

July 6, 2001

Federal Communications Commission
Equipment Authorization Branch
7435 Oakland Mills Road
Columbia, MD 21046

Dear Sir/Madam:

Enclosed you will find an application for Certification of PocketWizard Plus Intentional Radiator, FCC ID: KDS-PW2-002. Certification is requested to the requirements of Part 15, Subpart C of the Commission's rules. This application is being filed by Retlif Testing Laboratories on behalf of LPA Design.

I trust that you will find the enclosed application to be complete; however, should you have any questions or require any additional information, please feel free to contact us.

Very truly yours,

RETLIF TESTING LABORATORIES

Scott Wentworth
Manager

Enc. (as stated)

APPLICANT

LPA Design
1350 Shelburne Road
South Burlington, VT 05403

MANUFACTURER

Test Report No. R-3378N1
FCC ID: KDS-PW2-002
SAME

Test Report No. R-3378N1
FCC ID: KDS-PW2-002

TEST SPECIFICATION: FCC Rules and Regulations Part 15, Subpart C, Para. 15.231
Test Report No. R-3378N1
FCC ID: KDS-PW2-002

TEST PROCEDURE: ANSI C63.4:1992

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TEST SAMPLE DESCRIPTION

Test Report No. R-3378N1
FCC ID: KDS-PW2-002

BRANDNAME: PocketWizard Plus MODEL: N/A
Test Report No. R-3378N1
FCC ID: KDS-PW2-002

Test Report No. R-3378N1
FCC ID: KDS-PW2-002

TYPE: Intentional Radiator - Transmitter

Test Report No. R-3378N1
FCC ID: KDS-PW2-002

Test Report No. R-3378N1
FCC ID: KDS-PW2-002

POWER REQUIREMENTS: 3VDC (Internal Battery or External Power Supply)
Test Report No. R-3378N1
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Test Report No. R-3378N1
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FREQUENCY OF OPERATION: 344MHz

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TESTS PERFORMED

Test Report No. R-3378N1
FCC ID: KDS-PW2-002

Para. 15.231(a), Radiated Emissions, Fundamental and Harmonics
Test Report No. R-3378N1
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Para. 15.231(c), Occupied Bandwidth

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Para. 15.207(a), Conducted Emissions

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REPORT OF MEASUREMENTS

Test Report No. R-3378N1
FCC ID: KDS-PW2-002

Applicant: LPA Design

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Device:

Intentional Radiator - Transmitter

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FCC ID: KDS-PW2-002

FCC ID:

KDS-PW2-002

Test Report No. R-3378N1
FCC ID: KDS-PW2-002

Power Requirements: 3VDC (Internal Battery or External Power Supply)
Test Report No. R-3378N1
FCC ID: KDS-PW2-002

Applicable Rule Section: Part 15, Subpart C, Section 15.231

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REPORT OF MEASUREMENTS (continued)

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Test Report No. R-3378N1
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TEST RESULTS

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15.231 (a) - The device is a transmitter for remote flash control of photographic strobes.

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15.231 (a)(1) &- The transmitter is manually operated and ceases transmission less than 5

15.231 (2) seconds after deactivation.

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15.231 (a)(3) - The transmitter does not perform periodic transmissions at regularly predetermined

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intervals.

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FCC ID: KDS-PW2-002

15.231 (a)(4)-

The device is not employed for RC purposes involving security.

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15.231 (b) - The fundamental field strength did not exceed 7,244 μ V/M (Average) at a test

distance of 3 meters. In addition, the requirements of section 15.35 for

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averaging pulsed emissions and for limiting peak emissions were met.

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The field strength of harmonic and spurious emissions did not exceed 724

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μ V/M (AVERAGE).

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Test Report No. R-3378N1
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15.231 (c) - The device operates at a frequency range of 344MHz. The bandwidth of

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emissions did not exceed 0.25% of the operating frequency (860kHz).

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DETERMINATION OF FIELD STRENGTH LIMITS

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The field strength limits shown below are found in Section 15.231.

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Frequency	Limit
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F1 = 260 3750 = L1

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Fo = 344 Lo

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F2 = 470 12500 = L2

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The formula below was utilized to determine the limits:

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$$\text{Limit} = L1 + [(F0-F1)(L2-L1)/(F2-F1)]$$

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Solving yields:

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Fundamental Limit = 7,244 μ V/M (AVERAGE) @ 3 Meters

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Harmonic Limit = 724 μ V/M (AVERAGE) @ 3 Meters

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Test Report No. R-3378N1
FCC ID: KDS-PW2-002

REPORT OF MEASUREMENTS (continued)

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Test Report No. R-3378N1
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DETERMINATION OF DUTY CYCLE

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The unit's RF output was directly coupled to the input of the spectrum analyzer. The analyzer was

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set for a frequency span of 0Hz. The sweep time was then adjusted in order to display one full pulse

train. The transmitter on time was then summed and compared to the time for one full cycle in order

to obtain the duty cycle.

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Transmitter On Time = 0.450 milliseconds (maximum)

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Transmitter Cycle Time = 5.350 milliseconds

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Transmitter Duty Cycle = 0.0841

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*See Attached Duty Cycle Timing Diagram

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FCC ID: KDS-PW2-002

SPECTRUM ANALYZER DESENSITIZATION CONSIDERATIONS

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Due to the nature of the emissions being measured, care was taken to ensure that the resolution

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bandwidth of the spectrum analyzer was adequate to provide accurate measurements.

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GENERAL NOTES

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1. All readings were taken utilizing a peak detector function at

a test distance of 3 meters.

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2. The duty cycle was applied to the peak readings in order to

determine the average value of the emissions.

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3. The frequency range for radiated emissions was scanned from 30

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MHz to 3.4 GHz. The frequency range for conducted emissions

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was scanned from 450 kHz to 30 MHz.

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EQUIPMENT LIST

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Radiated Emissions

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Test Report No. R-3378N1
FCC ID: KDS-PW2-002

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
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3116 Pre-Amplifier

Miteq

0.1 GHz - 18 GHz

AFS42-35

12/3/98

12/3/99

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3118 Broadband Pre-Amplifier Electro-Metrics 10 KHz - 1 GHz BPA-1000 6/24/98 6/24/99

Test Report No. R-3378N1
FCC ID: KDS-PW2-002

3258 Double Ridge Guide EMCO 1 - 18 GHz 3115 4/3/98 4/3/99

Test Report No. R-3378N1
FCC ID: KDS-PW2-002

4029 Open Area Test Site Retlif 3 / 10 Meters RNH 6/15/98 6/15/99

Test Report No. R-3378N1
FCC ID: KDS-PW2-002

4202 Biconilog

EMCO

26 MHz - 2 GHz

3142

6/10/98

6/10/99

Test Report No. R-3378N1
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4895 Spectrum Analyzer Hewlett Packard 9kHz - 22GHz 8593EM 9/18/98 9/18/99

Test Report No. R-3378N1
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4896 Graphics Plotter

Hewlett Packard

N/A

7470A

8/23/98

8/23/99

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EQUIPMENT LIST

Test Report No. R-3378N1
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Test Report No. R-3378N1
FCC ID: KDS-PW2-002

Conducted Emissions

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Test Report No. R-3378N1
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EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
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3107 Spectrum Analyzer Advantest 10 KHz - 3 GHz 4131B 2/9/98 2/9/99

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4027 LISN

Solar Electronics 10 KHz - 30 MHz 9252-50-R-24BNC 6/24/98 6/24/99

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4028	Isolation Transformer	Acme	N/A	120x240	1/24/98	1/24/99
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4050 Transient Limiter Hewlett Packard 9 KHz - 200 MHz 11970K 12/9/98 12/9/99

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4896 Graphics Plotter

Hewlett Packard N/A

7470A

8/23/98 8/23/99

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Test Report No. R-3378N1
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