ACME TESTING INC., 2002 VALLEY HWY, P.O. BOX 3, ACME, WASHINGTON 98220-0003 888-226-3837.

REPORT OF MEASUREMENTS

DEVICE:	1 CHANNEL LOW POWER AM TRANSMITTER (15.219)
MODEL:	RADIO DJ
MANUFACTURER:	WILD PLANET TOYS INCORPORATED
ADDRESS:	98 BATTERY STREET, SUITE 300 SAN FRANCISCO CA 94111

THE DATA CONTAINED IN THIS REPORT WAS
COLLECTED ON 24 & 25 APRIL 2000 AND COMPILED BY:

PAUL G. SLAVENS
CHIEF EMC ENGINEER

WORK ORDER: 2320

1. General

1.1 Purpose

The purpose of this report is to show compliance to the FCC regulations for unlicensed devices operating under section 15.219 of the Code of Federal Regulations title 47.

1.2 Manufacturer

Company Name:	Wild Planet Toys Incorporated
Contact:	Geoff McKee
Street Address:	98 Battery Street, Suite 300
City/State/Zip:	San Francisco CA 94111
Telephone:	415 623-3843
Fax:	415 623-5767
e-mail:	mckee@wildplanet.com
Web:	www.wildplanet.com

1.3 Test location

Company:	Acme Testing Inc.
Street Address:	2002 Valley Highway
Mailing Address:	PO Box 3
City/State/Zip:	Acme WA 98220-0003
Laboratory:	Test Site 2
Telephone:	888 226-3837
Fax:	360 595-2722
E-mail:	acmetest@acmetesting.com
Web:	www.acmetesting.com
Receipt of EUT:	25 April 2000

1.4 Test Personnel

Paul G. Slavens

2. Test Results Summary

Summary of Test Results
1 Channel Low Power AM Transmitter (15.219), model radio DJ

Test Specification	Test Description	Compliance Criteria	Status
FCC CFR, Part 15C	**Antenna Requirement**	**15.203**	**Pass**
FCC CFR, Part 15C	**Radiated Emissions** 0.1 MHz - 30 MHz	**15.219**	**Pass**
FCC CFR, Part 15C	**Conducted Emissions**	*****	*****

* Not applicable, the EUT is battery powered.

The signed original of this report, supplied to the client, represents the only "official" copy. Retention of any additional copies (electronic or non-electronic media) is at Acme Testing's discretion to meet internal requirements only. The client has made the determination that EUT Condition, Characterization, and Mode of Operation are representative of production units, and meet the requirements of the specifications referenced herein.

Consistent with Industry practice, measurement and test equipment not directly involved in obtaining measurement results but having an impact on measurements (such as cable loss, antenna factors, etc.) is factored into the "Correction Factor" documented in certain test results. Instrumentation employed for testing meets tolerances consistent with known Industry Standards and Regulations.

The measurements contained in this report were made in accordance with the referenced standards and all applicable Public Notices received prior to the date of testing. Acme Testing assumes responsibility only for the accuracy and completeness of this data as it pertains to the sample tested.

Paul G. Slavens
Chief EMC Engineer

Date of Issuance

3. Description of Equipment and Peripherals

3.1 Equipment Under Test (EUT)

Device:	1 Channel (1610 kHz) AM Transmitter
Model Number:	Radio DJ
Serial Number:	None
FCC ID:	N3ERadioDJ70034
Power:	Battery
Grounding:	Local
Antenna Distance:	3 meters

3.2 EUT Peripherals for Emissions

Device	Manufacturer	Model Number	FCC ID	Serial Number
Headphones	Sony	MDR-A15	None	None
CD Player	Optimus	CD-3860	None	5099-015507

3.3 Description of Interface Cables

EUT/Headphones

Shielded	Unshielded	Flat	Round	Length	Ferrite
Yes	No	No	Yes	1 m	No

EUT/Headphones

Shielded	Unshielded	Flat	Round	Length	Ferrite
Yes	No	No	Yes	0.6 m	No

3.4 Mode of Operation During Testing

The EUT was in its normal mode of operation constantly transmitting.

3.5 Modifications Required for Compliance

1. None.

4. Antenna requirement

4.1 Regulation

15.203 An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of Part 15C. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators, which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

4.2 Result

The EUT uses shielded wire for an antenna, the antenna is soldered to the PCB internal to the case.

5. Final Radio Frequency Stage Power Test

Test Requirement: FCC CFR47, Part 15C (15.219)

5.1 Test Equipment

⇒ Digital Multimeter: Fluke 73, Serial Number 64981430, Calibrated: 10 January 2000, Calibration due Date: 10 January 2001

⇒ Digital Multimeter: Fluke 8050, Serial Number 3655209

5.2 Regulation

Section 15.219 Operation in the band 510 - 1705 kHz.

(a) The total input power to the final radio frequency stage (exclusive of filament or heater power) shall not exceed 100 milliwatts.

5.3 Test Procedures

The EUT was modified to measure both the current and the voltage delivered to the final radio frequency stage.

5.4 Test Results

Measured final radio frequency stage voltage = 2.744 volts.

Measured final radio frequency stage current = 31.7 milliamps.

Calculated final radio frequency stage power = 87.0 milliwatts.

6. Antenna Length

Test Requirement: FCC CFR47, Part 15C (15.219)

6.1 Regulation

Section 15.219 Operation in the band 510 - 1705 kHz.

(b) The total length of the transmission line, antenna and ground lead (if used) shall not exceed 3 meters.

6.2 Results

The antenna is 2.25 meters, and the there is a ground lead to be hooked to a nonmetallic object of 0.75 meters.

7. Radiated Emissions Tests

Test Requirement: FCC CFR47, Part 15C (15.219)

Test Procedure: ANSI C63.4:1992

7.1 Test Equipment

⇒ Spectrum Analyzer (yellow): Hewlett-Packard 8566B, Serial Number 2403A06519, Calibrated: 7 January 2000, Calibration due Date: 7 January 2001

⇒ RF Preselector (yellow): Hewlett-Packard 85685A, Serial Number 2926A00971, Calibrated: 17 March 2000, Calibration due Date: 17 March 2001

⇒ Quasi Peak Adapter (yellow): Hewlett-Packard 85650A, Serial Number 2521A-00689, Calibrated: 19 November 1999, Calibration due Date: 19 November 2000

⇒ LF Loop Antenna: EMCO 6502, Serial Number 2016 Calibrated: 28 December 1999, Calibration Due Date: 28 December 2000

⇒ EUT Turntable Position Controller: EMCO 1061-3M, Serial Number 9003-1441, No Calibration Required

⇒ Antenna Mast with Controller: EMCO 1051, Serial Number 9002-1457, No Calibration Required

7.2 Regulation

Section 15.219 Operation in the band 510 - 1705 kHz.

(c) All emissions below 510 kHz or above 1705 kHz shall be attenuated at least 20 dB below the level of the unmodulated carrier. Determination of compliance with the 20 dB attenuation specification may be based on measurements at the intentional radiator's antenna output terminal unless the intentional radiator uses a permanently attached antenna, in which case compliance shall be demonstrated by measuring the radiated emissions.

7.3 Test Procedures

Radiated Emissions Test Characteristics	
Frequency range	0.1 MHz - 30 MHz
Test distance	3 m
Test instrumentation resolution bandwidth	9 kHz
Receive antenna scan height	1 m
Receive antenna azimuth	360 Degree rotation

For tabletop equipment, the EUT is placed on a 1 meter by 1.5 meters wide and 0.8 meter high nonconductive table that sits on a flush mounted metal turntable. Floor standing equipment is placed directly on the flush mounted metal turntable. The EUT is connected to its associated peripherals with any excess I/O cabling bundled to approximately 1 meter.

Preview tests are performed to determine the "worst case" mode of operation. With the EUT operating in "worst case" mode, emissions from the unit are maximized by adjusting the polarization and height of the receive antenna and rotating the EUT on the turntable. Manipulating the system cables also maximizes EUT emissions.

7.4 Calculation of Limit

The maximized fundamental emission from the EUT at 1610 kHz was measured to be 66.5 dBuV/m, therefore the limit for all spurious emissions is 46.5 dBuV/m

7.5 Test Results

PRODUCT EMISSIONS

No	EMISSION FREQUENCY MHz	SPEC LIMIT dBuV/m	ABS	DELTA to Limit (dB)	SITE HGT cm	AZM deg
1	3.220	46.5	39.5	-7.0	100	0
2	16.102	46.5	32.3	-14.2	100	360
3	19.322	46.5	20.9	-25.6	100	360
4	20.932	46.5	23.9	-22.6	100	0
5	22.543	46.5	30.2	-16.3	100	359
6	24.152	46.5	26.3	-20.2	100	17
7	25.765	46.5	27.7	-18.8	100	32
8	28.985	46.5	29.6	-16.9	100	224

8. Conducted Emissions Tests

Test Requirement: FCC CFR, Part 15C, 15.207

Test Procedure: ANSI C63.4, 1992

8.1 Test Equipment

⇒ Spectrum Analyzer: Hewlett-Packard 8566B, Serial Number 2410A-00168, Calibrated: 12 March 1999, Calibration due Date: 12 March 2000

⇒ RF Preselector: Hewlett-Packard 85685, Serial Number 2648A-00519, Calibrated: 12 March 1999, Calibration due Date: 12 March 2000

⇒ Quasi Peak Adapter: Hewlett-Packard 85650A, Serial Number 2043A-00327, Calibrated: 17 March 1999, Calibration due Date: 17 March 2000

⇒ Line Impedance Stabilization Network: Rhode & Schwarz ESH2-Z5, Serial Number ACMERS1, Calibrated: 1 September 1999, Calibration due Date: 01 September 2000

8.2 Purpose

The purpose of this test is to evaluate the level of conducted noise the EUT imposes on the AC mains.

8.3 Test Procedures

For tabletop equipment, the EUT is placed on a 1 meter by 1.5 meters wide and 0.8 meter high nonconductive table that is placed above the groundplane. Floor standing equipment is placed directly on the groundplane. Any supplemental grounding mechanisms are connected, if appropriate. The EUT is connected to its associated peripherals, with any excess I/O cabling bundled to approximately 1 meter. The EUT is connected to a dedicated LISN and all peripherals are connected to a second separate LISN circuit. The LISNs are bonded to the groundplane.

Preview tests are performed to determine the "worst case" mode of operation. With the EUT operating in "worst case" mode, final conducted measurements are taken. Conducted measurements are made on each current carrying conductor with respect to ground.

Conducted Emissions Test Characteristics	
Frequency range	0.15 MHz - 30.0 MHz
Test instrumentation resolution bandwidth	9 kHz
Lines Tested	Line 1/Line 2

8.4 Test Results

Not applicable, the EUT is battery powered.

9. Miscellaneous Comments and Notes

1. None.

10. List of Attachments

1. Photographs of test set-ups. (2)