

ENGINEERING STATEMENT

In Regard to Measurements on

SAM ASH MUSIC CORPORATION

MODEL: Ear Amp R600

FCC ID: CCRR600

A. INTRODUCTION

Hyak Laboratories, Inc. has been authorized by Sam Ash Music Corporation to perform measurements on a receiver to determine compliance with FCC rules, Part 15, Subpart B.

The receiver operates in the 614 - 662 MHz band and is intended for use as a wireless ear monitor.

B. DESCRIPTION OF RECEIVER

The receiver incorporates a dual-diversity, dual conversion, super-heterodyne design.

The following information is supplied as requested in FCC Bulletin OCE 24:

1. Service in which the receiver will be used: Part 15. (74).
2. Function of receiver: Wireless Monitor.
3. Tuning range: 614 - 662 MHz.
4. IF used: 219 MHz; 10.7 MHz.
5. Fundamental frequency of principal oscillators in the receiver.

First local oscillator: (F_o -219) MHz.

C. DESCRIPTION OF MEASUREMENT FACILITIES

A description of the Hyak Laboratories' radiation test facility is a matter of record with the FCC. The facility was accepted for radiation measurements from 30 to 1000 MHz on October 1, 1976, and is currently listed as an accepted site.

D. DESCRIPTION OF MEASUREMENT PROCEDURE: RADIATED EMISSIONS

Measurements of receiver radiation field strength were made using ANSI C63.4 (1992) the basic procedure. Measurements were made with 3 meter spacing between the receiver under test and the test equipment antenna. The antennas connected to the receiver under test consisted of 2 vertically polarized, antenna approximately 10 cm long.

The receiver under test was placed on a rotatable table 80 cm in height.

Measurement of field strength was made through use of a HP 8596E spectrum analyzer in conjunction with Singer DM-105A series calibrated dipoles, and Emco 3115 horn.

For each spurious emission identified between 30 to 2000 MHz, the test sample was rotated for maximum pickup, the test antenna varied in elevation, and the test antenna polarization shifted between horizontal to vertical in order to maximize observed signals.

E. REPORT OF RADIATED EMISSIONS

Table 1 lists the frequency and amplitude of all signals observed from 30 to 2000 MHz that were within 20 dB of the limits of paragraph 15.109 of the FCC Rules for lower and upper operating channels.

TABLE 1

RADIATED SPURIOUS EMISSIONS
Measured at 3 meters
PART 15(B) PARA. 15.109

<u>Frequency To Which Tuned (MHz)</u>	<u>Frequency of Emission (MHz)</u>	<u>Meter Reading (dBm)</u>	<u>Antenna Factor (dB)</u>	<u>Field¹ Intensity uV/m @ 3m</u>	<u>FCC Limit uV/m @ 3m</u>	<u>dB to Limit</u>
615.000	833.992	-91.5	29.9	187	200	- 0.6
615.000	1667.982	-87.2	26.6	209	500	- 7.6
615.000	3335.960	-95.6	31.8	145	500	-10.8
615.000	4169.960	-99.2	33.4	115	500	-12.8
638.000	856.992	-92.1	29.9	175	200	- 1.2
638.000	1713.982	-88.4	26.8	186	500	- 8.6
638.000	2570.972	-91.6	29.8	182	500	- 8.8
638.000	3427.960	-94.0	32.1	180	500	- 9.0
661.000	879.992	-93.4	30.3	156	200	- 2.2
661.000	1759.982	-85.6	27.1	266	500	- 5.5
661.000	2639.970	-90.8	29.9	202	500	- 7.9
661.000	3519.960	-89.6	32.4	309	500	- 4.2

Note 1: $\text{uV/m} = \text{Log}^{-1} \frac{\text{dBu/m}}{20}$

dBu = dBm + antenna factor + 107

*Reference data, 20 dB or more below FCC limit.

RADIATED SPURIOUS EMISSIONS
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TABLE 1

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F. PROCEDURE - AC LINE CONDUCTED SPURIOUS

The receiver is battery powered, therefore no power line conducted spurious measurements were made.

G. STATEMENT

Technical test data are from tests performed by me or under my supervision. My qualifications are a matter of record with the Federal Communications Commission. I personally attest to the accuracy of the test data submitted as a part of this engineering statement.

H. APPENDICES:

The following appendices are submitted as separate exhibits:

FCC ID Label and Location
Photographs
Schematic and Block Diagrams
Owner's Manual
Test Set-Up Photo

Rowland S. Johnson

Dated: July 11, 2000

