ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
CERTIFICATION TO FCC PART 15 REQUIREMENTS

for

INTENTIONAL RADIATOR

27 MHz RADIO CONTROLTRANSMITTER

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 MIDATLANTIC 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
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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:

MIKE ZHU
SENIOR EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

Approved & Released For CCS By:

STEVE CHENG
EMC ENGINEERING MANAGER
COMPLIANCE CERTIFICATION SERVICES

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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)

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6. MEASUREMENT EQUIPMENT USED

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

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

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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

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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.

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UL, CSA, TUV, BSMI, DHHS, NVLAP
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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 | 6 Worst Data | Descending

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

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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											

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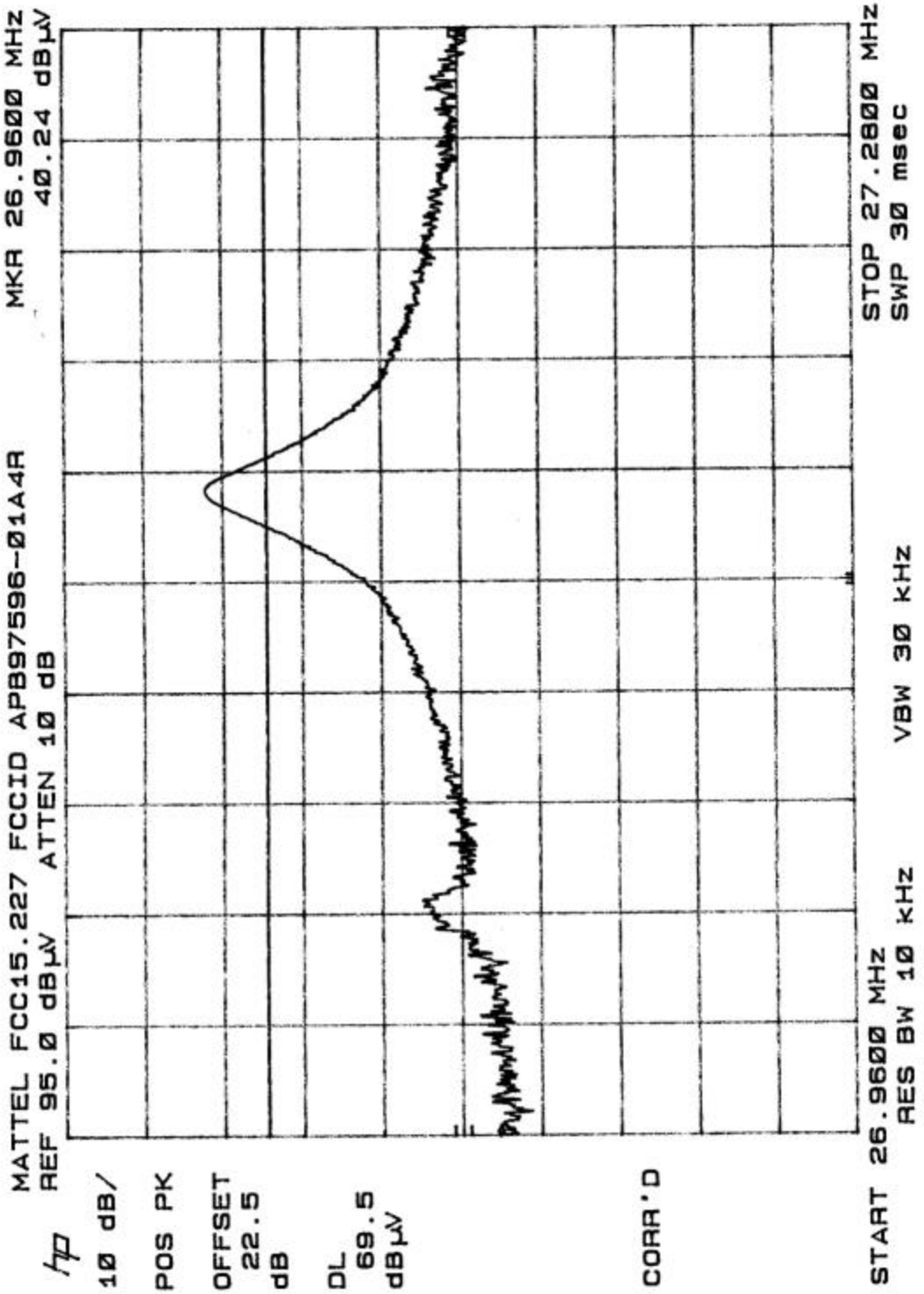

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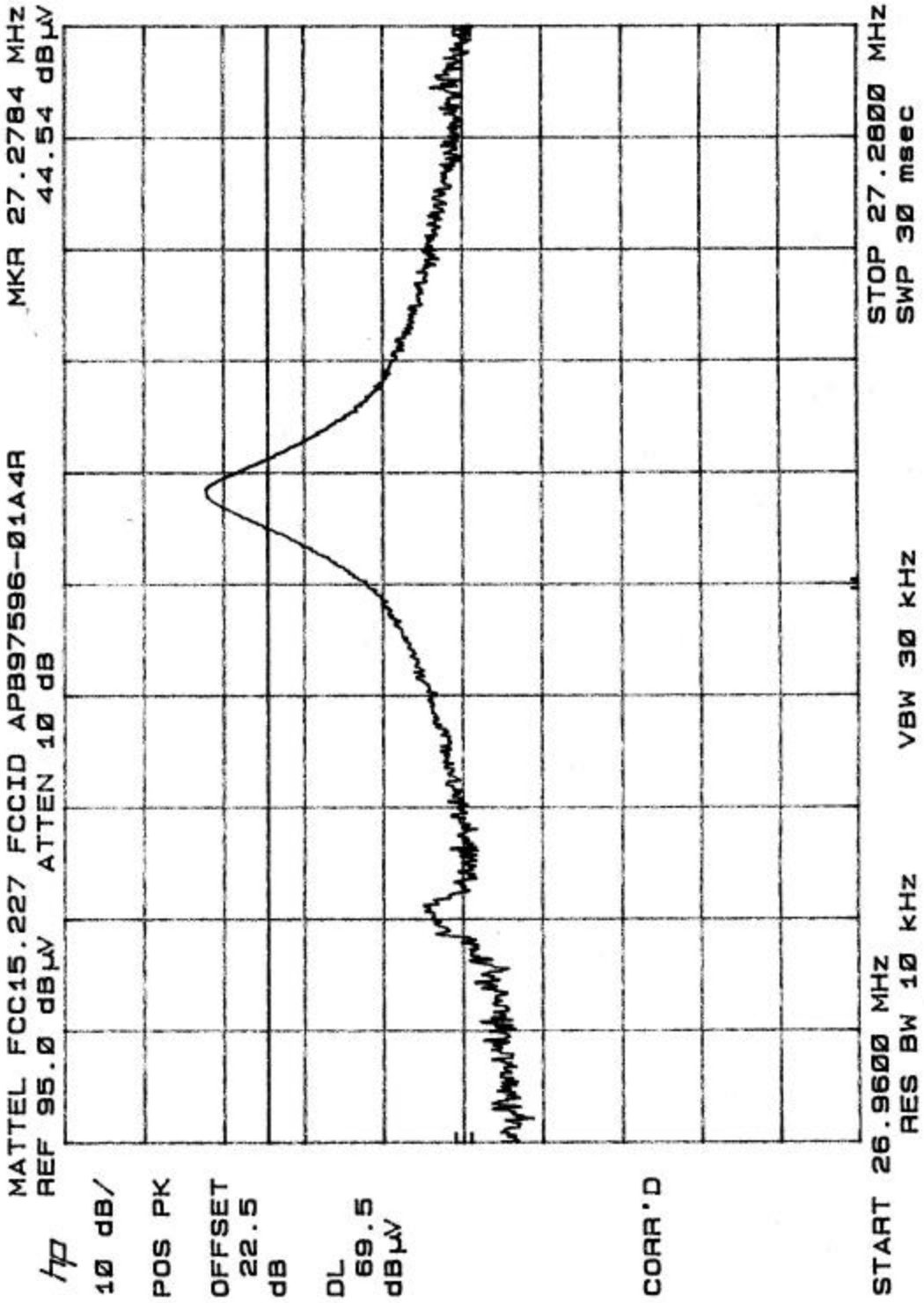

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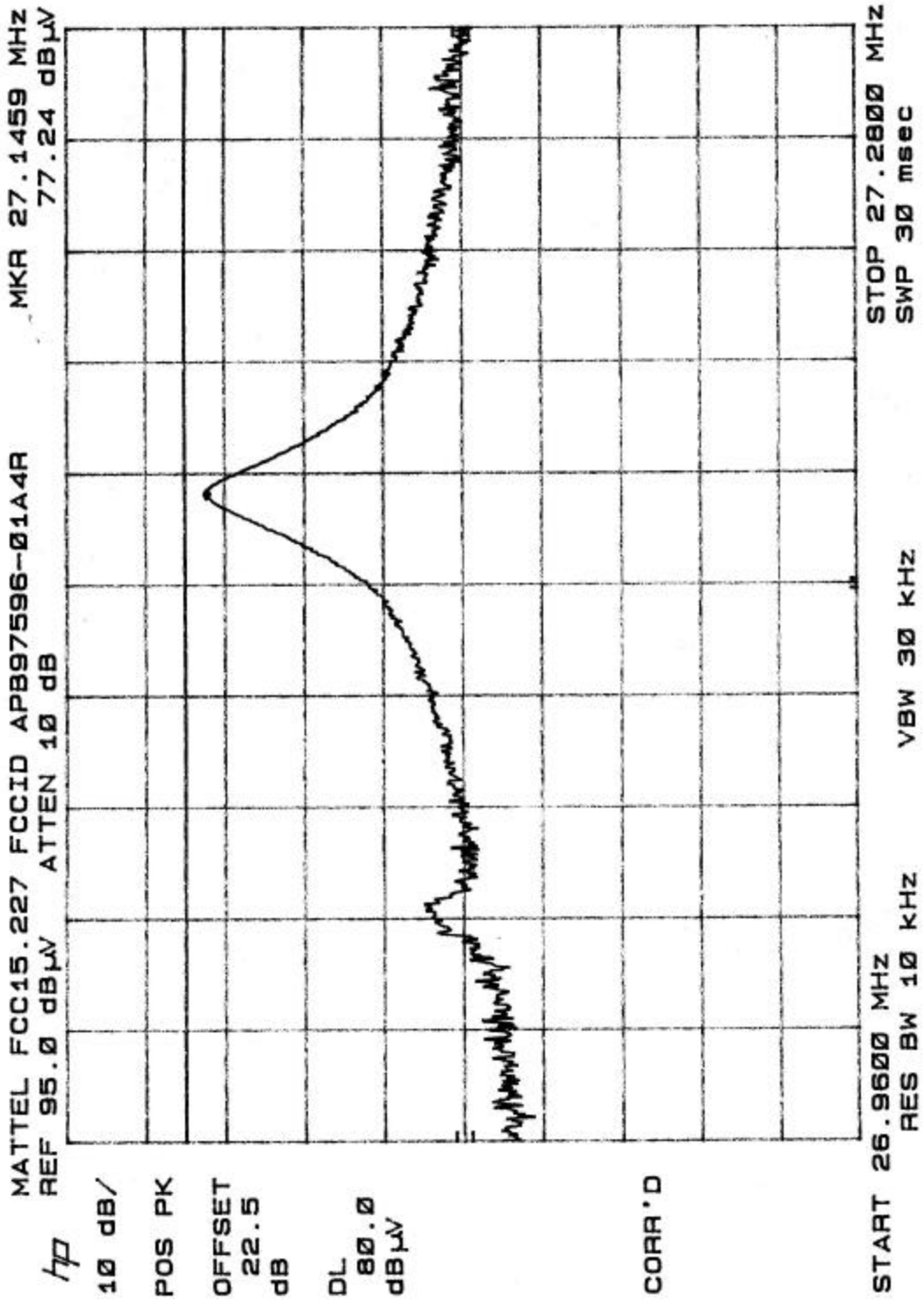

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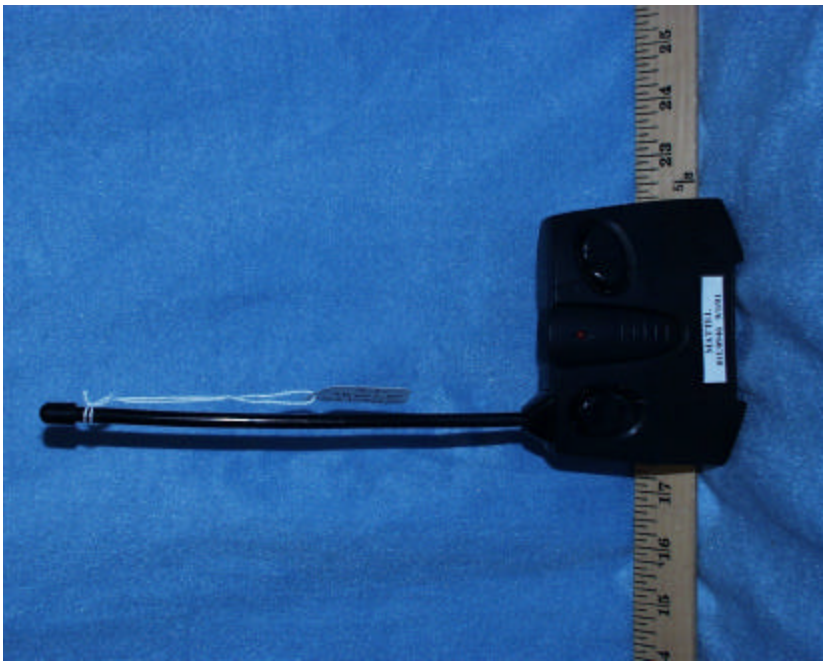
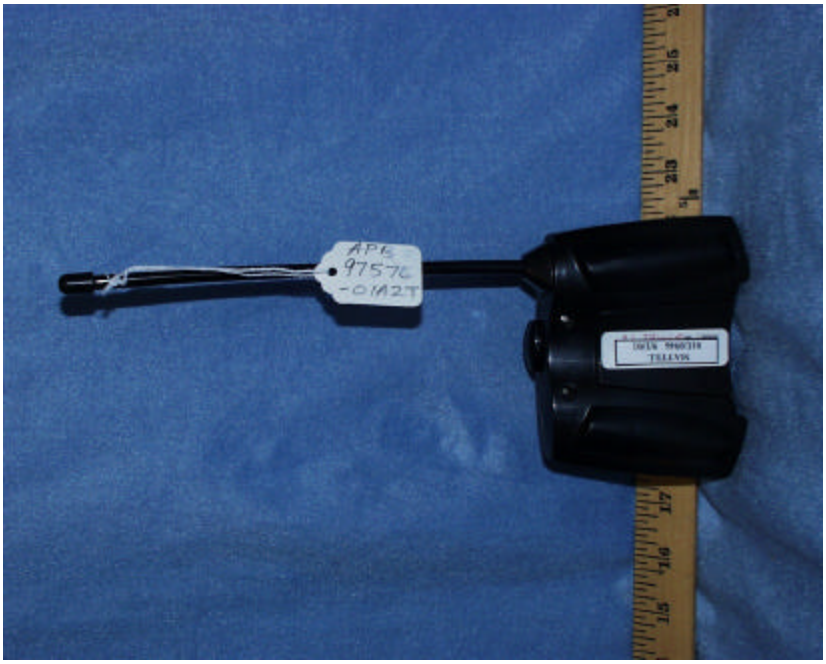
12. Appendix

External & Internal Photos





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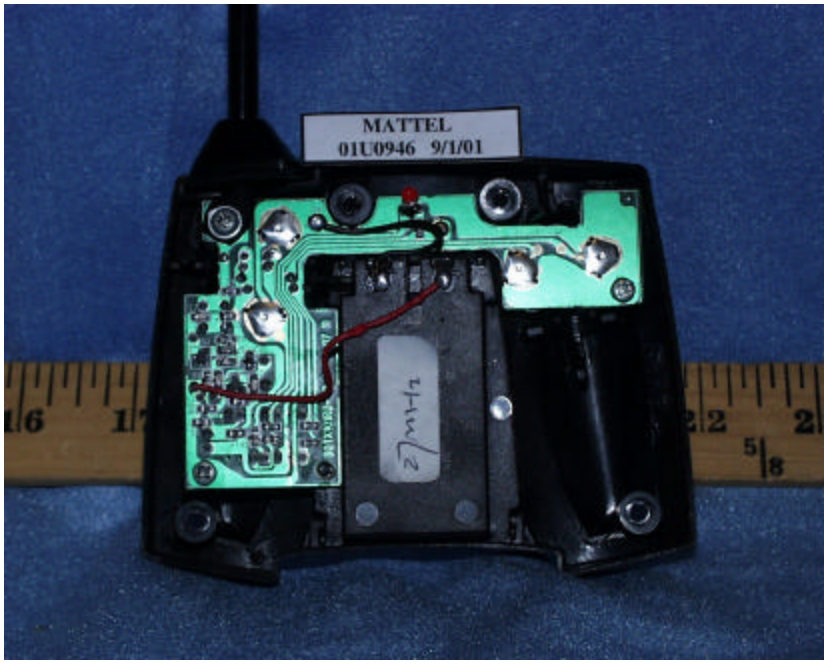

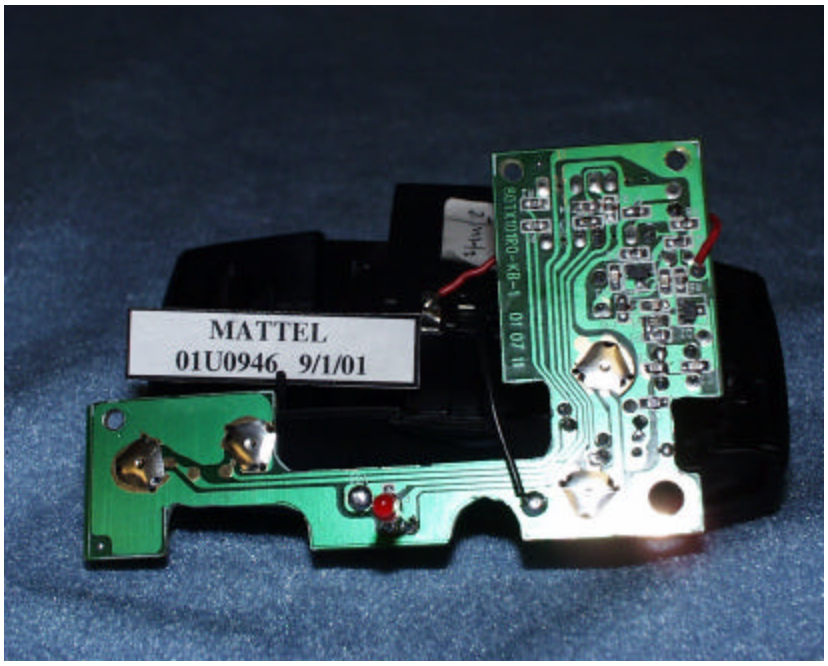

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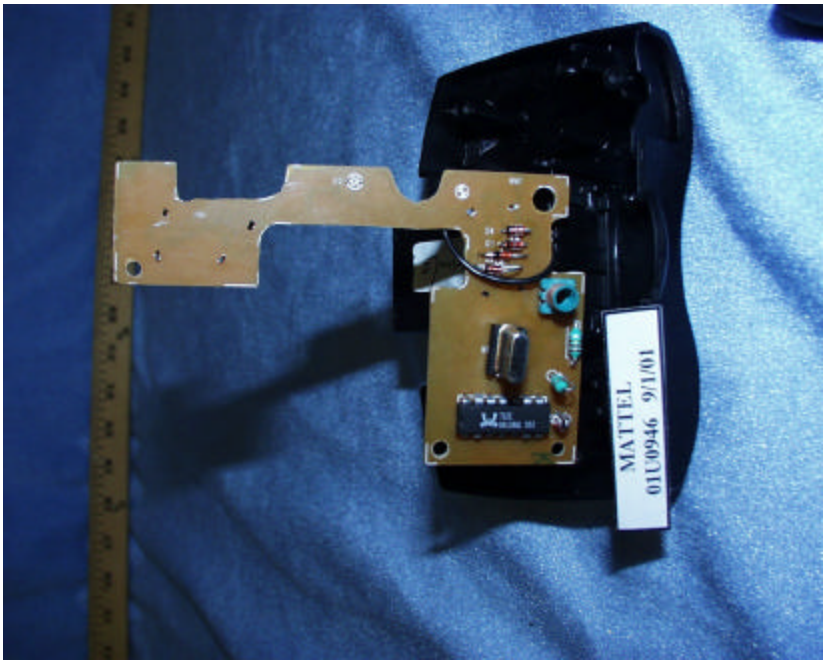

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Schematics

Please refer to attached sheets.

Block Diagram

Please refer to attached sheets.

User Manual

Please refer to attached sheets.

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