

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
CERTIFICATION TO FCC PART 15 REQUIREMENTS**

*for*

**INTENTIONAL RADIATOR**

**27 MHz RADIO CONTROL TRANSMITTER**

**MODEL NO: 97576-27T**

**BRAND NAME: TYCO R/C STUNT PACK TX**

**FCC ID NO: APB97576-01A2T**

**REPORT NO: 01U0946-2**

**ISSUE DATE: AUGUST 31, 2001**

*Prepared for*

**MATTEL MT. LAUREL  
6000 MID ATLANTIC DRIVE  
MOUNT LAUREL, NJ 08054  
USA**

*Prepared by*

**COMPLIANCE ENGINEERING SERVICES, INC.**

*d.b.a.*

**COMPLIANCE CERTIFICATION SERVICES**

**561F MONTEREY ROAD  
MORGAN HILL, CA 95037, USA  
TEL: (408) 463-0885  
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**1. VERIFICATION OF COMPLIANCE**

COMPANY NAME : MATTEL MOUNT LAUREL  
6000 MIDATLANTIC DRIVE  
MOUNT LAUREL, NJ 08054  
USA

CONTACT PERSON : FRANK WINKLER/ SENIOR PROJECT ENGINEER

TELEPHONE NO. : 856-840-1259

EUT DESCRIPTION : 27 MHz RADIO CONTROL TRANSMITTER

MODEL NAME/NUMBER : 97576-27T

BRAND NAME : TYCO R/C – STUNT PACK TX

SERIAL NUMBER : N/A

FCC ID : APB97576-01A2T

DATE TESTED : AUGUST 30, 2001

REPORT NUMBER : 01U0946-2

TYPE OF EQUIPMENT	RADIO CONTROL
EQUIPMENT TYPE	27 MHz TRANSMITTER
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15.227

The above equipment was tested by Compliance Engineering Services, Inc. for compliance with the requirements set forth in CFR 47, PART 15. This said equipment in the configuration described in this report shows that maximum emission levels emanating from equipment are within the compliance requirements. **Warning** : This document reports conditions under which testing was conducted and results of tests performed. 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 will constitute fraud and shall nullify the document.

Tested By:

Approved &amp; Released For CCS By:

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MIKE ZHU  
SENIOR EMC ENGINEER  
COMPLIANCE CERTIFICATION SERVICES

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STEVE CHENG  
EMC ENGINEERING MANAGER  
COMPLIANCE CERTIFICATION SERVICES

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PAGE NO: 3

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561F MONTEREY ROAD, MORGAN HILL, CA 95037, USA

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## 2. PRODUCT DESCRIPTION

CHASSIS TYPE	PLASTIC
Fundamental Frequency	27.145 MHz
Power Source	ONE 9 VOLT BATTERY
CHIPSET BRAND AND PART NO	MATTEL 97576-27T/TX
Transmitting Time	CONTINUOUS
Type of antenna	PERMANENTLY ATTACHED
Local Osc.	27.145MHz

## 3. TEST FACILITY

The 3/10/30 meter open area test site and conducted measurement facility used to collect the radiated data is located at 561F Monterey Road, Morgan Hill, California, U.S.A. A detailed description of the test facility was submitted to the Commission on May 27,1994.

## 4. MEASUREMENT STANDARDS

The site is constructed and calibrated in conformance with the requirements of ANSI C63.4/1992.

## 5. TEST METHODOLOGY

For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 KHz, up to at least the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. (CFR 47 Section 15.33)

## 6. MEASUREMENT EQUIPMENT USED

TEST EQUIPMENTS LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
<i>Pre-Amplifier, 25 dB</i>	<i>HP0.1 - 1300MHz</i>	<i>8447D (P5)</i>	<i>2944A06550</i>	<i>9/19/01</i>
<i>Antenna, Bicon</i>	<i>Eaton30 - 200MHz</i>	<i>94455-1</i>	<i>1214</i>	<i>8/10/02</i>
<i>Spectrum Display</i>	<i>HP</i>	<i>85662A</i>	<i>2816A16696</i>	<i>5/4/02</i>
<i>Quasi Peak Adapter</i>	<i>HP9K - 1GHz</i>	<i>85650A</i>	<i>2811A01155</i>	<i>5/4/02</i>
<i>Active Loop Antenna, (10K - 30MHz)</i>	<i>EMCO</i>	<i>6502</i>	<i>9202-2722</i>	<i>2/18/02</i>
<i>Spectrum Analyzer</i>	<i>HP</i>	<i>8568B</i>	<i>2841A04227</i>	<i>1/18/02</i>

## 7. POWERLINE RFI LIMIT

CONNECTED TO AC POWER LINE	SECTION 15.207
CARRIER CURRENT SYSTEM IN THE FREQUENCY RANGE OF 450 KHz TO 30MHz	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
OPERATION WITHIN THE BAND 26.96 - 27.28 MHZ	SECTION 15.227

## 9. SYSTEM TEST CONFIGURATION

The EUT was configured for testing in a typical fashion (as a customer would normally use it).



Radiated Open Site Test Set-up

## 10. EQUIPMENT MODIFICATION

To achieve compliance to FCC Section 15.227 technical limits, the following change(s) were made during compliance testing:

No changes were required in order to achieve compliance to FCC Section 15.227.

## 11. TEST PROCEDURE AND RESULT

Powerline RFI Limits	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 15.227	X

### 11.1 Radiated Emission Test Procedure and Result

1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3 meter 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.
3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The readings so obtained are recorded in the data listed below.



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 #:** 01U0946-2  
**Report #:** 010830C1  
**Date & Time:** 08/30/01 9:41 AM  
**Test Engr:** MIKE ZHU

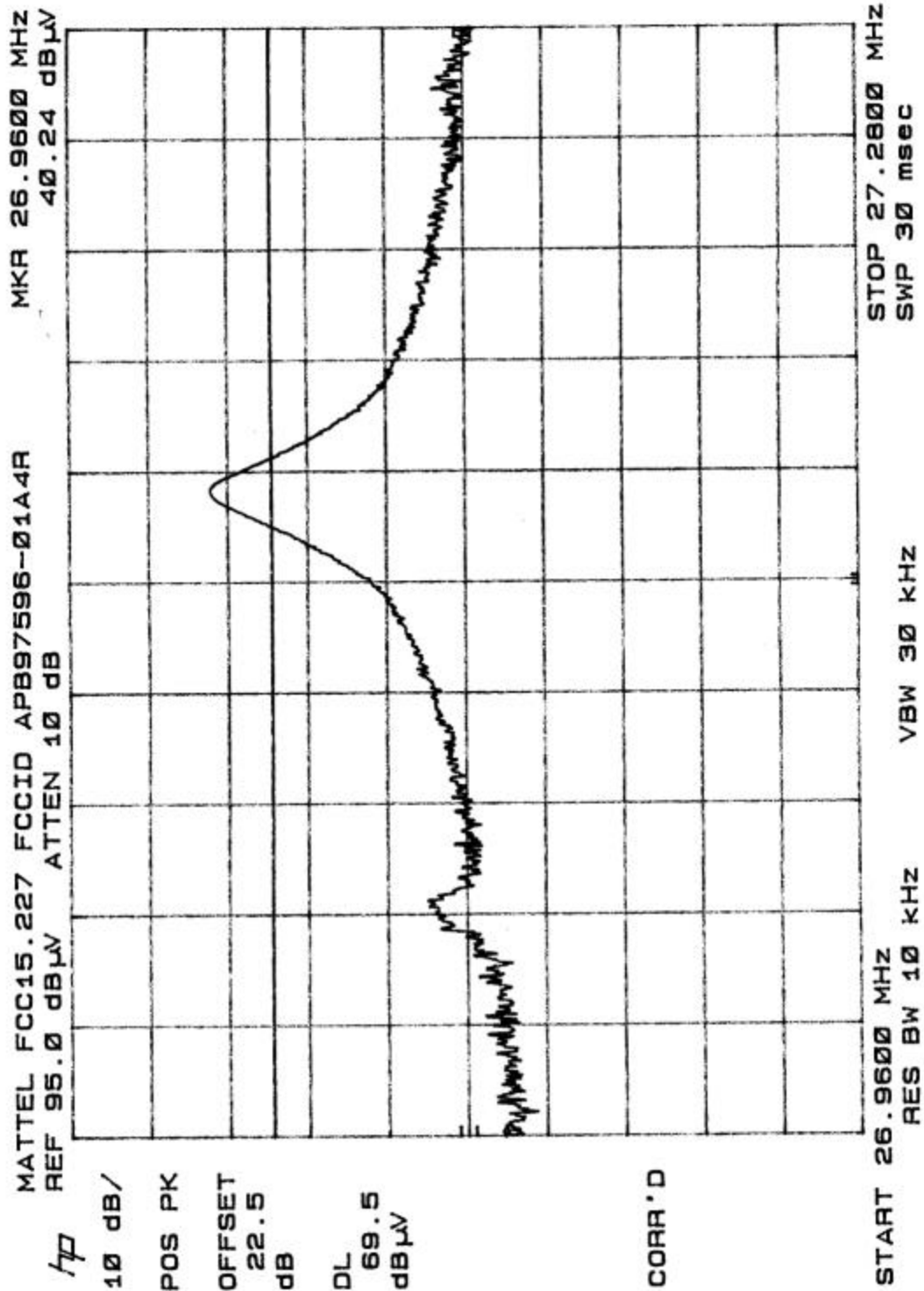
**Company:** MATTEL MOUNT LAUREL FW  
**EUT Description:** 27MHZ RADIO CONTROL TRANSMITTER,M/N:97576-27T  
**Test Configuration :** EUT ONLY  
**Type of Test:** FCC 15.227 AND 15.209  
**Mode of Operation:** Tx MODE

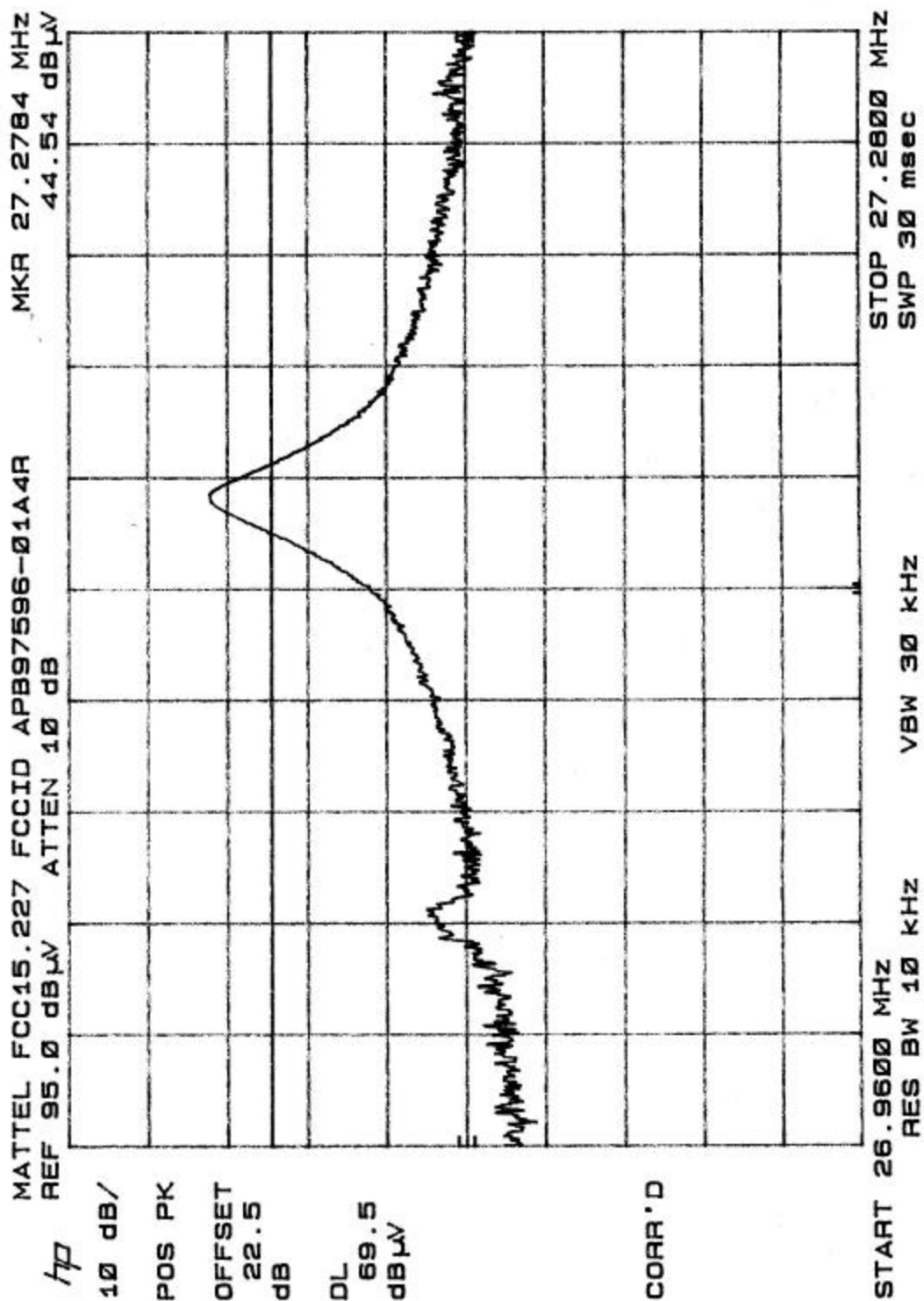
☐ A-Site ☐ B-Site ☒ C-Site ☐ F-Site

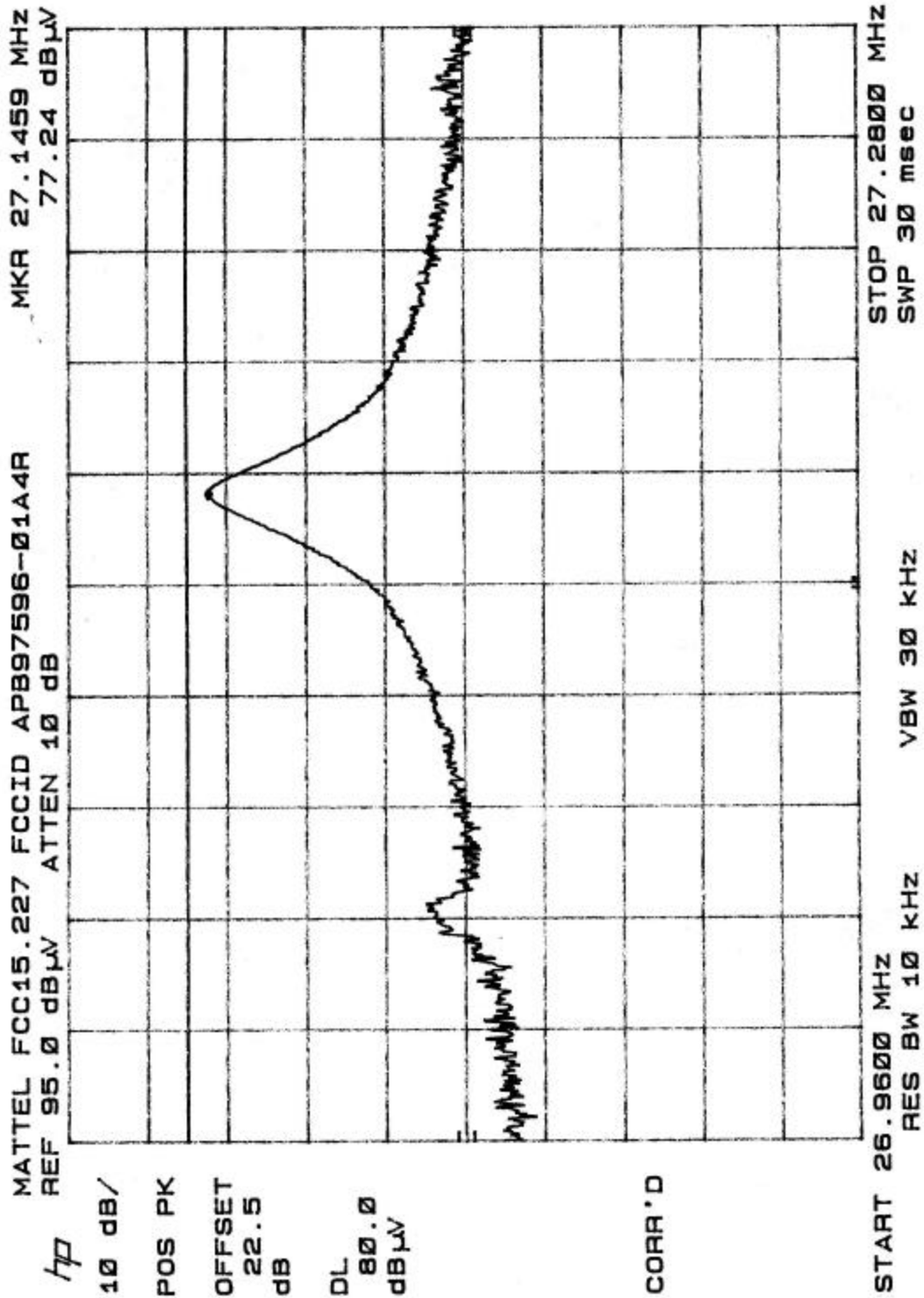
Freq. (MHz)	Reading (dBuV)	AF (dB)	Closs (dB)	Pre-amp (dB)	Level (dBuV/m)	Limit FCC B	Margin (dB)	Pol (H/V)	Az (Deg)	Height (Meter)	Mark (P/Q/A)
Right Button: Z POSITION:											
27.14	64.70	11.77	0.77		77.24	80.00	-2.76	3mV	90.00	1.00	P
Y POSITION:											
27.14	40.90	11.77	0.77		53.44	80.00	-26.56	3mV	90.00	1.00	P
27.14	50.50	13.69	0.77		64.96	80.00	-15.04	3mH	30.00	1.00	P
X POSITION:											
27.14	49.70	13.69	0.77		64.16	80.00	-15.84	3mH	30.00	1.00	P
27.14	55.80	11.77	0.77		68.34	80.00	-11.66	3mV	90.00	1.00	P
Z POSITION:											
27.14	50.30	13.69	0.77		64.76	80.00	-15.24	3mH	30.00	1.00	P
Left Button: Z POSITION:											
27.14	63.90	11.77	0.77		76.44	80.00	-3.56	3mV	60.00	1.00	P
27.14	48.30	13.69	0.77		62.76	80.00	-17.24	3mH	90.00	1.00	P
Y POSITION:											
27.14	49.00	13.69	0.77		63.46	80.00	-16.54	3mH	90.00	1.00	P
27.14	45.80	11.77	0.77		58.34	80.00	-21.66	3mV	50.00	1.00	P
X POSITION:											
27.14	52.80	11.77	0.77		65.34	80.00	-14.66	3mV	50.00	1.00	P
27.14	49.40	13.69	0.77		63.86	80.00	-16.14	3mH	90.00	1.00	P
Harmonics of 27.14Mhz:											
Right Button: X POSITION:											
54.28	46.70	8.92	1.02	27.26	29.39	40.00	-10.61	3mV	30.00	1.00	P
81.42	42.30	9.02	1.22	27.22	25.31	40.00	-14.69	3mV	30.00	1.00	P
108.56	41.50	10.75	1.47	27.12	26.60	43.50	-16.90	3mV	30.00	1.00	P
135.70	42.30	14.14	1.66	27.02	31.07	43.50	-12.43	3mV	30.00	1.00	P
189.90	39.60	16.64	1.93	26.80	31.37	43.50	-12.13	3mV	30.00	1.00	P



Y POSITION:											
54.28	47.80	8.92	1.02	27.26	30.49	40.00	-9.51	3mV	60.00	1.00	P
81.42	43.70	9.02	1.22	27.22	26.71	40.00	-13.29	3mV	60.00	1.00	P
108.56	41.60	10.75	1.47	27.12	26.70	43.50	-16.80	3mV	60.00	1.00	P
135.70	39.60	14.14	1.66	27.02	28.37	43.50	-15.13	3mV	60.00	1.00	P
189.90	39.80	16.64	1.93	26.80	31.57	43.50	-11.93	3mV	60.00	1.00	P
Z POSITION:											
54.28	45.90	8.92	1.02	27.26	28.59	40.00	-11.41	3mV	60.00	1.00	P
81.42	42.20	9.02	1.22	27.22	25.21	40.00	-14.79	3mV	60.00	1.00	P
108.56	42.10	10.75	1.47	27.12	27.20	43.50	-16.30	3mV	60.00	1.00	P
135.70	39.70	14.14	1.66	27.02	28.47	43.50	-15.03	3mV	60.00	1.00	P
189.90	40.70	16.64	1.93	26.80	32.47	43.50	-11.03	3mV	60.00	1.00	P
LEFT BUTTON:											
X POSITION:											
54.28	46.30	8.92	1.02	27.26	28.99	40.00	-11.01	3mV	30.00	1.00	P
81.42	42.30	9.02	1.22	27.22	25.31	40.00	-14.69	3mV	30.00	1.00	P
108.56	42.60	10.75	1.47	27.12	27.70	43.50	-15.80	3mV	30.00	1.00	P
135.70	39.90	14.14	1.66	27.02	28.67	43.50	-14.83	3mV	30.00	1.00	P
189.90	38.70	16.64	1.93	26.80	30.47	43.50	-13.03	3mV	30.00	1.00	P
Z POSITION:											
54.28	44.90	8.92	1.02	27.26	27.59	40.00	-12.41	3mV	60.00	1.00	P
81.42	41.10	9.02	1.22	27.22	24.11	40.00	-15.89	3mV	60.00	1.00	P
108.56	42.20	10.75	1.47	27.12	27.30	43.50	-16.20	3mV	60.00	1.00	P
135.70	38.60	14.14	1.66	27.02	27.37	43.50	-16.13	3mV	60.00	1.00	P
189.90	38.50	16.64	1.93	26.80	30.27	43.50	-13.23	3mV	60.00	1.00	P
54.28	42.60	10.09	1.02	27.26	26.45	40.00	-13.55	3mH	50.00	2.00	P
81.42	39.70	8.79	1.22	27.22	22.48	40.00	-17.52	3mH	50.00	2.00	P
108.56	42.10	11.13	1.47	27.12	27.58	43.50	-15.92	3mH	50.00	2.00	P
135.70	39.40	14.42	1.66	27.02	28.45	43.50	-15.05	3mH	50.00	2.00	P
189.90	42.20	16.07	1.93	26.80	33.40	43.50	-10.10	3mH	50.00	2.00	P
Y POSITION:											
54.28	41.80	10.09	1.02	27.26	25.65	40.00	-14.35	3mH	60.00	2.00	P
81.42	40.20	8.79	1.22	27.22	22.98	40.00	-17.02	3mH	60.00	2.00	P
108.56	41.50	11.13	1.47	27.12	26.98	43.50	-16.52	3mH	60.00	2.00	P
135.70	38.90	14.42	1.66	27.02	27.95	43.50	-15.55	3mH	60.00	2.00	P
189.90	42.40	16.07	1.93	26.80	33.60	43.50	-9.90	3mH	60.00	2.00	P
X POSITION:											
54.28	40.90	10.09	1.02	27.26	24.75	40.00	-15.25	3mH	50.00	2.00	P
81.42	40.70	8.79	1.22	27.22	23.48	40.00	-16.52	3mH	50.00	2.00	P
108.56	41.20	11.13	1.47	27.12	26.68	43.50	-16.82	3mH	50.00	3.00	P
135.70	39.70	14.42	1.66	27.02	28.75	43.50	-14.75	3mH	50.00	3.00	P
Total data #.51											
V.2c											

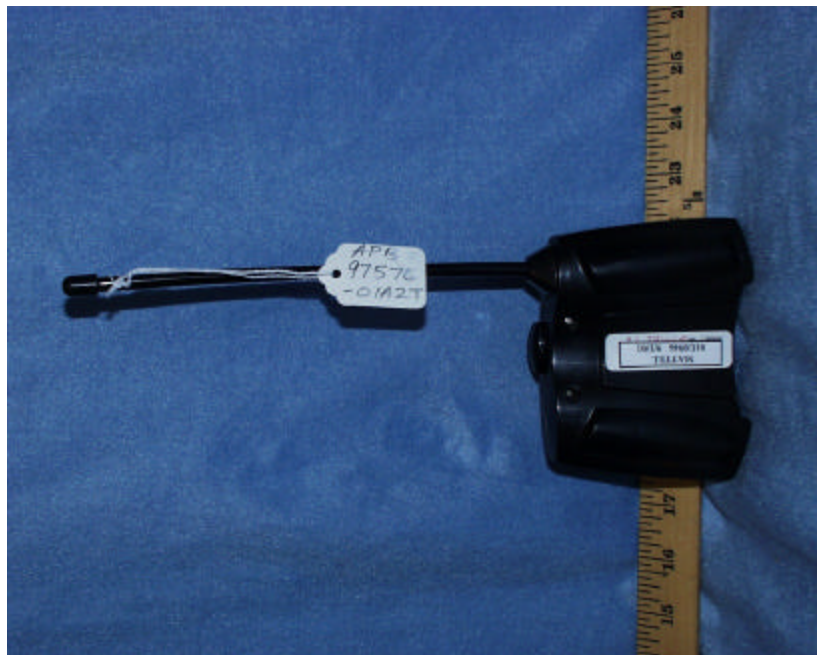




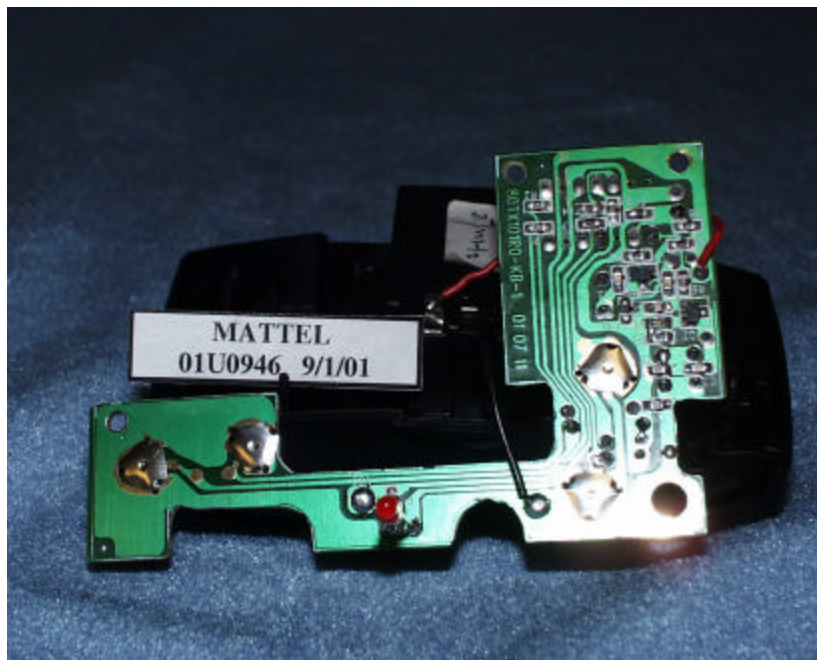
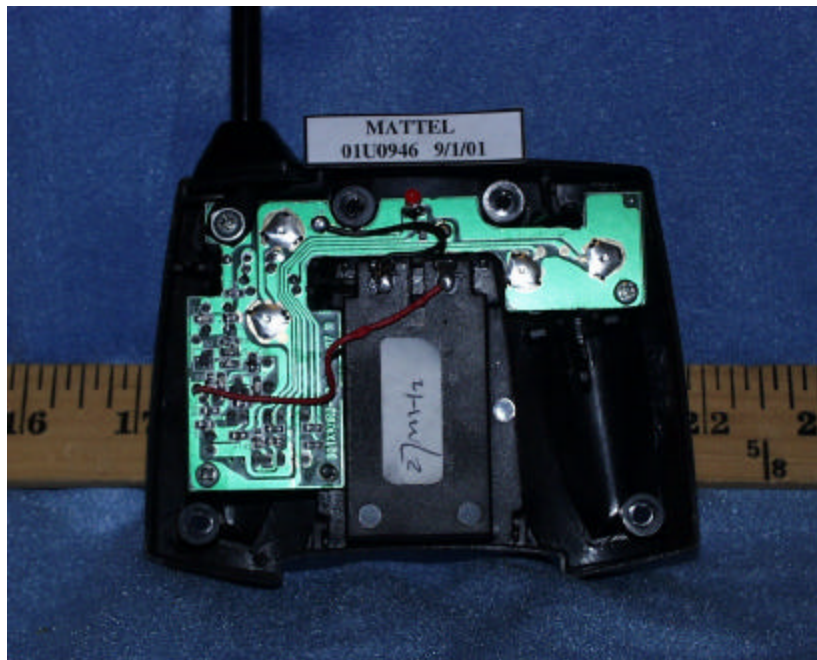


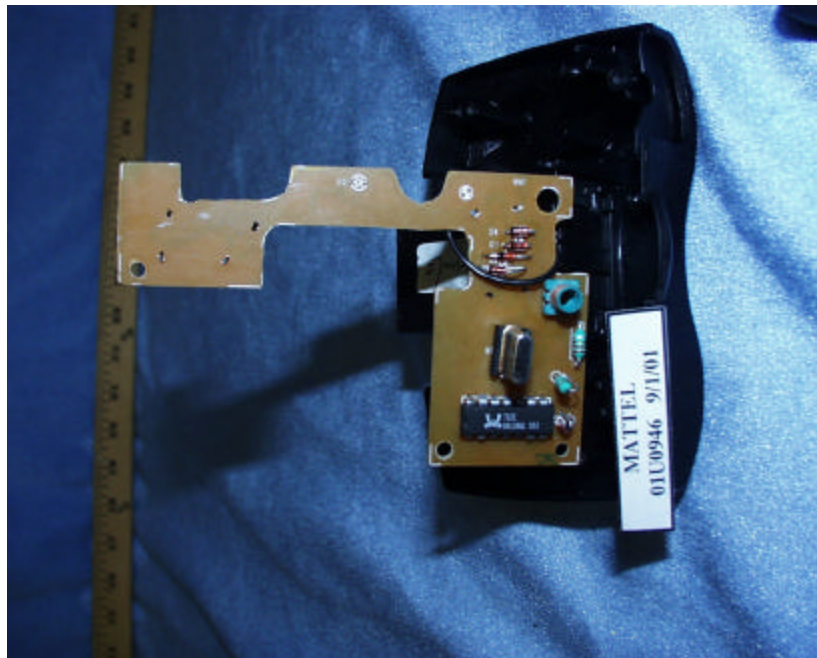
## 12. Appendix

### External & Internal Photos









**Schematics**

Please refer to attached sheets.

**Block Diagram**

Please refer to attached sheets.

**User Manual**

Please refer to attached sheets.