

*FCC PART 15, SUBPART B & C
TEST REPORT*

for

BASE STATION TRANSMITTER
Model: LT-800-072
FCC ID: OMD800-001

Prepared for

LISTEN TECHNOLOGIES
1762A PROSPECTOR AVENUE
PARK CITY, UT 84060

COMPATIBLE ELECTRONICS INC.
2337 TROUTDALE DRIVE
AGOURA, CALIFORNIA 91301
(818) 597-0600

DATE: JUNE 28, 1999

	REPORT BODY	APPENDICES				TOTAL
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	
PAGES	16	2	2	9	22	51

This report shall not be reproduced except in full, without the written approval of Compatible Electronics.



TABLE OF CONTENTS

Section / Title	PAGE
GENERAL REPORT SUMMARY	4
SUMMARY OF TEST RESULTS	4
1. PURPOSE	5
2. ADMINISTRATIVE DATA	7
2.1 Location of Testing	7
2.2 Traceability Statement	7
2.3 Cognizant Personnel	7
2.4 Date Test Sample was Received	7
2.5 Disposition of the Test Sample	7
2.6 Abbreviations and Acronyms	7
3. APPLICABLE DOCUMENTS	8
4. Description of Test Configuration	9
4.1 Description of Test Configuration - EMI	9
4.1.1 Cable Construction and Termination	10
5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT	11
5.1 EUT and Accessory List	11
5.2 EMI Test Equipment	12
6. TEST SITE DESCRIPTION	13
6.1 Test Facility Description	13
6.2 EUT Mounting, Bonding and Grounding	13
7. Test Procedures	14
7.1 RF Emissions	14
7.1.1 Conducted Emissions Test	14
7.1.2 Radiated Emissions Test	15
7.1.3 RF Emissions Test Results	16
8. Conclusion	17



LIST OF APPENDICES

APPENDIX	TITLE
A	Modifications to the EUT
B	Additional Models Covered Under This Report
C	Diagrams, Charts and Photos <ul style="list-style-type: none">• Test Setup Diagrams• Antenna and Effective Gain Factors• Radiated and Conducted Emissions Photos
D	Data Sheets

LIST OF FIGURES

FIGURE	Title
1	Conducted Emissions Test Setup
2	Plot Map And Layout of Test Site



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 procedures described in the test specifications 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 with the written permission of Compatible Electronics.

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

Device Tested: Base Station Transmitter
Model: LT-800-072
S/N: None

Product Description: *This is a Base Station Auditory Assistance Transmitter used to transmit multiple channels to remote receivers which are used by those who are hearing impaired.. The product is used in places such as cinemas, places of worship, public meeting facilities and schools.*

Modifications: The EUT was modified during the test in order to comply with specifications. See the list in appendix A for modifications.

Manufacturer: Listen Technologies Corporation
1762A Prospector Avenue
Park City, Utah 84060

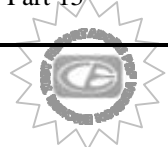
Test Date: June 10, 1999

Test Specifications: EMI requirements
FCC Title 47, Part 15 Subpart B & C
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	Conducted RF Emissions, 450 kHz - 30 MHz.	Complies with the Class B limits of FCC Title 47, Part 15 Subpart B.
2	Radiated RF Emissions, 30 MHz – 1000 MHz.	Complies with the Class B limits of FCC Title 47, Part 15 Subpart B.
3	Radiated RF Emissions, 10kHz to 1GHz.	Complies with the limits of FCC Title 47, Part 15 Subpart C 15.109, 15.209, 15.237.



1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Base Station Transmitter Model: LT-800-072. 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 specification limits defined in FCC Title 47, Part 15, Subpart C, 15.109 and 15.209 and 15.237.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 2337 Troutdale Drive, Agoura, California 91301.

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

Listen Technologies Corporation

Keldon A. Paxman VP of Operations

Compatible Electronics, Inc.

Joey J. Madlangbayan Test Engineer

Jeff S. Klinger Lab Manager

2.4 Date Test Sample was Received

The test sample was received on June 10, 1999.

2.5 Disposition of the Test Sample

The test sample remains at Compatible Electronics.

2.6 Abbreviations and Acronyms

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

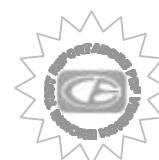
RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network



3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
FCC Title 47, Subpart C.	FCC Rules - Intentional Radiators.
FCC Title 47, Subpart B.	FCC Rules – Radio frequency devices (including digital devices).
CISPR 16 1993	Specification for radio disturbance and immunity measuring apparatus and methods.
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 TEST CONFIGURATION

4.1 Description of Test Configuration - EMI

The EUT was set up in a tabletop configuration while transmitting in the frequency ranges. The EUT was tested while continuously transmitting a signal within the EUT output frequencies. A CD player, microphone, and speaker was connected to the audio input and output ports respectively.

The EUT was tested in two configurations regarding the transmitting antenna. The transmitting antenna was first connected to the antenna port on center top surface of the EUT. The second configuration was with the antenna mounted on an auxiliary base which was connected to the EUT antenna auxiliary port via a 10 meter coax cable. The power output setting was on high.

It was determined that the highest emission levels were found in the above configuration with the antenna connected directly to the top of the EUT. The final radiated and conducted data was taken in this mode of operation. All initial investigations were performed with the Spectrum Analyzer in manual mode scanning the frequency range continuously. Photographs and data sheets are included in Appendices C and D.



4.1.1 Cable Construction and Termination

- Cable 1 This is a 10 meter braid shielded round coax cable which connects the auxiliary antenna base to the EUT. There is a BNC connector at the EUT end and it is hard wired onto the antenna base. The cable was bundled to a length of 1 meter.
- Cable 2 This is a 1.5 meter unshielded round cable which connects the CD player to the EUT. There is an RCA connector at the EUT end and a phone jack at the CD player end. The cable was bundled to a length of 1 meter.
- Cable 3 This is a 1.5 meter unshielded round cable which connects the Speaker to the EUT. There is an RCA connector at both ends of the cable. The cable was bundled to a length of 1 meter.
- Cable 4 This is a 3 meter unshielded round cable which connects the Microphone to the EUT. There is a stereo jack connector at the EUT end and it is hardwired into the microphone. The cable was bundled to a length of 1 meter.



5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NUMBER
BASE STATION TRANSMITTER (EUT)	LISTEN TECHNOLOGIES CORPORATION	LT-800-072	S/N: NONE FCC ID: OMD800-001
AC ADAPTER (EUT)	G.T.T, INC.	A41150300	NONE
CD PLAYER	OPTIMUS	CD-3680	2566-022978
AC ADAPTER (CD PLAYER)	RADIO SHACK	273-1664	9848
MICROPHONE	RADIO SHACK	CT329	NONE
SPEAKER	REVEAL	GENERIC	NONE
MONITOR	VIEWSONIC	1457-M	8134907337



5.2 EMI Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Spectrum Analyzer	Hewlett Packard	8566B	27029A04566	Jun. 23, 1998	Jun. 23, 1999
Quasi-Peak Adapter	Hewlett Packard	85650A	2648A15161	Mar. 09, 1999	Mar. 09, 2000
Preamplifier	Com Power	PA-102	01249	Apr. 12, 1999	Apr. 12, 2000
Spectrum Analyzer	Hewlett Packard	8568B	2601A02643	Jan. 05, 1999	Jan. 05, 2000
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00485	Jan. 05, 1999	Jan. 05, 2000
RF Attenuator	Sertek	412-10	XX01	Sep. 14, 1998	Sep. 14, 1999
LISN	Com Power	LI-200	01758	Jul. 15, 1998	Jul. 15, 1999
LISN	Com Power	LI-200	01763	Jul. 15, 1998	Jul. 15, 1999
LISN	Com Power	LI-200	01734	Jul. 15, 1998	Jul. 15, 1999
LISN	Com Power	LI-200	01731	Jul. 15, 1998	Jul. 15, 1999
Biconical Antenna	Com Power	AB-100	01535	Apr. 16, 1999	Apr. 16, 2000
Log Periodic Antenna	Com Power	AL-100	A101	Apr. 16, 1999	Apr. 16, 2000
Powered Loop Antenna	Com Power	AL-130	17052	Jan. 6, 1999	Jan. 6, 2000
Antenna Mast	Com Power	AM-400	N/A	N/A	N/A
Turntable	Com Power	TT-106A	N/A	N/A	N/A
Computer	Hewlett Packard	9153B	2647A01489	N/A	N/A
Printer	Hewlett Packard	2225A	2752S15982	N/A	N/A
Plotter	Hewlett Packard	7440A	2539A57182	N/A	N/A



6. TEST SITE DESCRIPTION

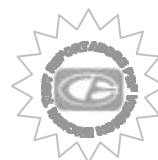
6.1 Test Facility Description

Please refer to section 2.1 and 7.1.2 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. Test results are also included in this section.

7.1 RF Emissions

7.1.1 Conducted Emissions Test

The Spectrum Analyzer was used as a measuring meter along with the Quasi-Peak Adapter. The data was collected with the Spectrum Analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A 10 dB attenuation pad was used for the protection of the Spectrum Analyzer input stage, and the Spectrum Analyzer offset was adjusted accordingly to read the actual data measured. The LISN output was read by the Spectrum Analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for the conducted emissions test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4: 1992. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The initial test data was taken in manual mode while scanning the frequency ranges of 0.15 MHz to 1.6 MHz, 1.6 MHz to 5 MHz and 5 MHz to 30 MHz. The conducted emissions from the EUT were maximized for operating mode as well as cable and peripheral placement. Once a predominant frequency (within 12 dB of the limit) was found, it was more closely examined with the Spectrum Analyzer span adjusted to 1 MHz.

The final data was collected under program control by the computer in several overlapping sweeps by running the Spectrum Analyzer at a minimum scan rate of 10 seconds per octave.



7.1.2 Radiated Emissions Test

The Spectrum Analyzer was used as a measuring meter along with the Quasi-Peak Adapter. The preamplifier was used to increase the sensitivity of the instrument. 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 quasi-peak 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 120 kHz.

Broadband biconical and log periodic antennas were used as transducers during the measurement. The biconical antenna was used from 30 MHz to 300 MHz, and the log periodic antenna was used from 300 MHz to 1 GHz. The frequency spans were wide (30 MHz to 88 MHz, 88 MHz to 216 MHz, 216 to 300 MHz and 300 MHz to 1 GHz) during preliminary investigations. The final data was taken with a frequency span of 1 MHz. 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. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength).

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.



7.1.3 RF Emissions Test Results

The fundamental and up to the 10th harmonic emissions are within the specifications.

RADIATED EMISSIONS - SPURIOUS BASE STATION TRANSMITTER

The following bands were specifically scanned.

Frequency Band .10 – 1000Mhz

The Radiated Spurious emissions were within the specifications.

RF Energy From Base Station Transmitter
in MHz at 3 meters (μV/m)

0.090-0.110	<2400/F(kHz)+80	16.42-16.423	<70
0.495-0.505	<2400/F(kHz)+40	16.69475-16.69525	<70
2.1735-2.1905	<70	16.80425-16.80475	<70
4.125-4.128	<70	25.5-25.67	<70
4.17725-4.17775	<70	37.5-38.25	<100
4.20725-4.20775	<70	73-74.6	<100
6.215-6.218	<70	74.8-75.2	<100
4.20725-4.20775	<70	108-121.94	<100
6.215-6.218	<70	123-138	<150
6.26775-6.26825	<70	149.9-150.05	<150
6.31175-6.31225	<70	156.52-156.52	<150
8.291-8.294	<70	162.01-167.17	<150
8.362-8.366	<70	167.72-173.2	<150
8.37625-8.38675	<70	240-285	<200
8.41425-8.41475	<70	322-335.4	<200
12.29-12.293	<70	399.9-410	<200
12.51975-12.52025	<70	608-614	<200
12.57675-12.57725	<70	960-1000	<500
13.36-13.41	<70		



8. CONCLUSION

The Base Station Transmitter Model: LT-800-072 meets all of the requirements of the FCC Title 47, Part 15, Subpart B & C.





MODIFICATIONS TO THE EUT



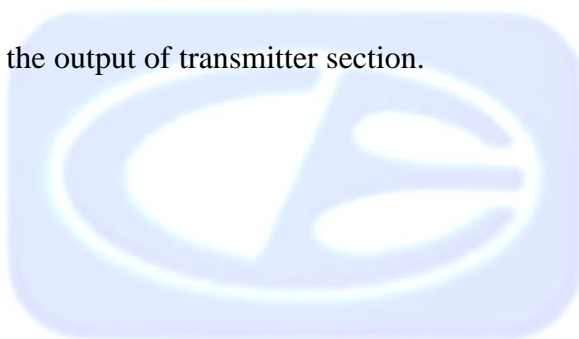
MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Pt. 15.237 specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

Modifications:

- 1) Added 100 Ω resistor at the output of transmitter section.





APPENDIX B

***ADDITIONAL MODELS COVERED
UNDER THIS REPORT***



ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

BASE STATION TRANSMITTER

Model: LT-800-072

S/N: NONE

There were no additional models covered under this report.





APPENDIX C

DIAGRAMS, CHARTS AND PHOTOS

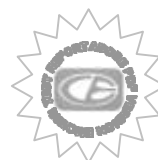
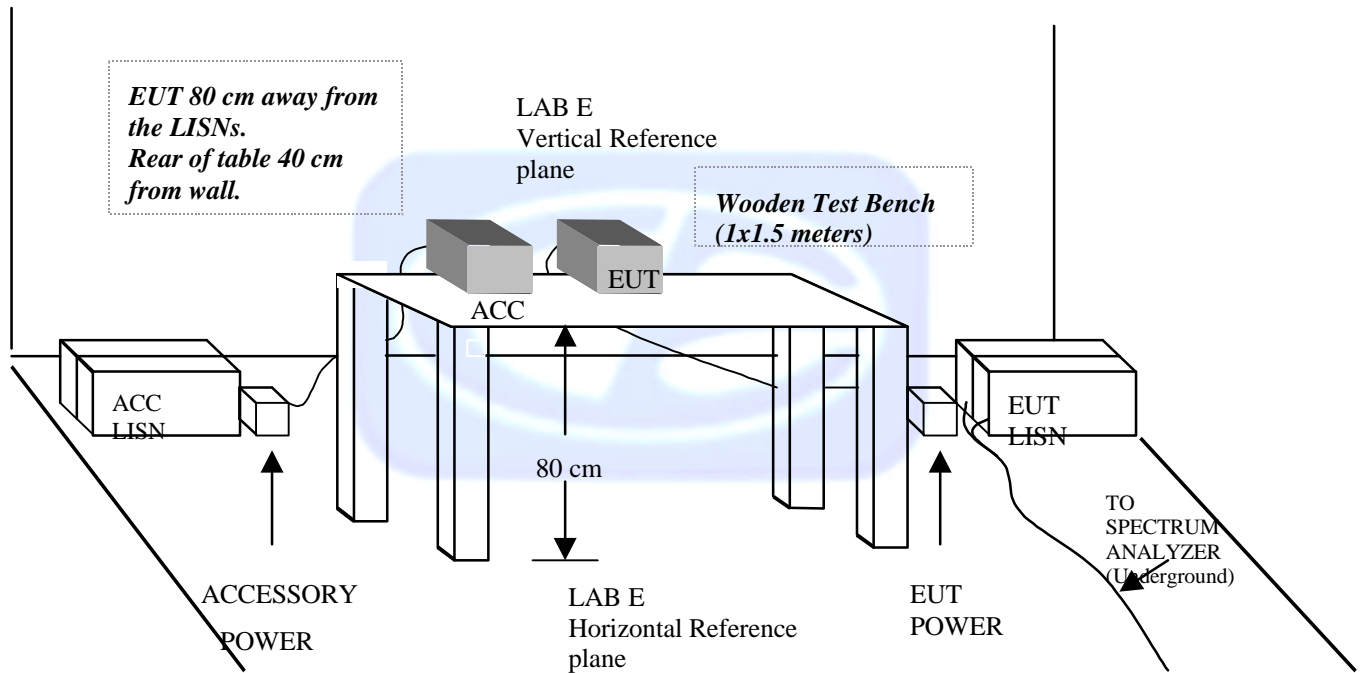
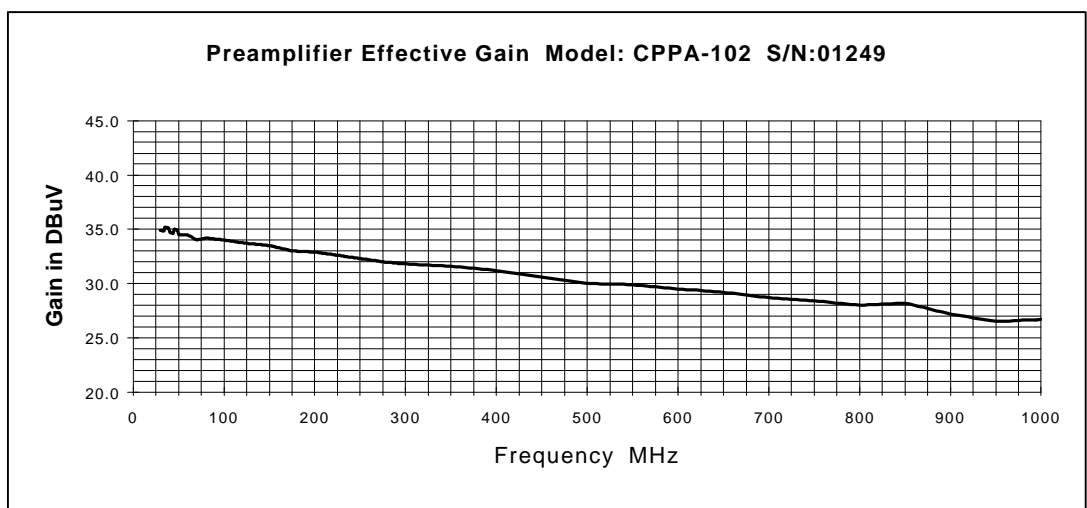
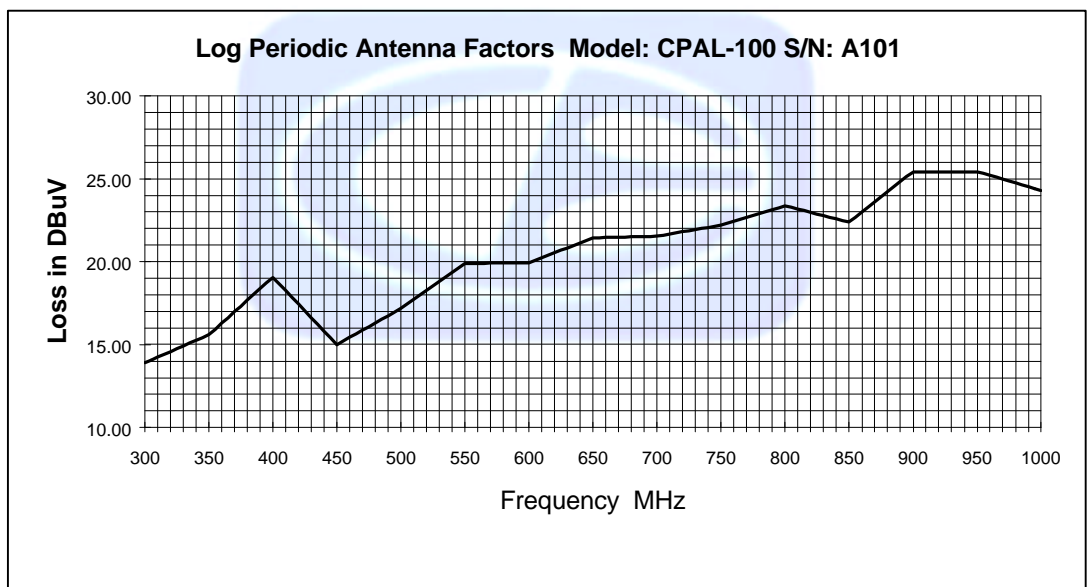
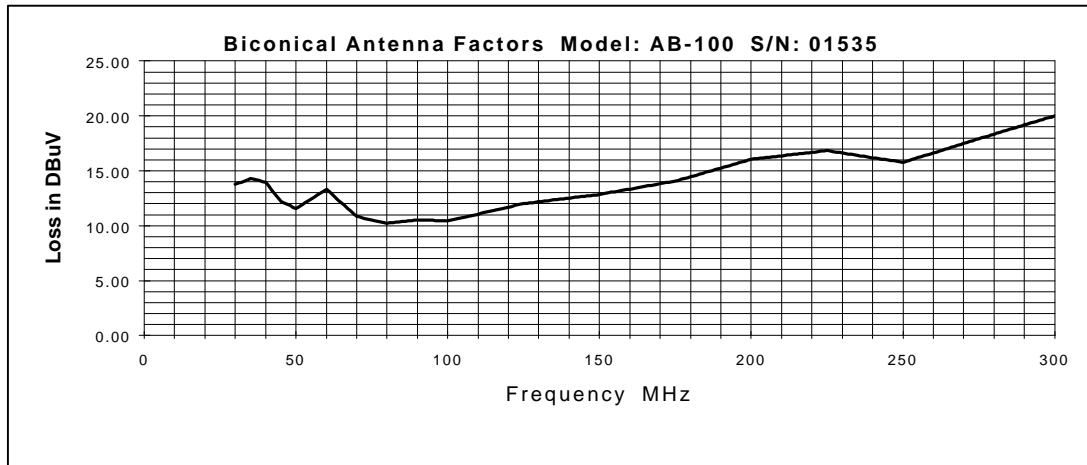


FIGURE 1: CONDUCTED EMISSIONS TEST SETUP



Com-Power Corporation

(949) 587-9800

Antenna Calibration		
Antenna Type: Loop Antenna	Transmit Antenna Height: 2 meters	
Model: AL-130	Receive Antenna Height: 2 meters	
Serial Number: 17054		
Calibration Date: 1/6/99		
Frequency MHz	Magnetic (dB/m)	Electric (dB/m)
0.01	-41.3	10.2
0.02	-42.2	9.3
0.03	-40.5	11.0
0.04	-40.8	10.7
0.05	-42.1	9.4
0.06	-41.7	9.8
0.07	-41.8	9.7
0.08	-42.1	9.4
0.09	-42.3	9.2
0.1	-42.3	9.2
0.2	-44.6	6.9
0.3	-42.1	9.4
0.4	-42.2	9.3
0.5	-42.2	9.3
0.6	-42.1	9.4
0.7	-42.0	9.5
0.8	-42.0	9.5
0.9	-41.9	9.6
1	-41.4	10.1
2	-40.6	10.9
3	-40.9	10.6
4	-41.1	10.4
5	-40.5	11.0
6	-40.5	11.0
7	-40.9	10.6
8	-41.1	10.4
9	-40.6	10.9
10	-40.9	10.6
12	-41.6	9.9
14	-41.9	9.6
15	-42.1	9.4
16	-42.3	9.2
18	-42.1	9.4
20	-42.4	9.1
25	-43.4	8.1
30	-45.6	5.9





FRONT SIDE

LISTEN TECHNOLOGIES CORPORATION

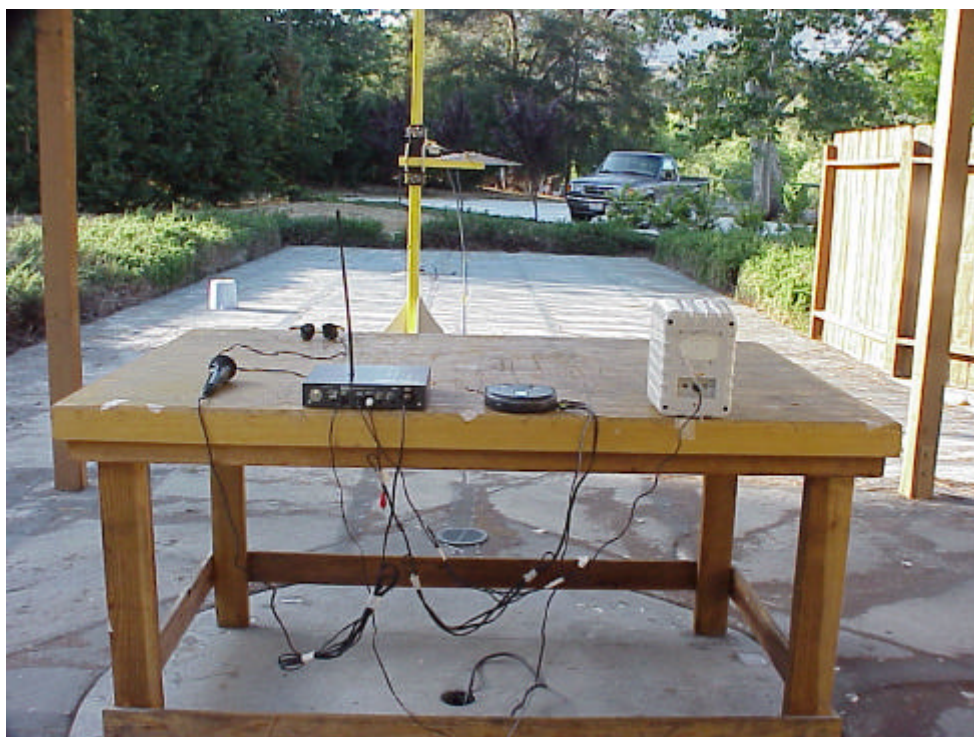
BASE STATION TRANSMITTER

Model: LT-800-072

FCC PART 15 SUBPART B & C - RADIATED EMISSIONS – 6-10-99

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**





BACK SIDE

LISTEN TECHNOLOGIES CORPORATION

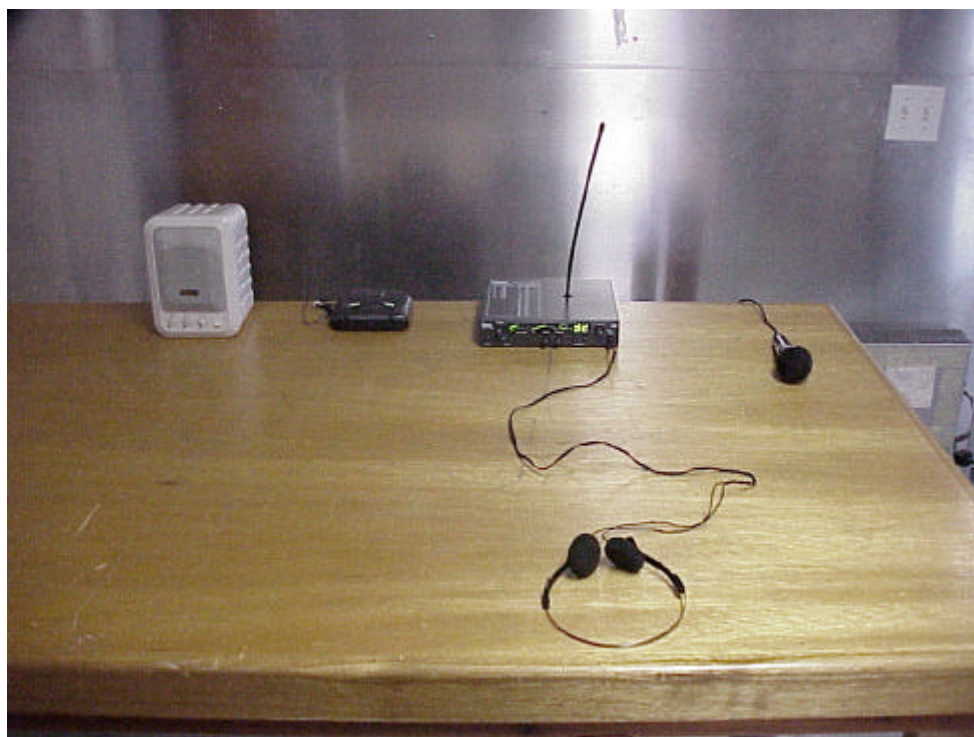
BASE STATION TRANSMITTER

Model: LT-800-072

FCC PART 15 SUBPART B & C - RADIATED EMISSIONS – 6-10-99

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**





FRONT SIDE

LISTEN TECHNOLOGIES CORPORATION

BASE STATION TRANSMITTER

Model: LT-800-072

FCC PART 15 SUBPART B & C - CONDUCTED EMISSIONS – 6-10-99

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**





BACK SIDE

LISTEN TECHNOLOGIES CORPORATION

BASE STATION TRANSMITTER

Model: LT-800-072

FCC PART 15 SUBPART B & C - CONDUCTED EMISSIONS – 6-10-99

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



APPENDIX D



RADIATED EMISSIONS

COMPANY NAME: LISTEN TECHNOLOGIES DATE: 6-10-99

EUT: BASE STATION TRANSMITTER EUT S/N: —

EUT MODEL: LT-800-072 LOCATION: ☐ BREA ☐ SILVERADO ☒ AGOURA

SPECIFICATION: FC PT 15 CLASS: — TEST DISTANCE: 3m LAB: F

ANTENNA: ☐ LOOP ☒ BICONICAL ☐ LOG ☐ HORN POLARIZATION: ☒ VERT ☐ HORIZ

☒ QUALIFICATION ☐ ENGINEERING ☐ MFG. AUDIT ENGINEER: J. MATOLANGBAYAN

NOTES:

FUND. 98.1 dB μ V/m
HARM. 63.5 dB μ V/m

Humid: 58%
TEMP: 22°C

Frequency (MHz)	Peak Reading (dB μ V/m)	Quasi- Peak (dB μ V/m)	Antenna Height (meters)	Azimuth (degrees)	Delta * (dB)	Corrected Limit (dB μ V/m)	Comments
72.08	110.1		1.0	270°	-11.4	121.5	HIGH
72.07	103.7		1.0	270°	-17.8	121.5	MID
72.07	90.2		1.0	270°	-31.3	121.5	LOW
74.69	110.7		1.0	270°	-11.1	121.8 87.2	to HIGH
74.69	104.9		1.0	270°	-16.9	121.8	MID
74.69	90.3 110.		1.0	270°	-31.5	121.8	HIGH LOW
76.04	111.3		1.0	270°	-10.5	121.8	HIGH
76.04	105.4		1.0	270°	-16.4	121.8	MID
76.04	87.7		1.0	270°	-34.1	121.8	LOW

* DELTA = METER READING - CORRECTED LIMIT

RADIATED EMISSIONS - CONTINUATION SHEET

COMPANY NAME: LISTEN TECHNOLOGIES DATE: 6-10-99

EUT: BASE STATION TRANSMITTER EUT S/N: —

EUT MODEL: LT-800-072 ENGINEER: J. MADLANGBAYAN

ANTENNA: ☐ LOOP ☒ BICONICAL ☒ LOG ☐ HORN POLARIZATION: ☒ VERT ☐ HORIZ

HARM. = 63.5 dBμV limit

QUAL.

Frequency (MHz)	Peak Reading (dBuV/m)	Quasi- Peak (dBuV/m)	Antenna Height (meters)	Azimuth (degrees)	Delta * (dB)	Corrected Limit (dBuV/m)	Comments
144.11	71.7		1.0	270°	-12.8	84.5	CHANNEL 01
216.18	65.6		1.0	270°	-14.4	80.0	
288.23	57.1		1.5	270°	-19.8	76.9	
360.24	64.0		1.5	180°	-15.2	79.2	
432.33	48.1		1.5	0°	-30.6	78.7	
504.38	46.8		1.0	180°	-30.0	76.8	
648.47	47.1		1.0	0°	-25.3	72.4	
149.34	76.8		1.0	270°	-7.4	84.2	CHANNEL 33
224.00	70.1		1.0	270°	-9.6	79.7	
298.66	58.8		2.0	270°	-17.2	76.0	
373.27	59.7		1.5	270°	-18.7	78.1	
447.92	55.5		1.0	180°	-24.2	79.7	
522.58	48.6		1.0	180°	-27.2	75.8	
547.22 595.72	43.7		1.0	180°	-30.2 -30.4	73.9 74.1	
671.87	46.5		1.0	0°	-25.5	72.0	
746.51	47.8		1.0	0°	-22.9	70.7	
720.52	49.4		1.5	180°	-21.8	71.2	

* DELTA = METER READING - CORRECTED LIMIT

**RADIATED EMISSIONS - CONTINUATION SHEET**

COMPANY NAME: LISTEN TECHNOLOGIES

DATE: 6-10-99

EUT: BASE STATION TRANSMITTER

EUT S/N: _____

EUT MODEL: LT-800-Ø72

ENGINEER: J. MADLANGBAYAN

ANTENNA: ☐ LOOP ☒ BICONICAL ☒ LOG ☐ HORN

POLARIZATION: ☒ VERT ☐ HORIZ

QUAL,

[illegible]

* DELTA = METER READING - CORRECTED LIMIT

RADIATED EMISSIONS

COMPANY NAME: LISTEN TECHNOLOGIES DATE: 6-10-99
 EUT: BASE STATION TRANSMITTER EUT S/N:
 EUT MODEL: LT-800-072 LOCATION: ☐ BREA ☐ SILVERADO ☒ AGOURA
 SPECIFICATION: FCC PT 15 CLASS: — TEST DISTANCE: 3m LAB: F
 ANTENNA: ☐ LOOP ☒ BICONICAL ☐ LOG ☐ HORN POLARIZATION: ☐ VERT ☒ HORIZ
☒ QUALIFICATION ☐ ENGINEERING ☐ MFG. AUDIT ENGINEER: J. MADLANGBAYAN

NOTES:

01 - 72 ~
 33 - 75 ~
 32 - 76 ~

FUND. 98.1 dBm/m ~~3m 10.7 12.5~~
 HARM. 63.5 dBm/m

Frequency (MHz)	Peak Reading (dBuV/m)	Quasi- Peak (dBuV/m)	Antenna Height (meters)	Azimuth (degrees)	Delta * (dB)	Corrected Limit (dBuV/m)	Comments
72.08	111.8		2.0	270°	-9.7	121.5	HIGH
72.08	106.0		2.0	270°	-15.0	121.5	MID
72.08	92.4		2.0	270°	-29.1	121.5	LOW
74.68	110.2 110.2		2.0	270°	-11.6 -11.6	121.8	HIGH
74.68	104.2		2.0	270°	-17.6	121.8	MID
74.68	89.2 110.2		2.0	270°	-32.6	121.8	LOW
76.04	109.5		2.0	270°	-12.3	121.8 87.2	HIGH
76.04	104.0		2.0	270°	-17.8	121.8 87.2	MID
76.04	85.5		2.0	270°	-36.3	121.8 87.2	LOW

* DELTA = METER READING - CORRECTED LIMIT

RADIATED EMISSIONS - CONTINUATION SHEET

COMPANY NAME: LISTEN TECHNOLOGIES DATE: 6-10-99

EUT: BASESTATION TRANSMITTER EUT S/N:

EUT MODEL: LT-800-072 ENGINEER: J. MADUANGBAYAN

ANTENNA: ☐ LOOP ☒ BICONICAL ☒ LOG ☐ HORN POLARIZATION: ☐ VERT ☒ HORIZ

QUAL

Frequency (MHz)	Peak Reading (dBuV/m)	Quasi- Peak (dBuV/m)	Antenna Height (meters)	Azimuth (degrees)	Delta * (dB)	Corrected Limit (dBuV/m)	Comments
144.3	75.4		2.0	270°	-9.1	84.5	CHANNEL 01
216.18	70.0		2.0	270°	-10.0	80.0	
288.24	55.2		2.0	270°	-21.7	76.9	
360.25	61.5		1.0	0°	-17.7	79.2	
432.33	55.7		2.0	90°	-24.8	80.5	
504.38	44.7		1.0	180°	-32.1	76.8	
576.42	46.6		1.0	270°	-27.5	74.1	
648.47	46.0		1.5	0°	-26.4	72.4	
149.35	79.0		2.0	270°	-5.2	84.2	CHANNEL 33
223.98	71.5		2.0	270°	-8.2	79.7	
298.65	57.7		2.0	270°	-18.3	76.0	
373.28	54.4		2.0	180°	-23.7	78.1	
447.92	46.4		2.0	0°	-33.3	79.7	
522.58	48.7		2.0	0°	-27.1	75.8	
597.22	45.7		2.0	0°	-18.6	64.3	
671.88	45.1		2.0	180°	-26.9	72.0	
746.60		NPF					
720.50	52.7		1.0	0°	-18.5	71.2	

* DELTA = METER READING - CORRECTED LIMIT

RADIATED EMISSIONS - CONTINUATION SHEET

COMPANY NAME: LISTEN TECHNOLOGIES

DATE: 6-10-99

EUT: BASE STATION TRANSMITTER

EUT S/N: _____

EUT MODEL: LT-800-072

ENGINEER: J. MADUANGBAYAN

ANTENNA: ☐ LOOP ☒ BICONICAL ☒ LOG ☐ HORN

POLARIZATION: ☐ VERT ☒ HORIZ

QUAL

[illegible]

* DELTA = METER READING - CORRECTED LIMIT

Test location: Compatible Electronics

Customer : Listen Technologies

Date : 6/25/1999

Manufacturer :

Time : 2.19

EUT name : Base Station Transmitter

Model: LT-800-072

Specification: Fcc_B Test distance: 3.0 mtrs

Lab: E

Distance correction factor(20*log(test/spec))

: 0.00

Test Mode : 20°C TEMP
76% HUMID

Pol	Freq MHz	Rdng dBuV	Cable loss dB	Ant factor dB	Amp gain dB	Cor'd rdg = R dBuV	limit = L dBuV/m	Delta R-L dB
1H	304.92	57.80	3.13	14.07	35.40	39.60	46.00	-6.40
2H	440.42	43.80	3.86	15.78	35.18	28.26	46.00	-17.74
3H	660.61	43.70	4.73	21.46	34.88	35.01	46.00	-10.99
4H	677.56	39.60	4.93	21.50	34.84	31.18	46.00	-14.82
5H	694.52	40.00	5.13	21.53	34.81	31.85	46.00	-14.15
6H	801.32	45.10	5.79	23.34	34.31	39.93	46.00	-6.07
7H	912.01	44.60	6.07	25.29	33.98	41.99	46.00	-4.01
8H	988.01	49.20	6.38	24.43	33.90	46.10	54.00	-7.90
9V	304.91	52.70	3.13	14.07	35.40	34.50	46.00	-11.50
10V	389.60	45.80	3.64	18.34	35.48	32.29	46.00	-13.71
11V	440.40	41.50	3.86	15.78	35.18	25.96	46.00	-20.04
12V	660.59	39.90	4.73	21.46	34.88	31.21	46.00	-14.79
13V	801.29	44.20	5.79	23.34	34.31	39.03	46.00	-6.97
ambient same as 6H								
14V	911.99	46.80	6.07	25.29	33.98	44.19	46.00	-1.81
15V	912.00	46.09	6.07	25.29	33.98	43.48Qp	46.00	-2.52
16V	987.99	52.10	6.38	24.43	33.90	49.00	54.00	-5.00
17H	271.03	48.80	2.88	17.59	35.50	33.77	46.00	-12.23
18H	237.15	53.30	2.70	16.32	35.55	36.77	46.00	-9.23
19H	169.41	54.60	2.20	13.80	35.64	34.95	43.50	-8.55

RADIATED EMISSIONS (FCC SECTION 15.237 AND 15.209)

COMPANY	LISTEN TECHNOLOGIES	DATE	6/10/99
STATION	BASE STATION TRANSMITTER	TEST TYPE	0.00 %
MODEL	LT 800-072	TEST TO STD	0 dB
USE	NONE	TEST DIST	3 METERS
TEST LOCATION	J. MADLANGBAYAN	FILE	F

Frequency (MHz)	Power (dBm)	Modulation	Antenna Factor (dB)	Antenna Loss (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Delta (dB)	Pass/Fail
360.1250	55.6	QP H	1.0	270		15.6	3.8	35.4
								39.6
								-23.9
								63.5
								fdf
360.1250	53.2	QP V	1.0	270		15.6	3.8	35.4
								37.2
								-26.3
								63.5
373.1250	56.6	A H	1.0	270		15.6	3.8	35.4
								40.6
								-22.9
								63.5
373.1250	55.5	A V	1.0	270		15.6	3.8	35.4
								39.5
								-24.0
								63.5
379.8750	48.7	QP H	1.0	270		15.6	3.8	35.4
								32.7
								-30.8
								63.5
379.8750	52.4	QP V	1.0	270		15.6	3.8	35.4
								36.4
								-27.1
								63.5

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

COMPANY	LISTEN TECHNOLOGIES	DATE	6/10/99
EVT	BASE STATION TRANSMITTER	DWY CYCLE	0.00 %
MODEM	LT 800-072	PEAK TO AVG	0 dB
ON	NONE	TESTING	3 METERS
TEST ENGINEER	J. MADLANGBAYAN	LAB	F

[illegible]

**** DELTA = SPEC LIMIT - CORRECTED READING**

COMPANY	LISTEN TECHNOLOGIES	DATE	6/10/99
UNIT	BASE STATION TRANSMITTER	DUTY CYCLE	0.00 %
MODE	LT 800-072	PEAK TO AVE	0 dB
PA	NONE	TEST MET.	3 METERS
TEST ENGINEER	J. MADLANGBAYAN	LAB	F

[illegible]

PAGE 8

RADIATED EMISSIONS (FCC SECTION 15.237 AND 15.209)

COMPANY	LISTEN TECHNOLOGIES	DATE	6/10/99
SET	BASE STATION TRANSMITTER	TEST CYCLE	0.00 %
MODEL	LT 800-072	TEST RANGE	0 dB
LOC	NONE	TEST DATE	3 METERS
TEST PERSONNEL	J. MADLANGBAYAN	LOC	F

[illegible]

*** CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS + AMPLIFIER GAIN**

**** DELTA = SPEC LIMIT - CORRECTED READING**

MEASUREMENT NOTES:

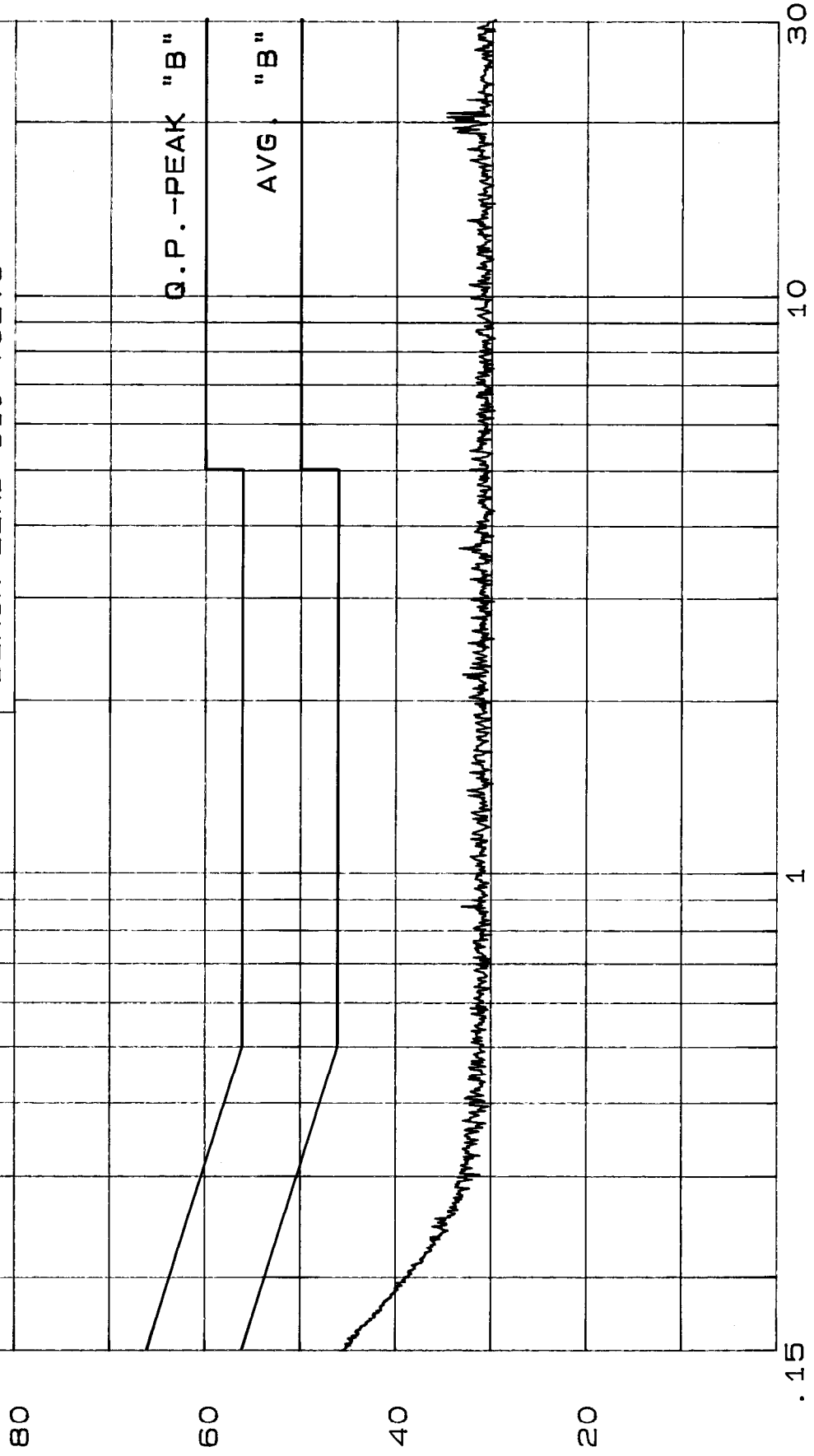
LISTEN TECHNOLOGIES	DATE: 6-10-99
BASE STATION TRANSMITTER	TIME: 08:16:20
MN: LT-800-072	TEST ENGINEER
BLACK LEAD 110 VOLTS	J. MADLANGBAYAN

Peaks above -25 dB of Limit Line #1
peak criteria = 2 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.3049	33.2	-16.9
2	.3748	32.9	-15.4
3	.4101	32.7	-14.9
4	.8788	33.1	-12.9
5	1.4	32.5	-13.5
6	1.5	32.2	-13.8
7	2.219	33	-13.0
8	2.52	32.4	-13.6
9	2.786	32.1	-13.9
10	3.248	32.2	-13.8
11	3.669	33.4	-12.6
12	5.014	32.3	-17.7
13	5.399	32.3	-17.7
14	10.46	32.4	-17.6
15	13.49	32.6	-17.4
16	17.95	32.6	-17.4
17	19.23	33.7	-16.3
18	19.54	34.2	-15.8
19	20.39	34.8	-15.2
20	20.71	34.8	-15.2
21	21.84	32.7	-17.3

hp₁₀₀

EN55022 B/ CISPR 22 B/ VCCI B
LISTEN TECHNOLOGIES
BASE STATION TRANSMITTER
LT-800-072
BLACK LEAD 110 VOLTS



FREQUENCY [MHz]

MEASUREMENT NOTES:

LISTEN TECHNOLOGIES
BASE STATION TRANSMITTER
MN: LT-800-072
WHITE LEAD 110 VOLTS

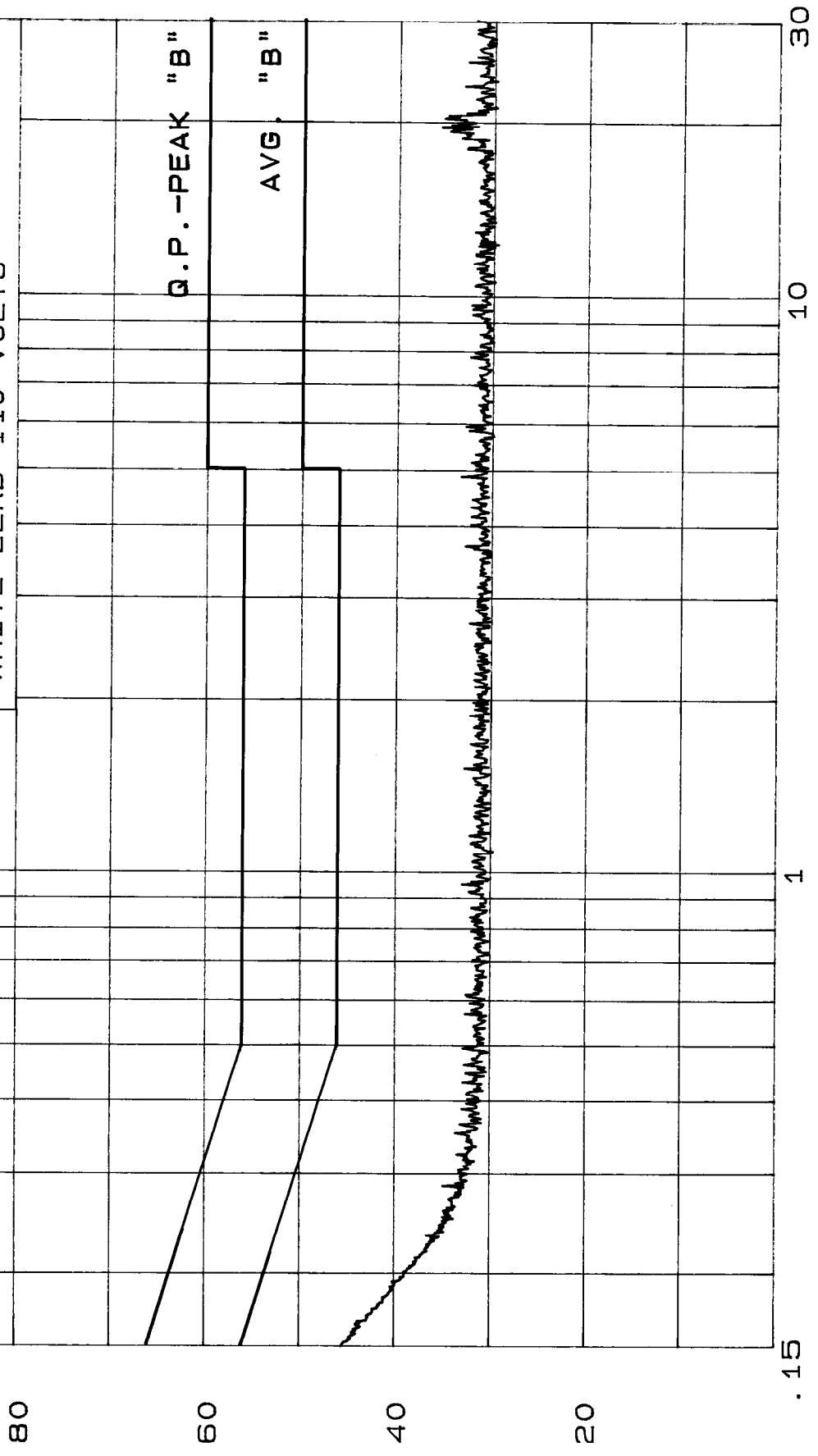
DATE: 6-10-99
TIME: 08:24:42
TEST ENGINEER
J. MADLANGBAYAN

Peaks above -25 dB of Limit Line #1
peak criteria = 2 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.2861	34.9	-15.7
2	.3536	33.6	-15.2
3	.3889	32.9	-15.1
4	.4324	32.8	-14.4
5	.4631	32.7	-13.9
6	.4961	32.8	-13.2
7	.5693	32.6	-13.4
8	.9564	33	-13.0
9	1.163	32.2	-13.8
10	1.516	32.8	-13.2
11	2.713	32.3	-13.7
12	3.688	32.8	-13.2
13	4.857	33.3	-12.7
14	5.939	32.8	-17.2
15	7.821	32.4	-17.6
16	9.264	32.2	-17.8
17	9.614	32.3	-17.7
18	11.39	32.1	-17.9
19	12.86	32	-18.0
20	17.95	32.9	-17.1
21	19.23	34.7	-15.3
22	19.54	35.6	-14.4
23	19.75	34.6	-15.4
24	20.28	35.3	-14.7
25	23.02	33.2	-16.8
26	25.33	32.8	-17.2

hp
100

EN55022 B/ CISPR 22 B/ VCCI B
LISTEN TECHNOLOGIES
BASE STATION TRANSMITTER
LT-800-072
WHITE LEAD 110 VOLTS



FREQUENCY [MHz]