



**EXHIBIT 5
TECHNICAL TEST REPORT**

*FCC PART 15, SUBPART C
SECTION 15.209
TEST REPORT*

for

**RADIO CONTROL PITCHING
MACHINE TRANSMITTER**

Model: PITCH MACHINE

Prepared for

SPORT FUN, INC.
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LOS ANGELES, CALIFORNIA 90039

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Approved by: Scott McCutchan

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DATE: APRIL 16, 1998

	REPORT BODY	APPENDICES			TOTAL
		A	B	C	
PAGES	13	4	2	2	21

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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedure described in the test specification given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced in any form unless done so in full.

This report must not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Device Tested: Radio Control Pitching Machine Transmitter
Model: Pitch Machine
S/N: Prototype
FCC ID: NU8-939001

Modifications: The EUT was not modified during the testing.

Manufacturer: Sport Fun, Inc.
4621 Sperry Street
Los Angeles, California 90039

Test Date: April 7, 1998

Test Specifications: EMI requirements
FCC Title 47, Part 15, Subpart C section 15.209

Test Procedure: ANSI C63.4: 1992

Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Radiated RF Emissions, 10 kHz – 320 kHz.	Complies with the limits of section 15.209 of FCC Title 47, Part 15, Subpart C.



1. **PURPOSE**

This document is a qualification test report based on the Electromagnetic Interference (EMI) test performed on the Radio Control Pitching Machine Transmitter Model: Pitch Machine. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 1992. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the limits of section 15.209 of FCC Title 47, Part 15, Subpart C.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Sport Fun, Inc.

James Shin

Compatible Electronics, Inc.

Arnold Gaffud	Test Engineer
Brian Voegelé	Test Engineer
Scott McCutchan	Lab Manager

2.4 Date Test Sample was Received

The test sample was received on April 1, 1998.

2.5 Disposition of the Test Sample

The test sample was returned to Sport Fun, Inc. on April 16, 1998.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
NVLAP	National Voluntary Laboratory Accreditation Program



3.

APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI Test Report.

SPEC	TITLE
FCC Title 47, Part 15 1996	FCC Rules - Radio frequency devices (including digital devices).
ANSI C63.4 1992	Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz.

**4. DESCRIPTION OF THE TEST SAMPLE****4.1 Description of Test Configuration - EMI**

The Radio Control Pitching Machine Transmitter Model: Pitch Machine (EUT) was taped to the outside of a plastic baseball bat. The EUT was powered by two AA size 1.5 volt batteries. The bat and EUT were placed on the wooden table so that the EUT was in the center of the turntable.

Operating Conditions of the EUT

The EUT was investigated for emissions in the following operating mode:

1. The EUT was continuously transmitting a CW RF signal at 32.738 kHz.

4.1.1 Cable Construction and Termination

The EUT has no external data or power cables connected to it.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT**5.1 EUT and Accessory List**

EQUIPMENT TYPE	MANU-FACTURER	MODEL	SERIAL NUMBER	FCC ID
RADIO CONTROL PITCHING MACHINE TRANSMITTER (EUT)	SPORT FUN, INC.	PITCH MACHINE	PROTOTYPE	NU8-939001

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
Spectrum Analyzer	Hewlett Packard	8568B	2517A01420	November 18, 1997	1 Year
Active Loop Antenna	Com-Power	AL-130	25309	February 5, 1998	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650A	3303A01688	May 7, 1997	1 Year
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A



6. **TEST SITE DESCRIPTION**

6.1 **Test Facility Description**

Please refer to section 2.1 of this report for EMI test location.

6.2 **EUT Mounting, Bonding and Grounding**

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.



7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests.

7.1 RF Emissions

7.1.1 Radiated Emissions Test

The HP 8568B spectrum analyzer was used as a measuring meter along with the HP 85650A quasi-peak adapter. The spectrum analyzer was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer records the highest measured reading over all the sweeps. The HP 85650A quasi-peak adapter was used only for those readings which are marked accordingly on the data sheets. The effective measurement bandwidth used for the radiated emissions test was 200 Hz for frequencies between 10 kHz and 150 kHz, and 9 kHz for frequencies between 150 kHz and 320 kHz.

An active broadband loop antenna was used as a transducer during the measurements. The loop antenna was used from 10 kHz to 320 kHz. The frequency spans were wide (10 kHz - 150 kHz and 150 kHz - 320 kHz) during preliminary investigations. The final data was taken with a frequency span of 20 kHz. Furthermore, the frequency span was reduced during the preliminary investigations as deemed necessary.

The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 1992. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. The loop antenna was mounted so that its center was 1 meter above the ground plane. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the loop was rotated about its vertical axis in an effort to maximize the measured emissions.

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance to obtain final test data. The six highest emissions for the fundamental and harmonics are listed in Table 1.



7.1.3

RF Emissions Test Results

Table 1.0

RADIATED EMISSION RESULTS (FUNDAMENTAL AND HARMONICS)
RADIO CONTROL PITCHING MACHINE TRANSMITTER Model: PITCH MACHINE

Frequency kHz	Meter Reading dBuV/m	Antenna Gain dB/m	Distance Factor dB	Corrected Reading dBuV/m	Spec. Limit dBuV/m	Delta dB
32.74	50.9	11.5	80	-17.6	37.3	-54.90

Note: No other spurious or harmonic emissions were present.



8. **CONCLUSIONS**

The Radio Control Pitching Machine Transmitter Model: Pitch Machine meets all of the specification limits defined in FCC Title 47, Part 15, Subpart C, sections 15.209.

APPENDIX A***RADIATED EMISSIONS
DATA SHEETS***



COMPANY NAME: SPORT FUN, INC. DATE: 4-7-98
EUT: RADIO CONTROL PITCHING MACHINE TRANSMITTER EUT S/N: PROTOTYPE
EUT MODEL: PITCHING MACHINE LOCATION: ☒ BREA ☐ SILVERADO ☐ AGOURA
SPECIFICATION: FCC 15.209 CLASS: — TEST DISTANCE: 3M LAB: A
ANTENNA: ☒ LOOP ☐ BICONICAL ☐ LOG ☐ HORN POLARIZATION: ☐ VERT ☐ HORIZ
☐ QUALIFICATION ☐ ENGINEERING ☐ MFG. AUDIT ☐ ENGINEER: Brian Voeckel

NOTES: NO OTHER SPURIOUS OR HARMONIC EMISSIONS WERE PRESENT.

[illegible]

**** DELTA = CORRECTED READING - SPECIFICATION LIMIT**

AGOURA (818) 597-0600

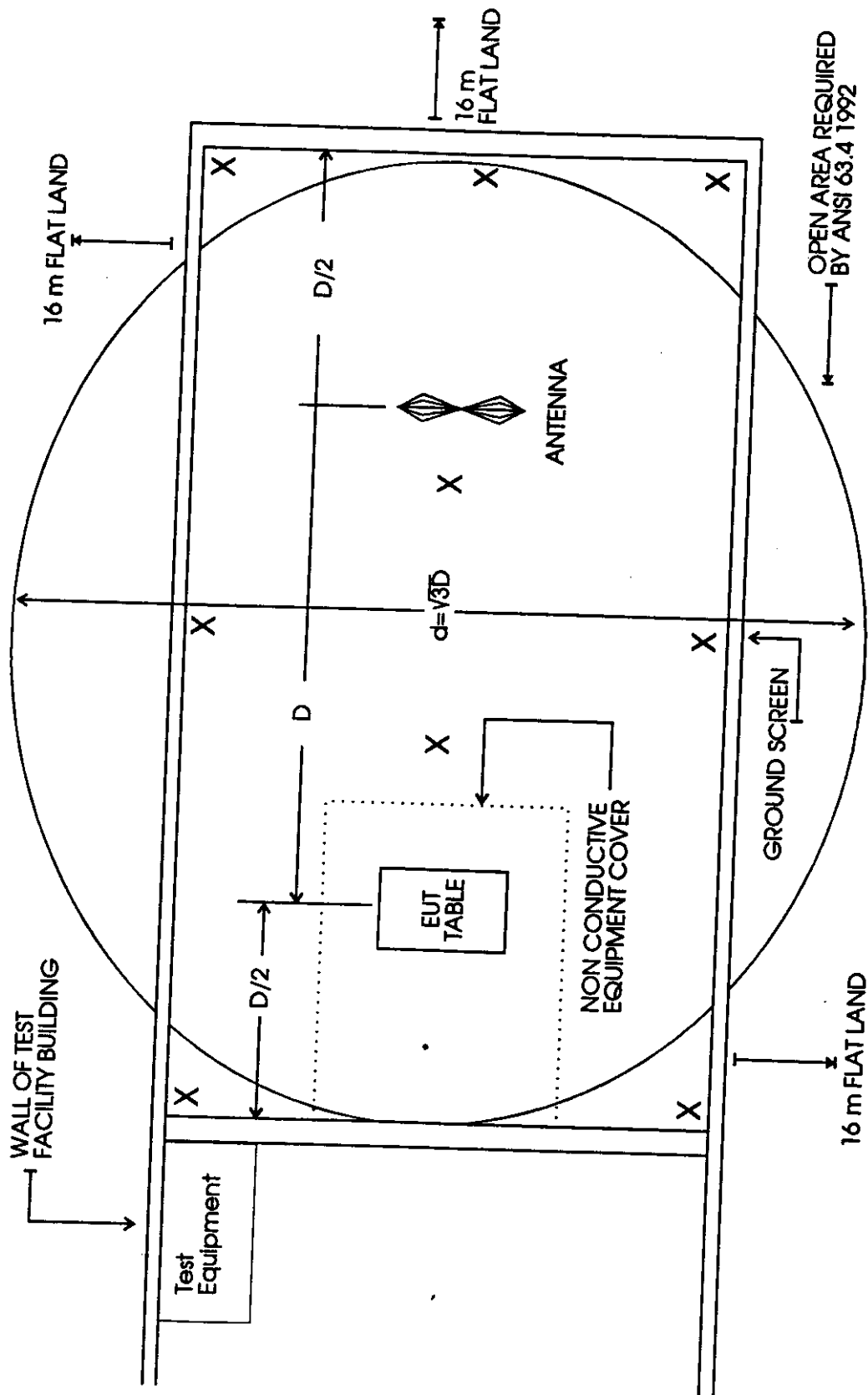


Figure 1: Plot Map and Layout of Test Site D

X = COPPER RODS USED FOR GROUNDING

D = DISTANCE

APPENDIX C

ANTENNA GAIN FACTORS

Com-Power Corporation

(714) 587-9800

Antenna Calibration

Antenna Type:

Loop Antenna

Model:

AL-130

Serial Number:

25309

Calibration Date:

2/5/98

Frequency MHz	Magnetic (dB/m)	Electric (dB/m)
0.01	-40.5	11.0
0.02	-41.6	9.9
0.03	-40.0	11.5
0.04	-40.3	11.2
0.05	-41.6	9.9
0.06	-41.1	10.4
0.07	-41.3	10.2
0.08	-41.6	9.9
0.09	-41.7	9.8
0.1	-41.8	9.7
0.2	-44.0	7.5
0.3	-41.6	9.9
0.4	-41.7	9.8
0.5	-41.7	9.8
0.6	-41.5	10.0
0.7	-41.5	10.0
0.8	-41.6	9.9
0.9	-41.6	9.9
1	-41.1	10.4
2	-40.7	10.8
3	-40.7	10.8
4	-40.9	10.6
5	-40.1	11.4
6	-40.0	11.5
7	-40.3	11.2
8	-39.8	11.7
9	-38.8	12.7
10	-40.8	10.7
12	-41.4	10.1
14	-41.4	10.1
15	-40.9	10.6
16	-40.8	10.7
18	-41.5	10.0
20	-41.5	10.0
25	-41.2	10.3
30	-41.4	10.1

Trans. Antenna Height

2 meter

Receiving Antenna Height

2 meter