



**FCC CFR47 PART 15 SUBPART C  
CERTIFICATION  
TEST REPORT**

**FOR**

**SECURE WIRELESS PET IMMUNE PIR**

**MODEL: EV-P319**

**FCC ID: QNP-EVP319**

**REPORT NUMBER: 04U3121-1**

**ISSUE DATE: NOVEMBER 30, 2004**

*Prepared for*

**SECURE WIRELESS, INC.  
1185 PARK CENTER DRIVE  
VISTA, CA. 92083  
U.S.A**

*Prepared by*

**COMPLIANCE ENGINEERING SERVICES, INC.  
*d.b.a.***

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**NVLAP<sup>®</sup>**  
**LAB CODE:200065-0**

Revision History

<u>Rev.</u>	<u>Revisions</u>	<u>Revised By</u>
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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** SECURE WIRELES SYSTEMS INC.  
1185 PARK CENTER DRIVE  
VISTA, CA. 92083  
U.S.A.

**EUT DESCRIPTION:** SECURE WIRELESS PET IMMUNE PIR

**MODEL NO:** EV-P319

**FCC ID:** QNP-EVP319

**DATE OF TESTED:** NOVEMBER 23-30, 2004

**REPORT NO:** 04U3121-1

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART C	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.

Tested By:



CHIN PANG  
EMC TECHNICIAN  
COMPLIANCE CERTIFICATION SERVICES

Approved & Released By:



THU CHAN  
EMC SUPERVISOR  
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.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 561F Monterey Road, Morgan Hill, 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

The site is constructed and calibrated in conformance with the requirements of ANSI C63.4/2003.

### 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
Power Line Conducted Emission	+/- 2.9 dB

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

## 5. PRODUCT DESCRIPTION

Equipment Type	319.5MHz Transmitter
Fundamental Frequency	319 MHz
Power Source	3V Battery
Transmitting Time	Periodic $\leq 5$ seconds
Associated Receiver	ITI and Caddx receivers
Manufacturer	Secure Wireless, Inc.

## 6. MEASUREMENT EQUIPMENT USED

TEST EQUIPMENT LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
Quasi-Peak Adaptor	HP	85650A	2521A01038	7/16/2005
SA Display Section 3	HP	85662A	2314A04793	7/16/2005
SA RF Section, 1.5 GHz	HP	85680A	2314A02604	7/16/2005
Site C Preamplifier, 1300MHz	HP	8447D	2944A06550	8/15/2005
Spectrum Analyzer 20 Hz ~ 44 GHz	Agilent	E4446A	US42070220	1/13/2005
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	2/4/2005
Amplifier 1-26GHz	MITEQ	NSP2600-SP	924341	4/25/2005
Site C Antenna, Log Periodic	EMCO	3146	9107-3163	3/6/2005

## 7. POWERLINE RFI LIMIT

CONNECTED TO AC POWER LINE	SECTION 15.207
CARRIER CURRENT SYSTEM IN THE FREQUENCY RANGE OF 150 KHz TO 30 MHz	SECTION 15.205 AND SECTION 15.209, 15.221, 15.223, 15.225 OR 15.227, AS APPROPRIATE.
BATTERY POWER	NOT REQUIRED

## 8. RADIATED EMISSION LIMITS

GENERAL REQUIREMENTS	SECTION 15.209
RESTRICTED BANDS OF OPERATION	SECTION 15.205
PERIODIC OPERATION IN THE BAND 40.66 - 40.70 MHz AND ABOVE 70 MHz.	SECTION 15.231(b)

## 9. SYSTEM TEST CONFIGURATION

Use a block of foam and combined it with EUT wrapping rubber band around it. This way it can test X, Y, and Z axis. To activate continuous transmission, reset jumper and press 8 times on S3 button.



X-Axis



Y-Axis

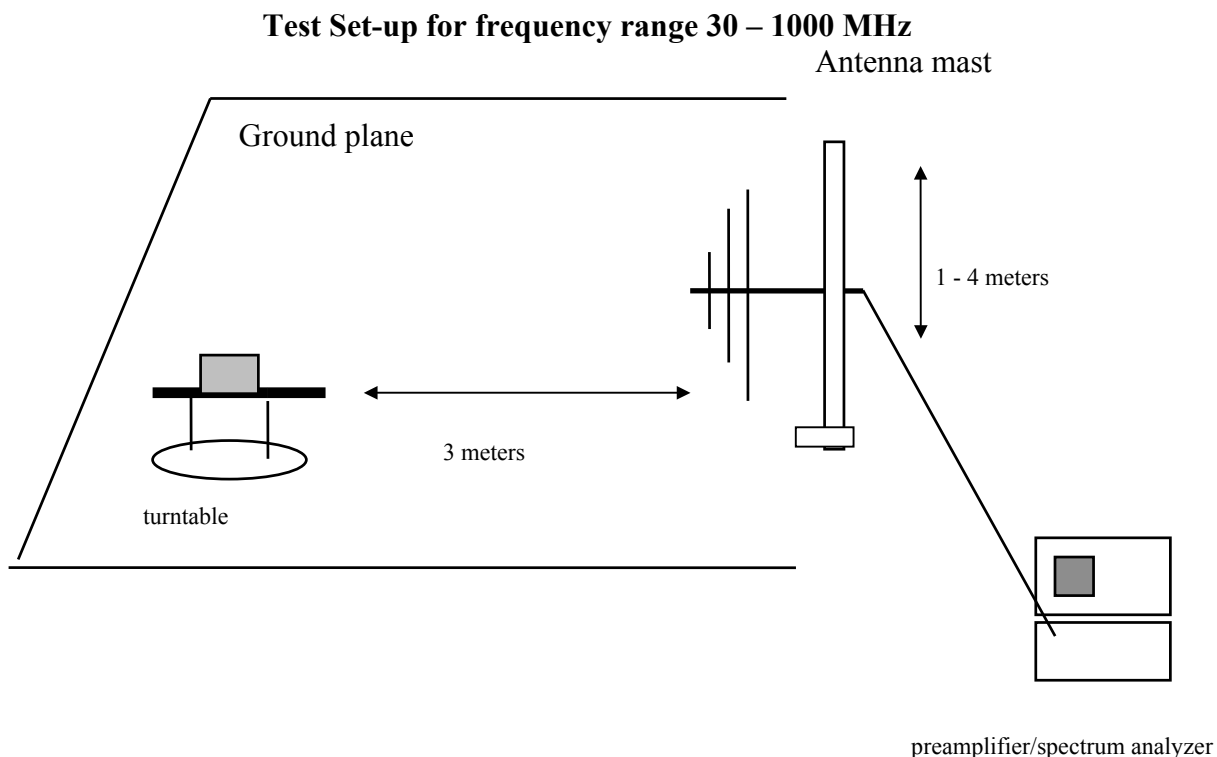


Z-Axis

### Radiated Open Site Test Set-up

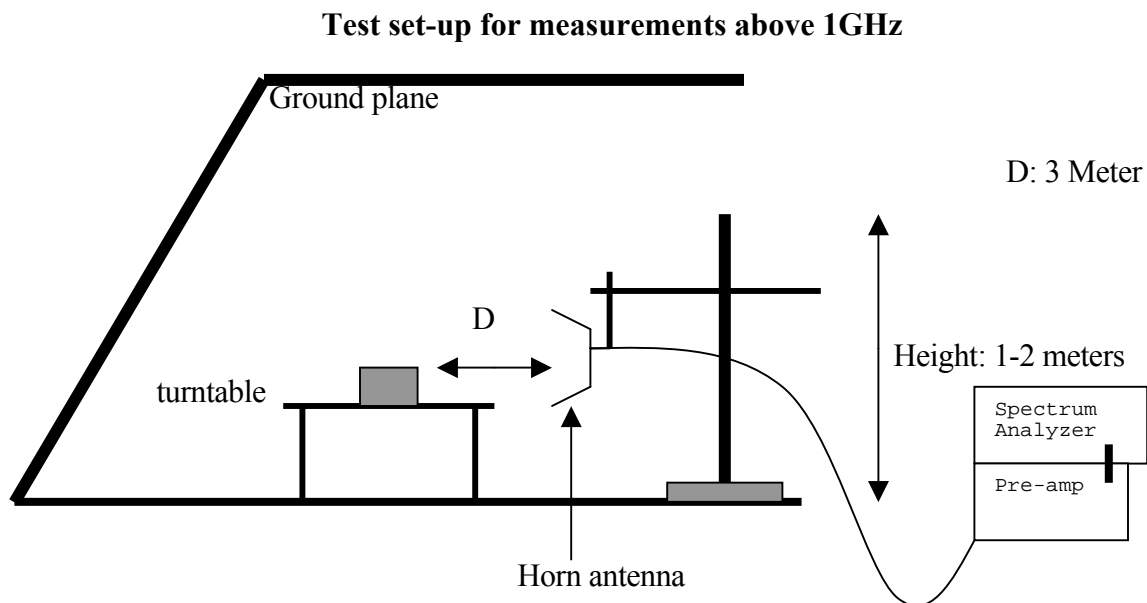
## 10. TEST PROCEDURE

### Radiated Emissions, 15.231(4)(b)



1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3-meters from the EUT.
2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205. The EUT was moved throughout the XY, XZ, and YZ planes to maximize emissions received by the search antenna.
3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.





1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 1-meters from the EUT. The EUT antenna was mounted vertically as per normal installation.
2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205. The EUT was moved throughout the XY, XZ, and YZ planes to maximize emissions received by the search antenna.
3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.

## 11. EUT MODIFICATION

To achieve compliance to FCC Section 15.231 technical limits, the following change(s) were made during compliance testing:


**No modifications were made during testing**

## 12. TEST RESULT

Powerline RFI Class B	EUT	Radiated Emission Limits	EUT
SECTION 15.207		SECTION 15.209	X
SECTION 15.205, 15.209, 15.221, 15.223, x 15.225 OR 15.227		SECTION 15.205	X
BATTERY POWER	X	SECTION 15.231 (b)	X

### 12.1 RADIATED EMISSIONS TEST DATA

#### RADIATED DATA 30 MHz – 1000 MHz

 <p>FCC, VCCI, CISPR, CE, AUSTEL, NZ UL, CSA, TUV, BSMI, DHHS, NVLAP</p> <p>561F MONTEREY ROAD, SAN JOSE, CA 95037-9001 PHONE: (408) 463-0885 FAX: (408) 463-0888</p>		<p><i>Project #:</i> 04U3121-1 <i>Report #:</i> 041130C1 <i>Date &amp; Time:</i> 11/30/2004 <i>Test Engr:</i> Chin Pang</p>										
<p><i>Company:</i> Secure Wireless, Inc. <i>EUT Description:</i> Secure Wireless Pet Immune PIR <i>Test Configuration:</i> EUT only <i>Type of Test:</i> FCC 15.231 <i>Mode of Operation:</i> Transmitting</p>												
<p>M% = ((t1+t2+t3+...)/T)*100% = 8.23%</p>												
<p>Av Reading = Pk Reading + 20*log(M%) 20*log(M%) = -21.692</p>												
Freq. (MHz)	Pk Rdg (dBuV)	Av Rdg (dBuV)	AF (dB)	Closs (dB)	Pre-amp (dB)	Level (dBuV/m)	Limit FCC_B	Margin (dB)	Pol (H/V)	Az (Deg)	Height (Meter)	Mark (P/Q/A)
EUT At Y Position												
319.00	68.20	46.51	16.37	2.91	0.00	65.79	75.86	-10.07	3mV	0.00	1.00	P
319.00	62.00	40.31	16.37	2.91	0.00	59.59	75.86	-16.27	3mH	0.00	1.00	P
EUT At X Position												
319.00	61.50	39.81	16.37	2.91	0.00	59.09	75.86	-16.77	3mH	0.00	1.50	P
319.00	65.80	44.11	16.37	2.91	0.00	63.39	75.86	-12.47	3mV	0.00	1.00	P
EUT At Z Position.												
319.00	55.80	34.11	16.37	2.91	0.00	53.39	75.86	-22.47	3mV	0.00	1.50	P
319.00	67.00	45.31	16.37	2.91	0.00	64.59	75.86	-11.27	3mH	0.00	2.50	P
Y position is the worst case												
Harmonics and Spurious Emissions												
639.00	53.00	31.31	22.28	4.40	27.81	30.18	55.86	-25.68	3mV	0.00	1.00	P
639.00	50.40	28.71	22.28	4.40	27.81	27.58	55.86	-28.28	3mH	0.00	1.50	P
957.00	48.30	26.61	22.28	4.40	27.81	25.48	55.86	-30.38	3mV	0.00	1.00	P
957.00	46.70	25.01	22.28	4.40	27.81	23.88	55.86	-31.98	3mH	0.00	2.00	P

### RADIATED EMISSIONS ABOVE 1GHz

11/30/04 High Frequency Measurement Compliance Certification Services, Morgan Hill Open Field Site																		
Test Engr: Chun Pang Project #: 04U3121-1 Company: Secure Wireless, Inc. EUT Descrip.: Secure Wireless Pet Immune PIR EUT M/N: EV-F319 Test Target: FCC 15.231 Mode Oper: TX																		
Test Equipment:																		
EMCO Horn 1-18GHz T73; S/N: 6717 @3m				Pre-amplifier 1-26GHz T87 Miteq 924342				Pre-amplifier 26-40GHz				Horn > 18GHz				Limit FCC 15.209		
Hi Frequency Cables																		
2 foot cable				3 foot cable				4 foot cable 4_Vien				12 foot cable 12_Vien				HPF HPF_1.5GHz	Reject Filter	Peak Measurements RBW=VBW=1MHz
Average Measurements RBW=1MHz; VBW=10Hz																		
Average=Peak-Duty Cycle																		
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fldr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)			
1.276	3.0	70.4	48.7	24.5	1.6	-40.1	0.0	0.1	56.5	34.8	74	54	-17.5	-19.2	V			
1.585	3.0	62.6	40.9	25.7	1.8	-39.9	0.0	0.2	50.5	28.8	74	54	-23.5	-25.2	V			
1.914	3.0	64.4	42.7	26.8	2.0	-39.6	0.0	0.4	54.1	32.4	74	54	-19.9	-21.6	V			
2.233	3.0	61.0	39.3	27.8	2.2	-39.3	0.0	0.5	52.2	30.5	74	54	-21.8	-23.5	V			
2.552	3.0	55.7	34.0	28.7	2.4	-39.0	0.0	0.6	48.4	26.7	74	54	-25.6	-27.3	V			
2.871	3.0	53.8	32.1	29.8	2.6	-38.7	0.0	0.6	48.0	26.3	74	54	-26.0	-27.7	V			
3.190	3.0	50.6	28.9	30.6	2.7	-38.5	0.0	0.6	45.9	24.2	74	54	-28.1	-29.8	V			
1.276	3.0	65.8	44.1	24.5	1.6	-40.1	0.0	0.1	51.9	30.2	74	54	-22.1	-23.8	H			
1.585	3.0	57.3	35.6	25.7	1.8	-39.9	0.0	0.2	45.2	23.5	74	54	-28.8	-30.5	H			
1.914	3.0	55.0	33.3	26.8	2.0	-39.6	0.0	0.4	44.7	23.0	74	54	-29.3	-31.0	H			
2.233	3.0	60.2	38.5	27.8	2.2	-39.3	0.0	0.5	51.4	29.7	74	54	-22.6	-24.3	H			
2.552	3.0	52.7	31.0	28.7	2.4	-39.0	0.0	0.6	45.4	23.7	74	54	-28.6	-30.3	H			
2.871	3.0	50.8	29.1	29.8	2.6	-38.7	0.0	0.6	45.0	23.3	74	54	-29.0	-30.7	H			
3.190	3.0	49.6	27.9	30.6	2.7	-38.5	0.0	0.6	44.9	23.2	74	54	-29.1	-30.8	H			
f	Measurement Frequency			Amp	Preamp Gain			Avg Lim	Average Field Strength Limit									
Dist	Distance to Antenna			D Corr	Distance Correct to 3 meters			Pk Lim	Peak Field Strength Limit									
Read	Analyzer Reading			Avg	Average Field Strength @ 3 m			Avg Mar	Margin vs. Average Limit									
AF	Antenna Factor			Peak	Calculated Peak Field Strength			Pk Mar	Margin vs. Peak Limit									
CL	Cable Loss			HPF	High Pass Filter													

## 12.1 MAXIMUM MODULATION PERCENTAGE (M%)

CALCULATION:

Average Reading = Peak Reading (dBuV/m)+ 20log (Duty Cycle)

In order to determine possible Maximum Modulation percentage, alternations are made to the EUT. We measured:

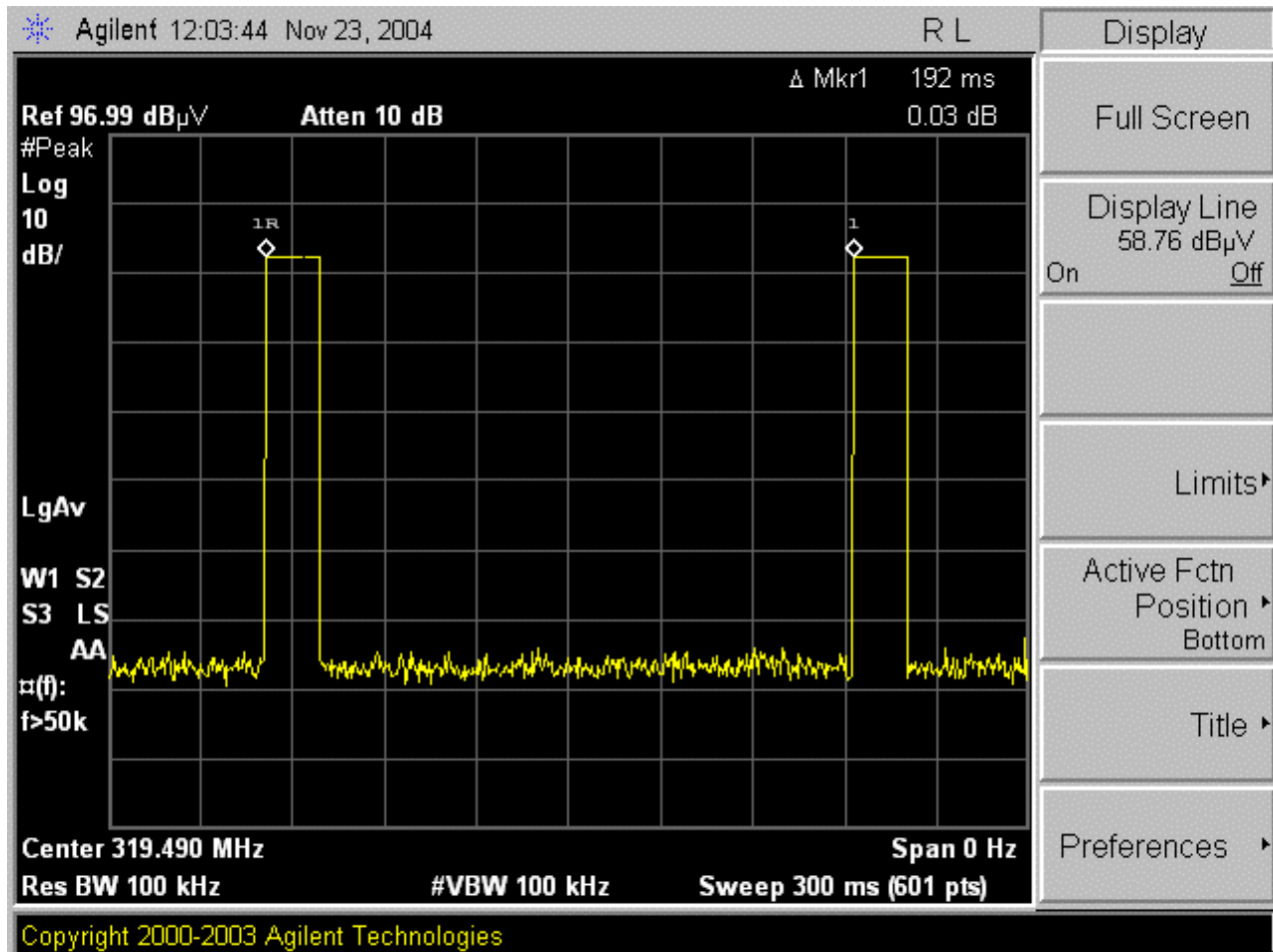
WHERE	1 Period	= 192ms
	Long pulse	=0.5 ms
	Short pulse	=0.133 ms
	No of Long pulse	= 1
	No of Short pulse	=58

Duty Cycle =  $(N_1L_1+N_2L_2+\dots+N_{n-1}L_{n-1}+N_nL_n)/100$  or T

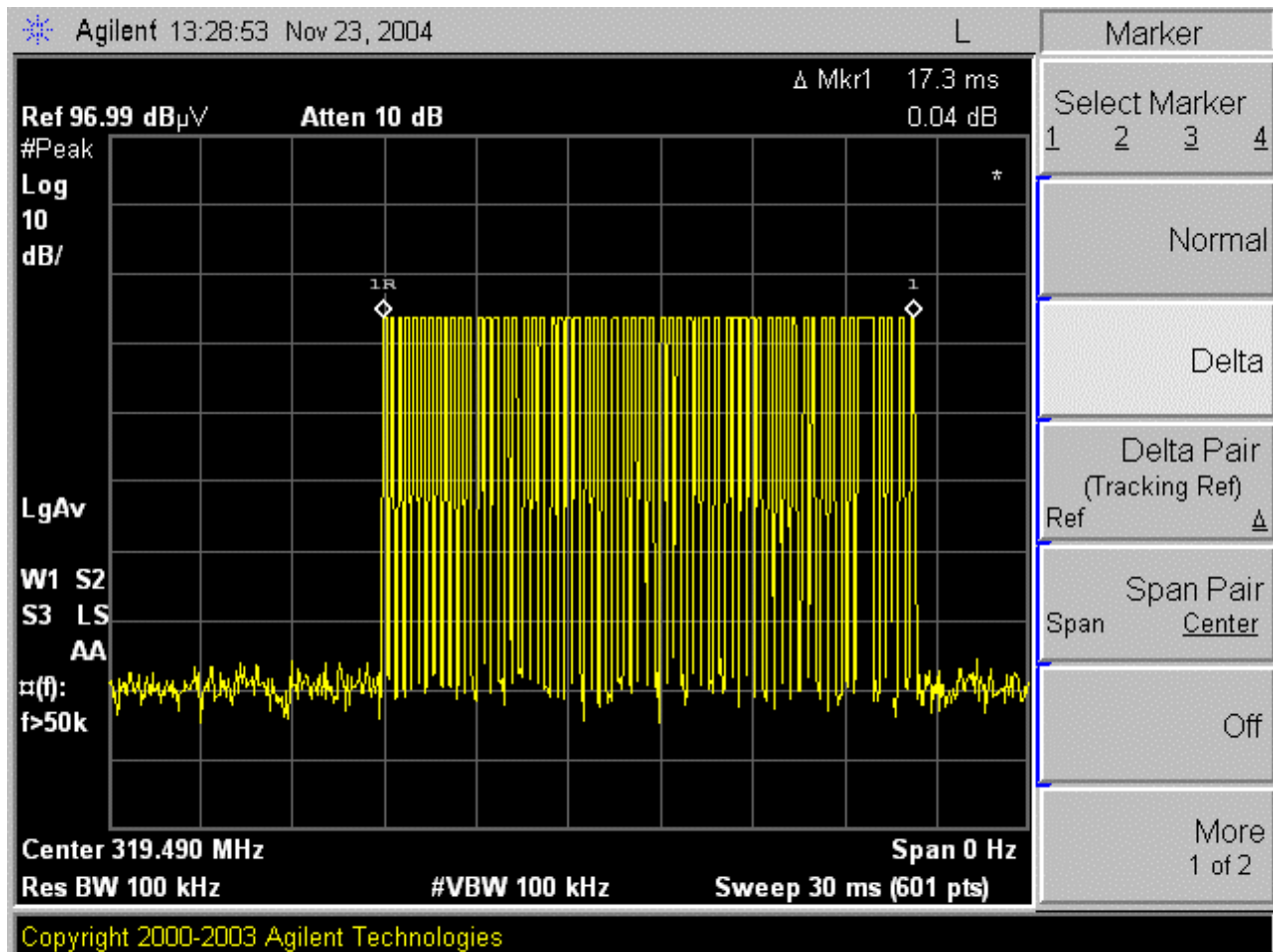
Duty Cycle =  $((1 \times 0.5) + (58 \times 0.1333))/100 = 0.0823 = 8.23\%$

For duty cycle refer to plot #1, 2, 3,4

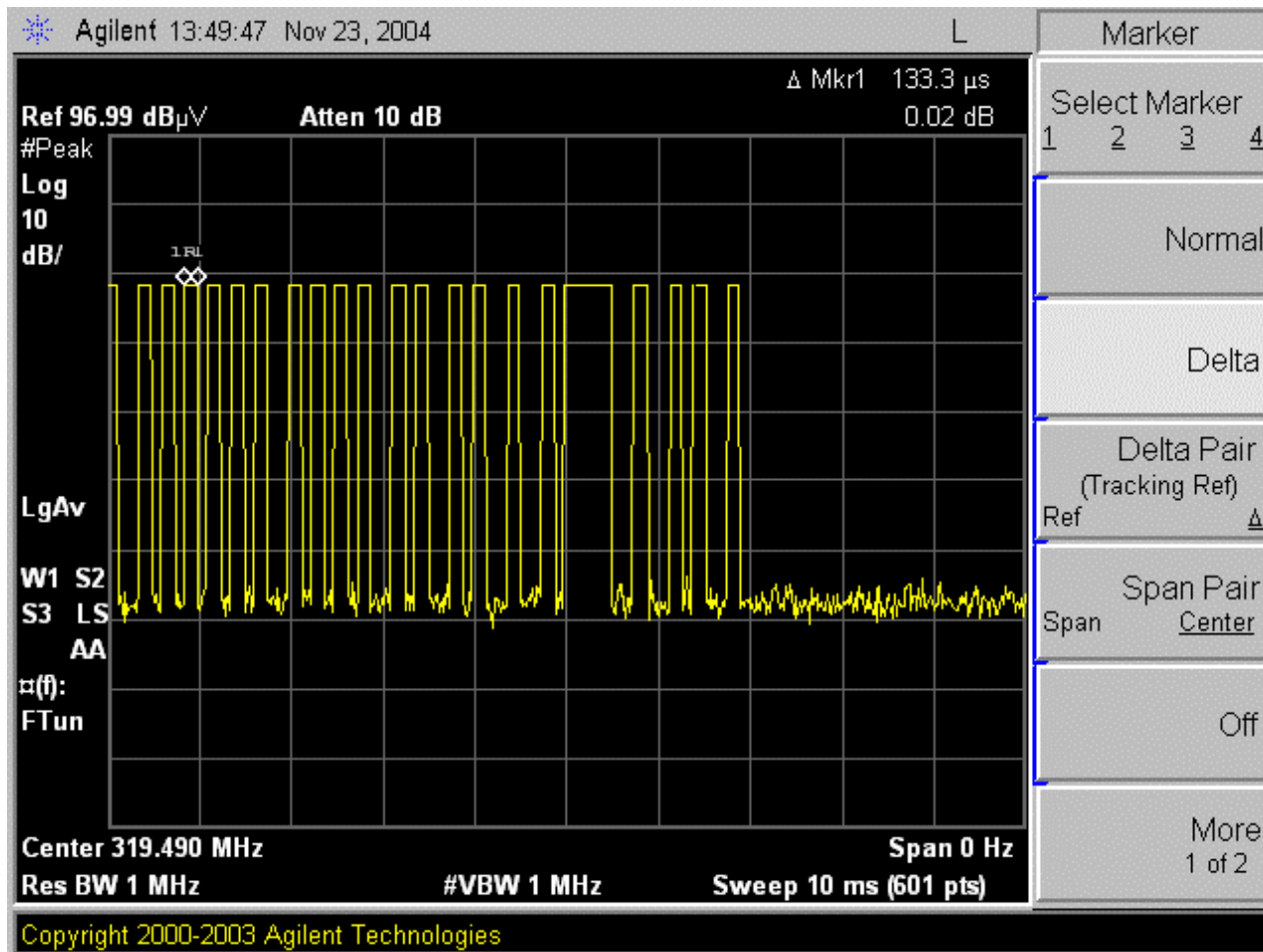
DUTY CYCLE 1



## DUTY CYCLE 2

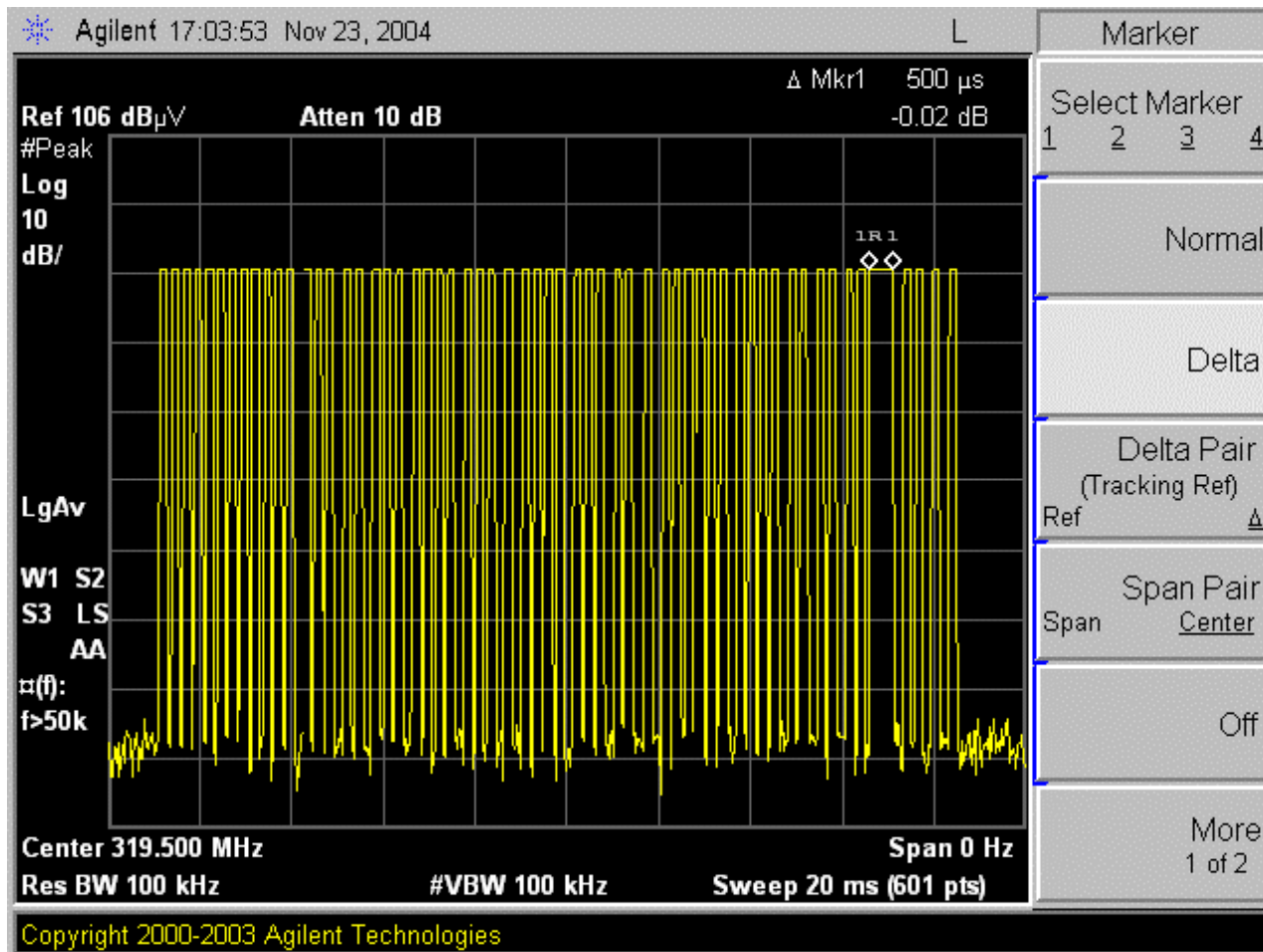


### DUTY CYCLE 3





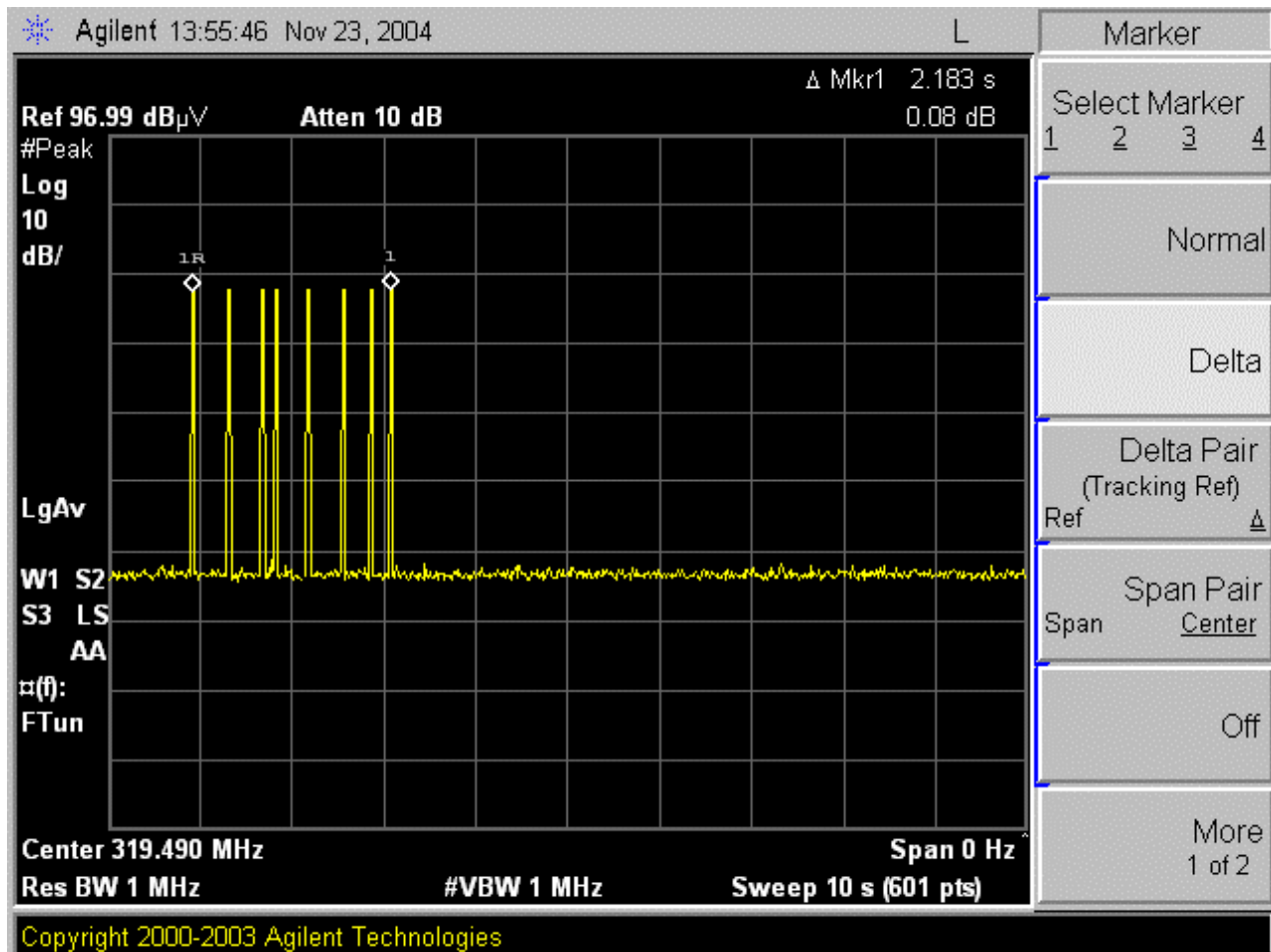
DUTY CYCLE 4



## 12.2 LESS THAN 5 SECOND PLOT

Per FCC 15.231

- (a) (1) a manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.
- (a) (2) a transmitter activated automatically shall cease transmission within 5 seconds after activation.

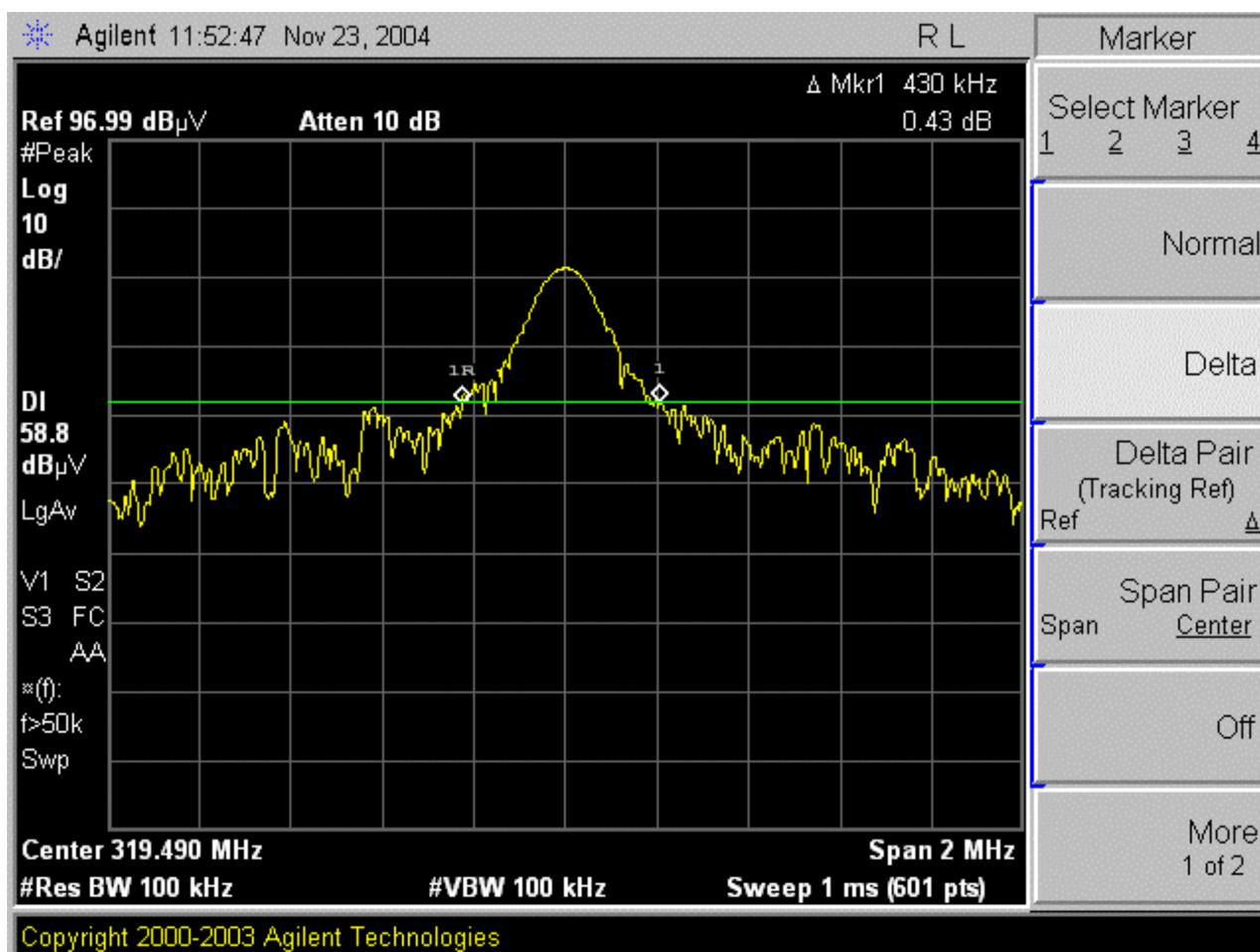


## 12.3 EMISSION BANDWIDTH

The bandwidth of the emissions were investigated per 15.231(c)

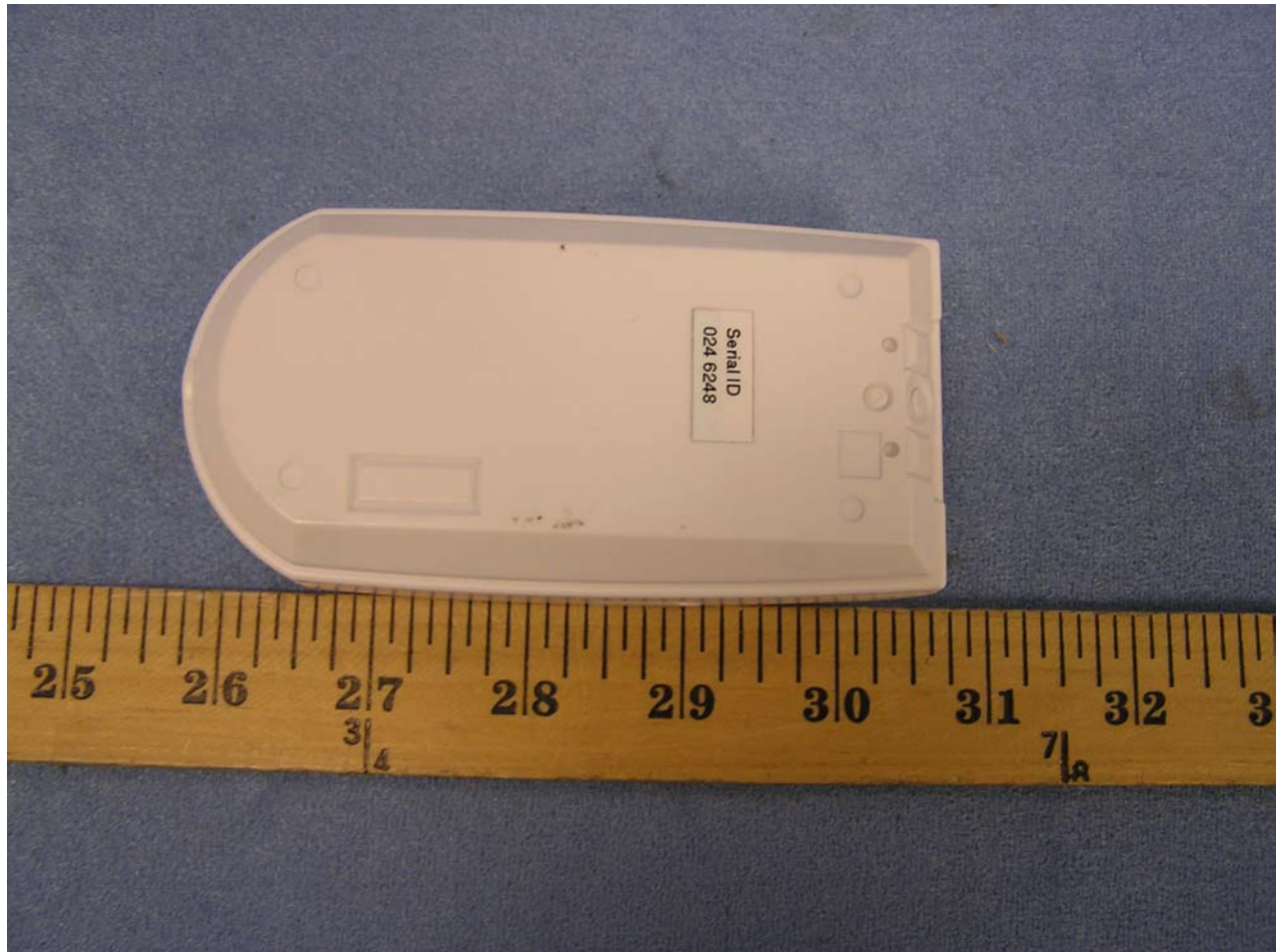
Center Frequency	Measured	Limits
<b>319.5MHz</b>	<b>430 KHz</b> (Refer to plot)	<b>319.5 x 0.25%= 799KHz</b>

### EMISSION BANDWIDTH

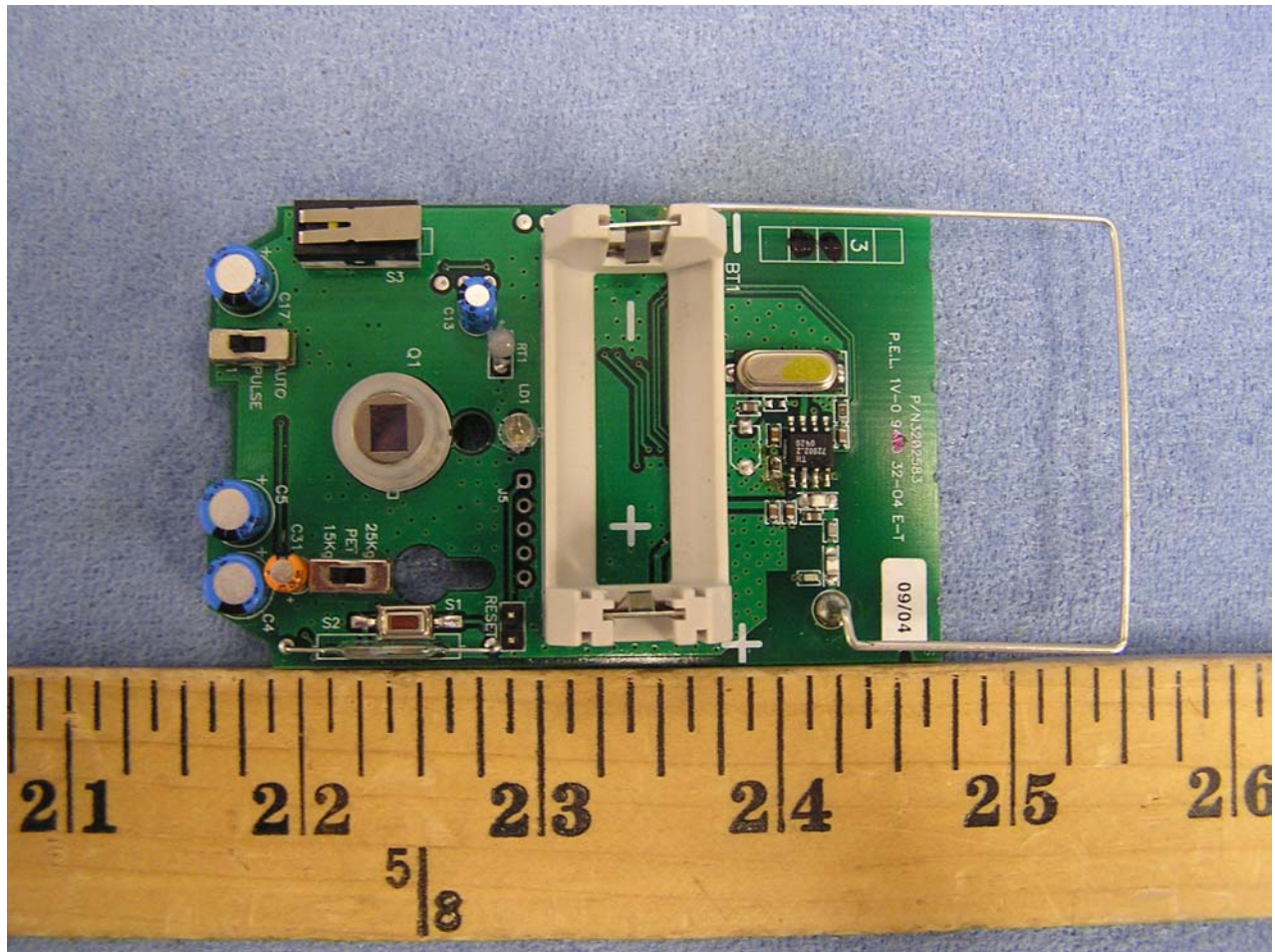


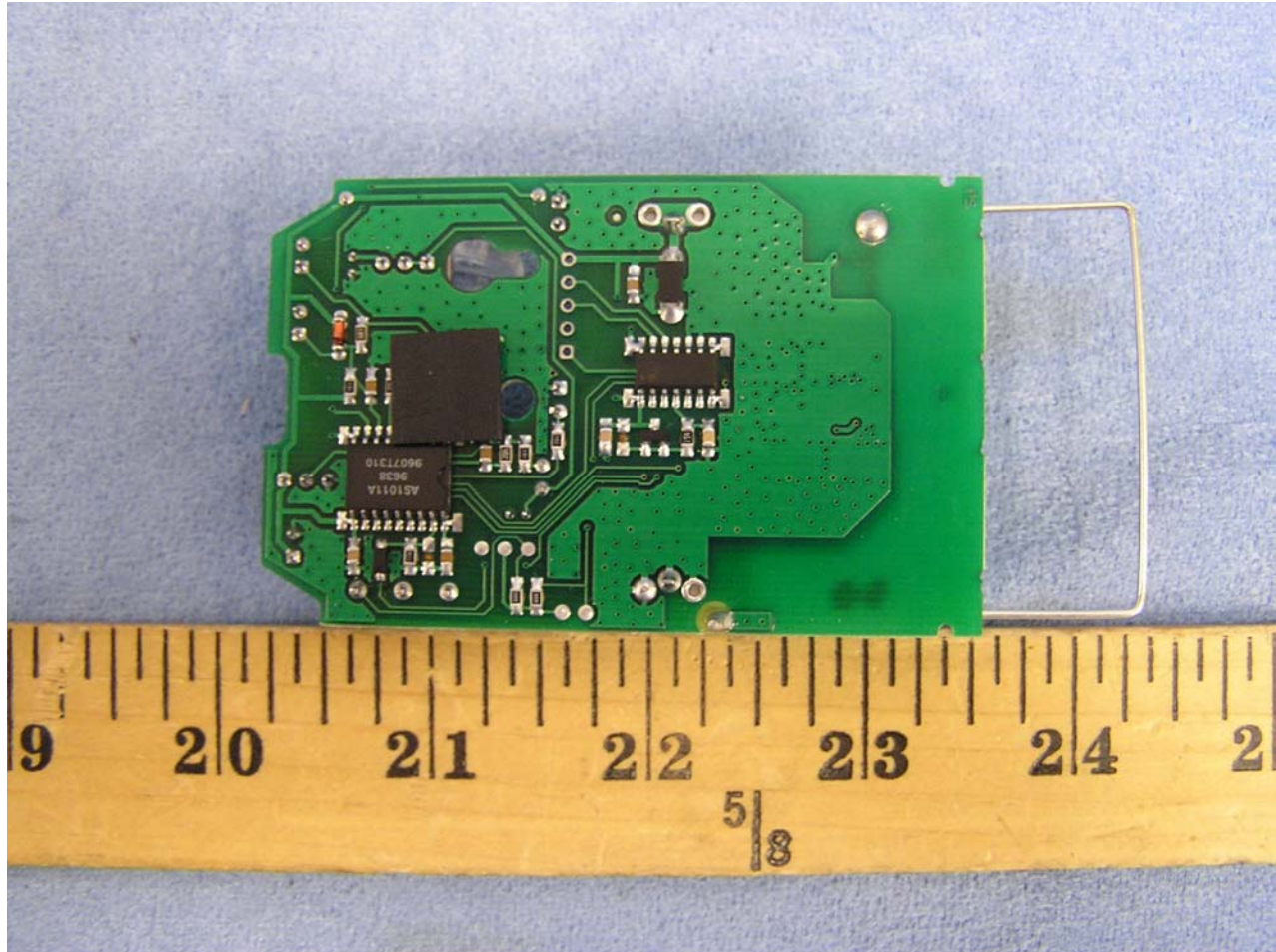
### 13. EUT PHOTOGRAPHS











**END OF REPORT**