

1. VERIFICATION OF COMPLIANCE

COMPANY NAME : AUDIOVOX CORPORATION  
 150 MARCUS BOULEVARD  
 HAUPPAUGE, NY 11788  
 U.S.A.

CONTACT PERSON : PAT LAVELLE / EXCLUSIVE VICE  
 PRESIDENT

TELEPHONE NO. : (516) 231-7750

EUT DESCRIPTION : 302 MHZ RECEIVER

MODEL NAME/NUMBER : ALA-20

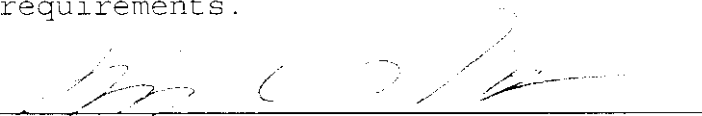
FCC ID : BGAAL20R

DATE TESTED : SEPTEMBER 17, 1998

REPORT NUMBER : 98E7740

TYPE OF EQUIPMENT	SECURITY EQUIPMENT (UNINTENTIONAL RADIATOR)
EQUIPMENT TYPE	302 MHZ SUPERREGENERATE RECEIVER
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15.109

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.

  
 MIKE C.I. KUO / VICE PRESIDENT  
 COMPLIANCE ENGINEERING SERVICES, INC.

## 2. PRODUCT DESCRIPTION

AUDIOVOX CORP., Model ALA-20 is the receiving portion of a multi-purpose security device. The associated Transmitter is manufactured by Audiovox Corp., Model No: PRO94KR, FCC ID: BGA AV2T.

## 3. TEST FACILITY

The 3 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 facilities was submitted to the Commission on May 27, 1994.

The measuring instrument which was utilized in performing the tests documented herein has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment which is traceable to recognized national standards.

## 4. MEASUREMENT EQUIPMENT USED

Manufacturer	Model Number	Description	Cal Due Date
H.P.	8640B	Signal Generator (0.5 - 1024 MHz)	08/99
H.P.	8566B	Spectrum Analyzer (100Hz - 22GHz)	09/99
EMCO	3146	Antenna (200-1000 MHz)	10/98
H.P.	8447D	Preamplifier (0.1 - 1300 MHz)	09/99
ARA	DRG-18/A	Antenna(1 - 18GHZ)	12/98
H.P.	8449B	Preamplifier (1-26.5GHZ)	03/99

**5. TEST CONFIGURATION**

Set signal generator to transmit at 302 MHz. The receiver receives the signal.

**6. TESTS CONDUCTED**

CFR 47, 15.107 CODUCTED TESTS	CONDUCTED WHEN DEVICE CONNECTED TO AC LINE
CFR 47, 15.109 RADIATED EMISSION TESTS	CONDUCTED AT 3 METERS

**7. CONDUCTED EMISSION TEST PROCEDURE**

The EUT is located so that the distance between the boundary of the EUT and the closest surface to the LISN is 0.8m.

Conducted disturbance shall be measured between the phase lead and the ground, and between the neutral lead and the ground. The frequency 0.450 - 30 MHz shall be investigated.

Set the EMI receiver to PEAK detector setting and sweep continuously over the frequency range to be investigated. Set resolution bandwidth to 9kHz minimum. Connect EMI receiver input cable to LINE 1 RF measurement connection on the LISN. Connect a 50ohm terminator to the unused RF connection on the LISN. For each mode of EUT operation, maximize emissions readings by manipulating cable and wire positions. Record the configuration for each EUT power cord which produces emissions closest to the limit. Repeat the same procedure for LINE 2 of each EUT power cord.

## 8. RADIATED EMISSION TEST PROCEDURE

The EUT and all other support equipment are placed on a wooden table 80 cm above the ground screen. Antenna to EUT distance is 3 meters. During the test, the table is rotated 360 degrees to maximize emissions and the antenna is positioned from 1 to 4 meters above the ground screen to further maximize emissions. The antenna is polarized in both vertical and horizontal positions.

Monitor the frequency range of interest at a fixed antenna height and EUT azimuth. Frequency span should be small enough to easily differentiate between broadcast stations and intermittent ambients. Rotate EUT 360 degrees to maximize emissions received from EUT. If emission increases by more than 1 dB, or if another emission appears that is greater by 1 dB, return to azimuth where maximum occurred and perform additional cable manipulation to further maximize received emission.

Move antenna up and down to further maximize suspected highest amplitude signal. If emission increased by 1 dB or more, or if another emission appears that is greater by 1dB or more, return to antenna height where maximum signal was observed and manipulate cables to produce highest emissions, noting frequency and amplitude.

## 9. COHERENT TESTS

During Radiated Emission Tests, H.P. signal generator model no: 8640B (0.5 - 1024 MHz) was used to radiate unmodulated CW signal to EUT at 302.0 MHz. Please refer to radiated emission data no: 980917F1 for six highest readings.

## 10. EQUIPMENT MODIFICATIONS

To achieve compliance to FCC section 15.109, the following change(s) were made during compliance testing:

NOT APPLICABLE

Compliance Engineering Services Inc.

Project No. : 98E7740  
Report No. : 980917F1  
Date : 09/17/1998  
Time : 09:56  
Test Engr : JUAN MARTINEZ

>> 3 M RADIATED EMISSION DATA <<

*J.M.*

Company : AUDIOVOX CORPORAION  
Equipment Under Test : 302MHZ RX (ALA-20)  
Test Configuration : EUT  
Type of Test : FCC CLASS B  
Mode of Operation : RX

Freq.	dBuV	PreAmp	Ant	Cable	dBuV/m	Limit	Margin	Pol	Hgt(m)	Az
LP NSN=X100 ; Pre-pamp = 8447D-P2 2944A07781:										
301.67	35.90	-30.10	15.01	3.85	24.66	46.00	-21.34	V	1.0	315
302.84	36.60	-30.10	15.02	3.86	25.38	46.00	-20.62	V	1.0	315
301.80	45.60	-30.10	14.69	3.85	34.05	46.00	-11.95	H	1.2	135
303.58	44.61	-30.10	14.72	3.86	33.09	46.00	-12.91	H	1.2	135
302.92	45.10	-30.10	14.71	3.86	33.57	46.00	-12.43	H	1.2	135
301.62	44.70	-30.10	14.69	3.85	33.14	46.00	-12.86	H	1.2	135
299.68	47.60	-30.09	14.65	3.84	35.99	46.00	-10.01	H	1.2	135
304.86	44.70	-30.11	14.74	3.87	33.21	46.00	-12.79	H	1.2	135

Total # of data 8  
V. f2.2•

COHERENT EMISSIONS, AUDIOVOX (FCC ID=BGAAL20R)

REF 107.0 dB $\mu$ V ATTEN 0 dB

70

10 dB/

OFFSET

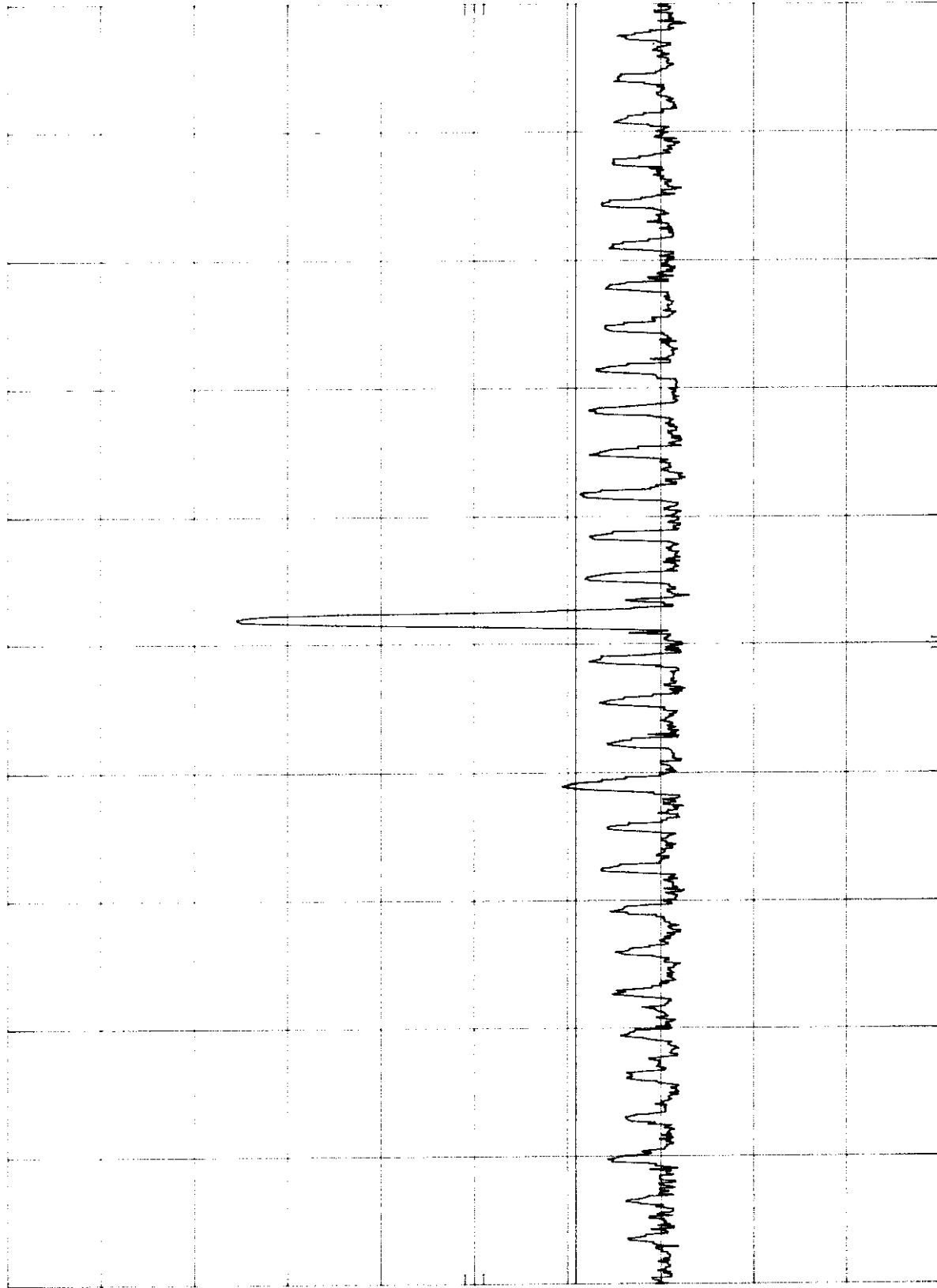
10.0

dB

DL

46.1

dB $\mu$ V



CENTER 301.8 MHz

RES BW 100 KHz

VBW 100 KHz

SPAN 20.0 MHz

SWP 20.0 msec