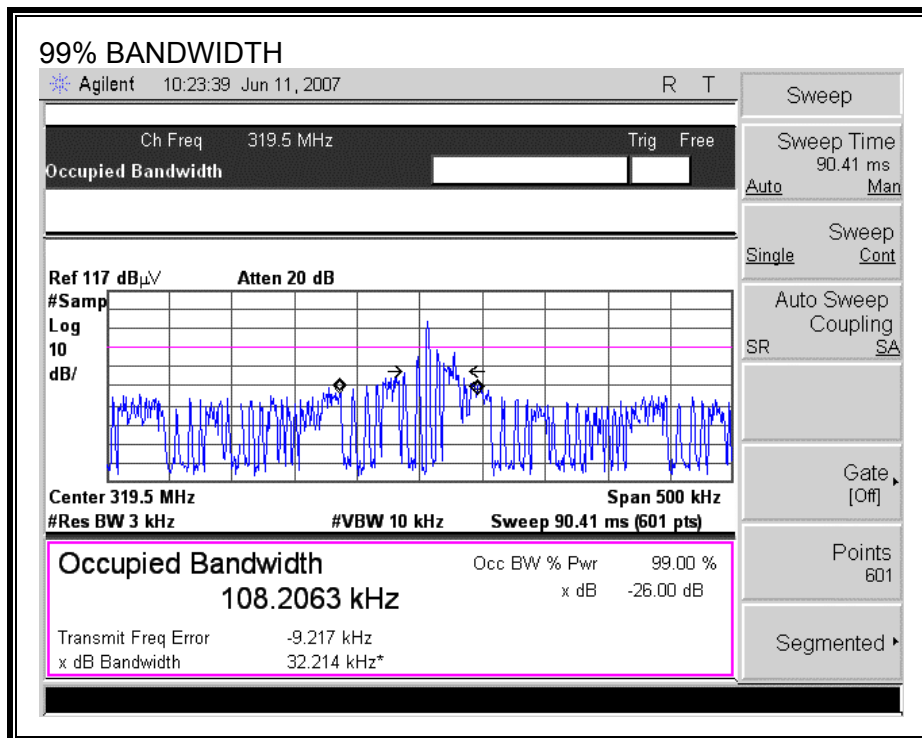
##### 99% Bandwidth

Frequency (MHz)	99% Bandwidth (KHz)	Limit (KHz)	Margin (KHz)
319.508	108.2063	798.77	-690.5637

## 20dB BANDWIDTH



**99% BANDWIDTH**



## 7.2. MAXIMUM MODULATION PERCENTAGE (M %)

### LIMIT

§15.35 (c)  
IC RSS-Gen Issue 1 §4.3

### TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer or radiated field strength. The RBW is set to 100 kHz and the VBW is set to 100 kHz. 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:

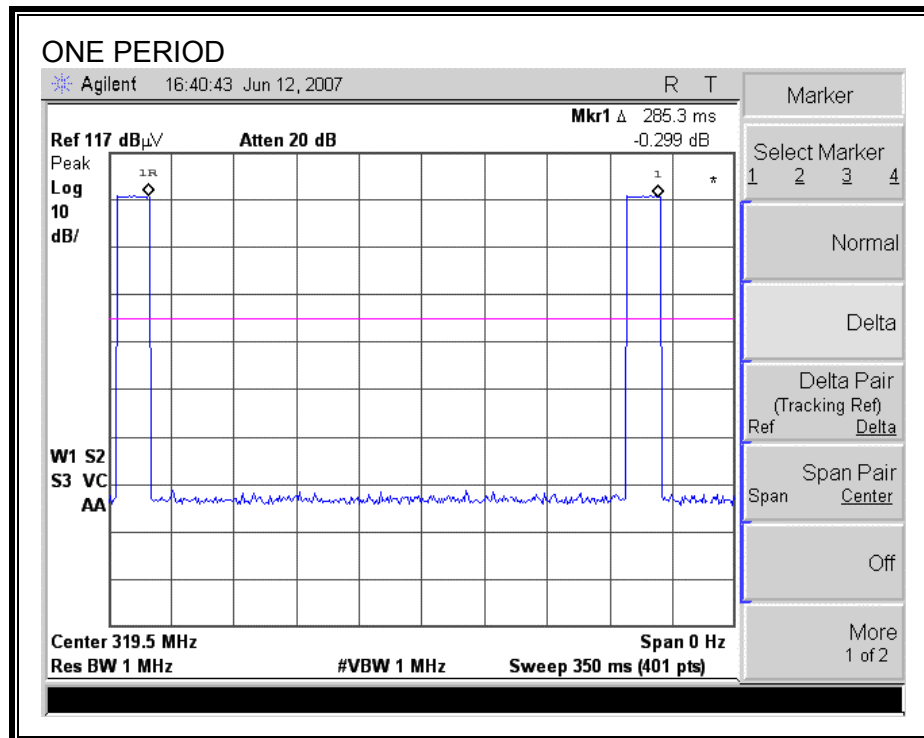
Average Reading = Peak Reading (dBuV/m) + 20log (Duty Cycle), Where Duty Cycle is  
(# of long pulses \* long pulse width) + (# of short pulses \* short pulse width) / 100 or T

### RESULTS

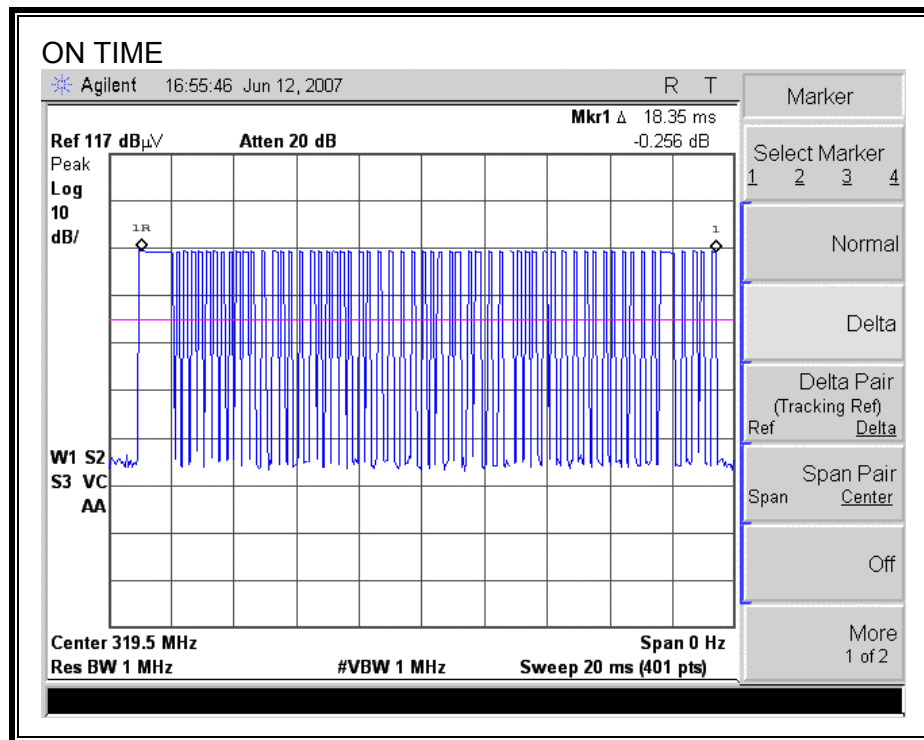
No non-compliance noted:

One Period (ms)	Long Width (ms)	# of Long Pulses	Long Width (ms)	# of 2nd Long Pulses	Short Width (ms)	# of Short Pulses	Duty Cycle	20*Log Duty Cycle (dB)
100	1	1	0.35	1	0.01	57	0.019	-34.33

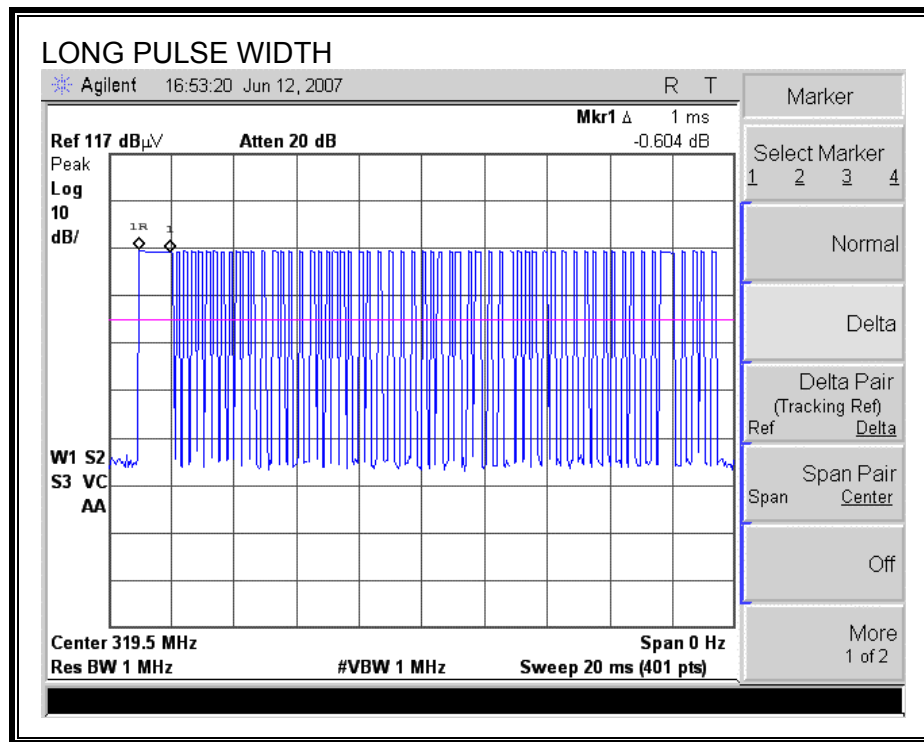
**ONE PERIOD**



ON TIME

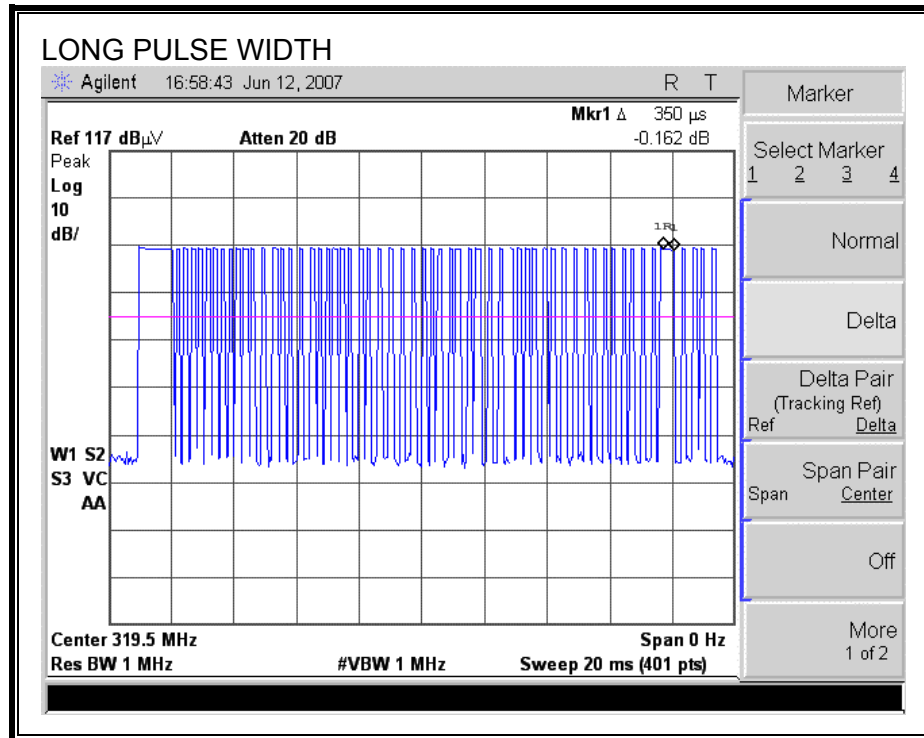


LONG PULSE WIDTH

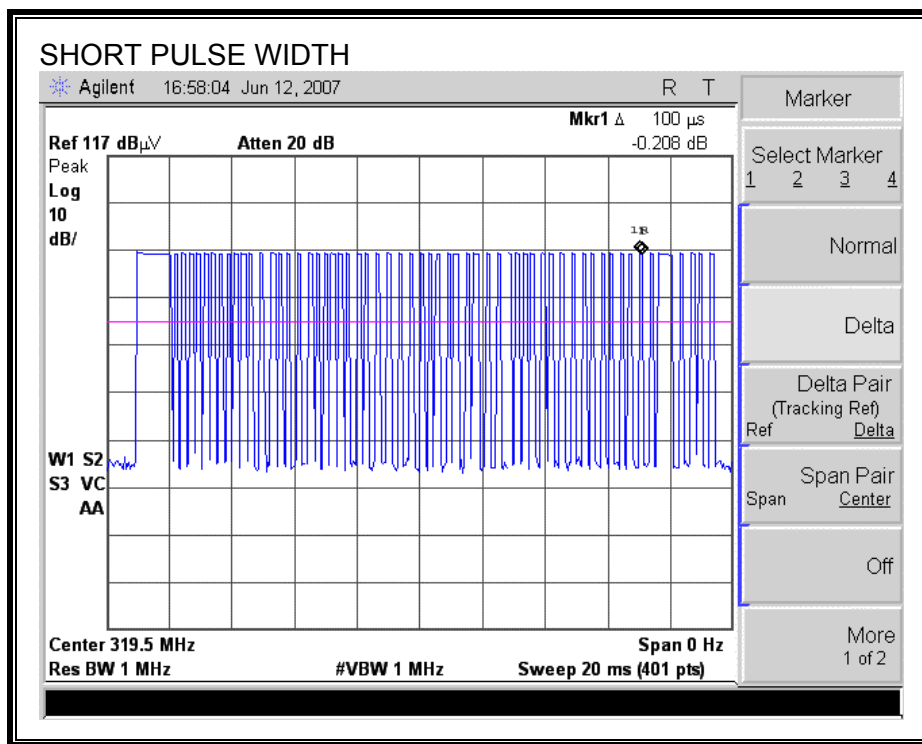




SECOND LONG PULSE WIDTH



SHORT PULSE WIDTH



### **7.3. LESS THAN 5 SECONDS PLOT**

#### **LIMIT**

§15.231 (a) (1); (a) (2)  
RSS210 A1.1.1 (1)

#### **TEST PROCEDURE**

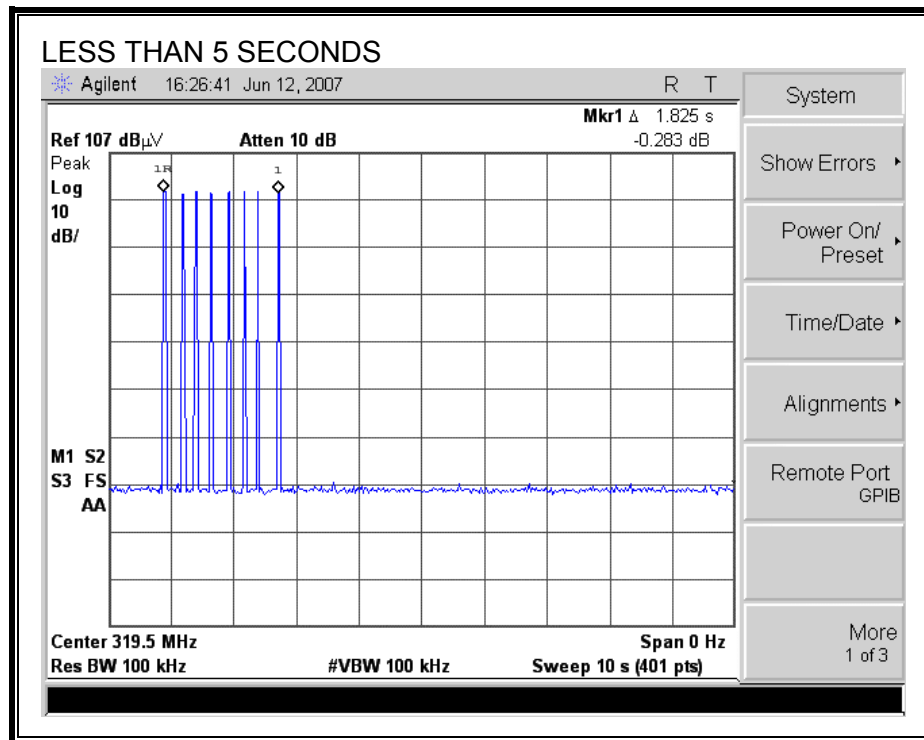
The transmitter output is connected to a spectrum analyzer or radiated field strength. The RBW is set to 100 kHz and the VBW is set to 100 kHz. The sweep time is set to 10 seconds and the span is set to 0 Hz.

#### **RESULTS**

No non-compliance noted:

Transmission begins approximately 0.9 second after activation and transmission ceases approximately 2.725 seconds after activation.

**LESS THAN 5 SECONDS**



## 7.4. RADIATED EMISSIONS

### 7.4.1. TRANSMITTER RADIATED SPURIOUS EMISSIONS

#### LIMITS

§15.231 (b) 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 Frequency (microvolts/meter)	Field Strength of Spurious Emissions (microvolts/meter)
40.66 - 40.70	2,250	225
70 - 130	1,250	125
130 - 174	1,250 to 3,750 <sup>1</sup>	125 to 375 <sup>1</sup>
174 - 260	3,750	375
260 - 470	3,750 to 12,500 <sup>1</sup>	375 to 1,250 <sup>1</sup>
Above 470	12,500	1,250

<sup>1</sup> 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
<sup>1</sup> 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	( <sup>2</sup> )
13.36 - 13.41	322 - 335.4		

<sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> 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)
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.

RSS210 Table 4 same as limits FCC applied above.

### **TEST PROCEDURE**

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. 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 1 MHz for peak measurements and 10 Hz 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.

FUNDAMENTAL HARMONICS AND SPURIOUS EMISSIONS 30 – 1000 MHz



FCC, VCCI, CISPR, CE, AUSTEL, NZ  
UL, CSA, TUV, BSMI, DHHS, NVLAP

561F MONTEREY ROAD, SAN JOSE, CA 95037-9001  
PHONE: (408) 463-0885 FAX: (408) 463-0888

Project #: 07U11131  
Report #: 07U11131  
Date & Time: 06/12/07  
Test Engr: Chin Pang

Company: GE SECURITY  
EUT Description: Recessed Door/Window Sensor  
Test Configuration: EUT Only  
Type of Test: FCC 15.231b  
Mode of Operation: Transmitting

M% = ((t1+t2+t3+...)/T) \* 100% = 1.90%

Av Reading = Pk Reading + 20\*log(M%)  
20 \* log (M%) = -34.42

Freq. (MHz)	Pk Rdg (dBuV)	Av Rdg (dBuV)	AF (dB)	Closs (dB)	Pre-amp (dB)	Pk Level (dBuV/m)	Av Level (dBuV/m)	Pk Limit FCC B	Av Limit FCC B	Pk Margin (dB)	Avg Margin (dB)	Pol (H/V)	Az (Deg)	Height (Meter)
X-Position ( EUT Lay down )														
319.50	72.30	52.30	14.35	1.91	0.00	88.56	68.56	95.89	75.89	-7.33	-7.33	3mV	0.00	1.00
319.50	58.00	38.00	14.35	1.91	0.00	74.26	54.26	95.89	75.89	-21.63	-21.63	3mH	0.00	2.00
Y-Position ( EUT Standup )														
319.50	70.00	50.00	14.35	1.91	0.00	86.26	66.26	95.89	75.89	-9.63	-9.63	3mV	0.00	1.00
319.50	60.00	40.00	14.35	1.91	0.00	76.26	56.26	95.89	75.89	-19.63	-19.63	3mH	0.00	2.00
Z-Position ( EUT Side Lay down )														
319.50	71.00	51.00	14.35	1.91	0.00	87.26	67.26	95.89	75.89	-8.63	-8.63	3mV	0.00	1.00
319.50	59.00	39.00	14.35	1.91	0.00	75.26	55.26	95.89	75.89	-20.63	-20.63	3mH	0.00	2.00
Worst Position: X Position														
639.80	42.00	22.00	22.65	2.83	28.98	38.50	18.50	75.89	55.89	-37.39	-37.39	3mV	0.00	1.00
639.80	47.40	27.40	22.65	2.83	28.98	43.90	23.90	75.89	55.89	-31.99	-31.99	3mH	0.00	2.00
958.50	45.90	25.90	22.65	2.83	27.90	43.48	23.48	75.89	55.89	-32.41	-32.41	3mV	0.00	1.00
958.50	48.80	28.80	22.65	2.83	27.90	46.38	26.38	75.89	55.89	-29.51	-29.51	3mH	0.00	2.00



[illegible]

#### **7.4.2. RECEIVER SPURIOUS EMISSIONS LIMIT**

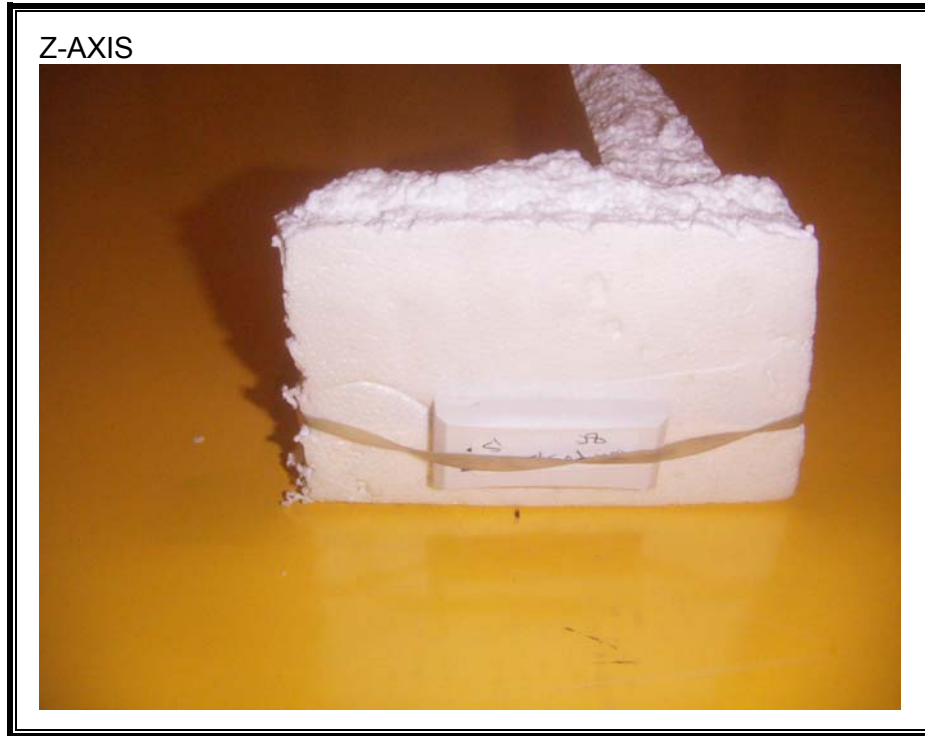
Not applicable, this EUT is transmitter only.

## 8. SETUP PHOTOS

### RADIATED RF MEASUREMENT SETUP FOR PORTABLE CONFIGURATION







**END OF REPORT**