D.L.S. ELECTRONIC SYSTEMS, INC.
1250 PETERSON DRIVE
WHEELING, ILLINOIS 60090

EMC TEST SERVICES
REPORT NO**.** 6588

TEST SPECIFICATION:

FCC "Rules and Regulations", Part 74,
Experimental Radio, Auxiliary, Special Broadcast and Other Program
Distribution Services for operation in the 782 to 806 MHz Band

Subpart H, Low Power Auxiliary Stations
Sections 74.801 to 74.882

THE FOLLOWING **"MEETS"** THE ABOVE TEST SPECIFICATION

Formal Name:	Shure Brothers UHF Wireless Body Pack Transmitter
Kind of Equipment:	Body Pack UHF Transmitter
Test Configuration:	Battery Powered Transmitter
Emission Designator:	12OKF3E
Transmitter FCC ID:	DD4UlH
Model Number:	UlH
Serial Number:	NA
Dates of Test:	April 21, 1998
Test Conducted For:	Shure Brothers Incorporated 222 Hartrey Avenue Evanson, Illinois 60202

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1250 Peterson Drive
Wheeling, Illinois 60090

REPORT NO. 6588

SIGNATURE PAGE

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Shure Brothers Incorporated

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1.0 SUMMARY OF TEST REPORT

It was found that the Shure Brothers UHF Wireless Body Pack Transmitter, SIN NA **"meets"** the radio interference emission requirements of the FCC "Rules and Regulations", Part 74, Subpart H, Sections 74.801 to 74.882 for Low Power Auxiliary Stations operating in the 782 to 806 MHz Frequency Band.

2.0 INTRODUCTION

On April 21, 1998, a series of radio frequency interference measurements were performed on Body Pack UHF Transmitter, SIN NA. The tests were performed according to the procedures of FCC as stated in Part 2 Subpart J, Equipment Authorization Procedures of the Code of Federal Regulations 47, by personnel of D.L.S. Electronic Systems, Inc. who are responsible to Donald. L. Sweeney, Senior EMC Engineer.

3.0 OBJECT

The purpose of this series of tests was to determine if the test sample could meet the radio frequency emission requirements of the FCC "Rules and Regulations", Part 74, Subpart H, Sections 74.801 to 74.882 for Low Power Auxiliary Stations operating in the 782 to 806 MHz Frequency Band.

4.0 TEST SET-UP

All radiated emission tests were performed at D.L.S. Electronic Systems, Inc. The radiated tests were made with the test item placed on a wooden turntable located in the Test Room with the receive antenna placed one meter from the device under test.

5.0 TEST EQUIPMENT (Bandwidths and Detector Function)

All data was automatically plotted using peak detector function. This information was then used to determine the frequencies of maximum emissions. Manual measurements were performed on these frequencies using a peak detector function of the Analyzer with the bandwidths specified by the FCC. From 200 MHz to 1000 MHz a bandwidth of 100 kHz was used (except for Occupied Bandwidth), and above 1000 MHz, wide enough bandwidths were used, depending upon the test being made, to ensure proper measurement of the narrowband signal.

A list of the equipment used can be found in Table 1. All equipment was calibrated per the instruction manuals supplied by the manufacturer.

6.0 RF POWER OUTPUT - PART 2.985

As stated in PART 74.861 (e-1) , the output power should not exceed **250 milliwatts (24 dBm).** The Shure Brothers UHF Wireless Body Pack Transmitter was tuned according to the tune-up procedures specified in Part 2.983 (d-5) , and adjusted for its maximum output power. **The RF output power was measured in the open field,** using the following test method:

The radiated signal from the EUT was measured. The EUT was then substituted with a signal generator and a tuned dipole antenna. The output of the signal generator was increased until the level received by the tuned dipole equaled that of the previous measured from the EUT.

Actual Measurements Taken:

86.10 dBuV Measured output of the transmitter

+33.22 dBuV Total system losses (Antenna, Pads & Cable)

119.32 dBuV which equals **.017061 watts**

LIMIT:

Manufacturer's rated output power = .10 **watts**
50 PPM

MARGIN:

250 watts - .017061 watts = **249.983 watts**

See the following graphs for actual measurements made:

GRAPHS TAKEN OF THE RF POWER

OUTPUT MEASUREMENTS

PART 2.985

NOTE: Charts taken during testing are available upon request.

7.0 Modulation Characteristics - Part 2.987

a. Voice modulated communication equipment

A curve showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz is submitted with this report.

b. Equipment which employs modulation limiting

A family of curves showing the percentage of modulation versus the modulation input voltage with sufficient information showing the modulation limiting capability throughout the range of modulating frequencies and input modulating signal levels employed.

NOTE:

See Underwriters Laboratories Inc. test report NC2103 for the modulation characteristics test data.

GRAPHS TAKEN SHOWING THE FREQUENCY

RESPONSE OF THE

AUDIO MODULATING CIRCUIT

PART 2.987

NOTE: See Underwriters Laboratories Inc. test report NC2103 for the modulation characteristics test data.

GRAPHS TAKEN SHOWING THE

PERCENTAGE OF MODULATION

VERSUS

THE MODULATION INPUT VOLTAGE

PART 2.987

NOTE: See Underwriters Laboratories Inc. test report NC2103 for the modulation characteristics test data.

8.0 OCCUPIED BANDWIDTH - PART 2.989

The frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to .5% of the total mean power radiated by a given emission.

As stated in Part 2.989 c-1 the Shure Brothers UHF Wireless Body Pack Transmitter was modulated by a 2500 Hz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation. This input level was established at the frequency of maximum response of the audio modulating circuit.

The Shure Brothers UHF Wireless Body Pack Transmitter uses the same frequency range as television broadcast monaural transmitters so the test was also run using a 15 kHz input signal modulated by 85% as stated in Part 2.989 e-6.

Paragraph e-5 states that the maximum authorized bandwidth shall be **200** kHz for all emissions inside these frequency bands.

Carson's Rule: Section 2.202 (g)

Bn = 2M+2DK, K=l Bn = Bandwidth

M = 15 kHz, M = Maximum Modulating Frequency

D = 45 kHz, D = Peak Deviation

Bn = 2(15) + 2(45)(1) = **120 kHz**

NOTE:

See the following pages for the graphs of the actual measurements made:

NOTE:

See Underwriters Laboratories Inc. test report NC2103 for the occupied bandwidth test data.

GRAPHS TAKEN OF THE OCCUPIED BANDWIDTH

PART 2.989

NOTE: See Underwriters Laboratories Inc. test report NC2103 for the modulation characteristics test data.

9.0 Frequency Deviation and Tolerance - PART 74.861

Paragraph e-3 states that the maximum authorized deviation shall be 75 kHz for all frequency modulation emissions in the frequency bands 782 to 806 MHz.

Frequency Deviation used: **45 kHz, 100% modulation**

Paragraph e-4 states that the frequency tolerance of the transmitter shall be .005 percent.

NOTE:

See Underwriters Laboratories Inc. test report NC2103 for the frequency deviation test data.

GRAPHS TAKEN OF THE FREQUENCY DEVIATION

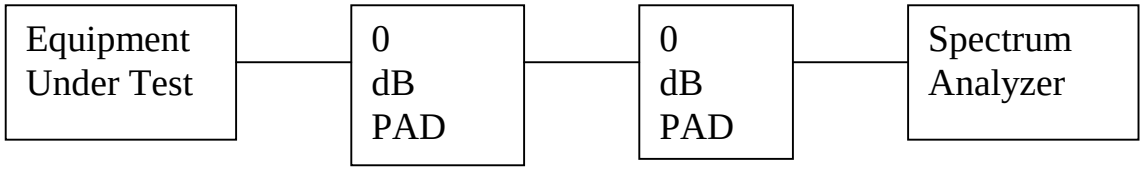
WITH MODULATION

PART 2.989

NOTE: See Underwriters Laboratories Inc. test report NC2103 for the frequency deviation test data.

10.0 SPURIOUS CONDUCTED EMISSION MEASUREMENTS AT ANTENNA TERMINALS PART 2.991

Spurious conducted emissions were measured at the antenna terminals using an artificial load. Plots were made showing the amplitude of each harmonic emissions with the equipment operated as specified in 2.989. As shown by the radiated charts there was no reason to believe that there were any spurious emissions other than the harmonics which were then individually investigated when doing the conducted test at the antenna terminals. Measurements were made up to the 10th Harmonic of the fundamental. The following setup was used showing placement of the attenuators:



The allowed emissions for transmitters operating in the 782 to 806 MHz bands for Shure Brothers UHF Wireless Body Pack Transmitter equipment are found under Part 74, Section 74.861, Paragraph e-6 for Low Power Auxiliary Stations. This paragraph states the mean power of the emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(1) on any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB.

(2) on any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB.

(3) on any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least 43+lOLogl0 (mean output power in watts) dB.

NOTE: See the following pages for the data and graphs of the actual measurements made:

NOTE: This test was not run because there is no antenna port.

CONDUCTED EMISSION DATA TAKEN FOR

SPURIOUS EMISSION MEASUREMENTS MADE

AT THE ANTENNA TERMINALS

PART 2.991

NOTE: This test was not run because there is no antenna port.

CONDUCTED EMISSION GRAPHS TAKEN FOR

SPURIOUS EMISSION MEASUREMENTS MADE

AT THE ANTENNA TERMINALS

PART 2.991

NOTE: This test was not run because there is no antenna port.

11.0 FIELD STRENGTH OF SPURIOUS EMISSION MEASUREMENTS

Radiated measurements were performed at a 1 or 3 meter test distance automatically scanning the frequency range from 200 MHz to 8500 MHz, depending upon the fundamental frequency.

For the Shure Brothers UHF Wireless Body Pack Transmitter, the highest fundamental frequency is 806 MHz so the scans were made up to 8500 MHz, to cover the tenth harmonic.

All signals in the frequency range of 30 MHz to 200 MHz were measured with a Biconical Antenna and from 200 MHz to 1000 MHz a Log Periodic Antenna was used as the pickup devices. From 1000 MHz to 10000 MHz, a Double Ridge Horn Antenna was used. The cables and equipment were placed and moved within the range of positions likely to find their maximum emissions. Tests were made in both the horizontal and vertical planes of polarization.

The allowed emissions for transmitters operating in the 782 to 806 MHz bands for Shure Brothers UHF Wireless Body Pack Transmitter equipment are found under Part 74, Section 74.861, Paragraph e-6 for Low Power Auxiliary Stations. This paragraph states the mean power of the emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

(1) on any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB.

(2) On any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB.

(3) on any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least 43+lOLoglo (mean output power in watts) dB.

11.0 FIELD STRENGTH OF SPURIOUS EMISSION MEASUREMENTS (CON'T) PART 2.993

To determine the limit for all spurious & harmonic emissions, the following method was used:

LIMIT for Spurious Emissions:

As stated in Part 74, Section 74.861 (e-1 ii) the limit is 250 mW in the frequency range 614 MHz to 806 MHz.

43 + 10ILOG10(250 watts) = 66.98 d]3

53.98 dBm extrapolated level for .10 watts
-66.98 dB required reduction below the unmodulated fundamental
-13 dBm or 94 dBuV/m at 1 meter maximum spurious emissions allowed

Extrapolating the level to 3 meters:

94 dBuV/m - 9.54 dB = 84.46 dBuV/m at 3 meters

See the following data and graphs for actual measurements made:

RADIATED DATA TAKEN FOR FIELD STRENGTH

SPURIOUS EMISSION MEASUREMENTS

PART 2.993

D.L.S. ELECTRONIC SYSTEMS, INC.

EMC TEST SERVICES
REPORT NO. 6588

SUMMARY DATA SHEET OF RADIATED SPURIOUS EMISSIONS >**1000 MHz**

TEST DATE: ------- April 21, 1998
MANUFACTURER: Shure Brothers Incorporated
MODEL NO: -------- UlH
SIN: ---------- NA
CONFIGURATION:- **Freq Range (782-806 MHz) Fund Freq - 782.0 MHz**
RATED POWER:-----.10 **Watts**

TEST SPECIFICATION: FCC "RULES AND REGULATION", PART 74,
SUBPART H / SECTION 74.861

******LOW POWER AUXILIARY STATIONS******

TEST EQUIPMENT: SPECTRUM ANALYZER -- HP 8566B

TYPE OF TEST: RADIATED **VERTICAL** MEASURED **AT 3 METERS**

NOTE: LIMIT LINE ON THE CHARTS INCLUDE ALL CORRECTION FACTORS

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	ANTENNA FACTOR dB	CABLE LOSSES dB	PRE-AMP GAIN dB	TOTAL dBuV	LIMIT dBuV	MARGIN dB
1565.00	36.10	28.80	1.50	00	66.40	84.46	18.06
3911.00	38.30	32.87	2.93	00	74.10	94.00	19.90

D.L.S. ELECTRONIC SYSTEMS, INC.

EMC TEST SERVICES
REPORT NO. 6588

SUMMARY DATA SHEET OF RADIATED SPURIOUS EMISSIONS >1000 **MHz**

TEST DATE: ------- ---------April 21, 1998
MANUFACTURER: ---------Shure Brothers Incorporated
MODEL NO: ---------- UlH
SIN: ----------NA
CONFIGURATION: ---------**Freq Range (782-806 MHz) Fund Freq - 782.0 MHz**
RATED POWER: ----------.10 **Watts**

TEST SPECIFICATION: FCC "RULES AND REGULATION", PART 74,
SUBPART H / SECTION 74.861

******LOW POWER AUXILIARY STATIONS******

TEST EQUIPMENT: SPECTRUM ANALYZER -- HP 8566B

TYPE OF TEST: RADIATED **HORIZONTAL** MEASURED **AT 3 METERS**

NOTE: LIMIT LINE ON THE CHARTS INCLUDE ALL CORRECTION FACTORS

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	ANTENNA FACTOR dB	CABLE LOSSES dB	PRE-AMP GAIN dB	TOTAL dBuV	LIMIT dBuV	MARGIN dB .
1565.00	32.60	28.80	1.50	.00	62.90	84.46	21.56
2346.00	32.80	28.46	2.81	.00	64.07	94.00	29.93
3125.00	35.10	30.72	3.71	.00	69.53	94.00	24.47
3911.00	38.10	32.87	1.90	.00	72.87	94.00	21.13
5473.00	32.10	34.93	4.24	.00	71.27	94.00	22.73
7820.00	32.00	37.34	6.76	.00	76.10	94.00	17.90

D.L.S. ELECTRONIC SYSTEMS, INC.

EMC TEST SERVICES
REPORT NO. 6588

SUMMARY DATA SHEET OF RADIATED SPURIOUS EMISSIONS >1000 **MHz**

TEST DATE: ---------- April 21, 1998
MANUFACTURER: ------- Shure Brothers Incorporated
MODEL NO: -------- ---------UlH
S/N: ----------NA
CONFIGURATION: ---------**Freq Range (782-806 MHz) Fund Freq - 794.0 MHz**
RATED POWER: ----------.10 **Watts**

TEST SPECIFICATION: FCC "RULES AND REGULATION", PART 74,
SUBPART H / SECTION 74.861

******LOW POWER AUXILIARY STATIONS******

TEST EQUIPMENT: SPECTRUM ANALYZER -- HP 8566B

TYPE OF TEST: RADIATED **VERTICAL** MEASURED **AT 3 METERS**

NOTE: LIMIT LINE ON THE CHARTS INCLUDE ALL CORRECTION FACTORS

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	ANTENNA FACTOR dB	CABLE LOSSES dB	PRE-AMP GAIN dB	TOTAL dBuV	LIMIT dBuV	MARGIN dB
1588.00	35.30	28.80	1.50	.00	65.60	84.46	18.86
2380.00	34.00	28.46	2.81	.00	65.27	94.00	28.73
3174.00	33.80	30.72	3.71	.00	68.23	94.00	25.77
3968.00	37.70	32.87	1.90	.00	72.47	94.00	21.53

EMC TEST SERVICES
REPORT NO. 6588

SUMMARY DATA SHEET OF RADIATED SPURIOUS EMISSIONS >1000 **MHz**

TEST DATE: ---------- April 21, 1998
MANUFACTURER --------- Shure Brothers Incorporated
MODEL NO: ---------- UlH
SIN: ---------- NA
CONFIGURATION: -------- **Freq Range (782-806 MHz) Fund Freq - 794.0 MHz**
RATED POWER: ---------- .10 **Watts**

TEST SPECIFICATION: FCC "RULES AND REGULATION", PART 74,
SUBPART H / SECTION 74.861

******LOW POWER AUXILIARY STATIONS******

TEST EQUIPMENT: SPECTRUM ANALYZER -- HP 8566B

TYPE OF TEST: RADIATED **HORIZONTAL** MEASURED **AT 3 METERS**

NOTE: LIMIT LINE ON THE CHARTS INCLUDE ALL CORRECTION FACTORS

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	ANTENNA FACTOR dB	CABLE LOSSES dB	PRE-AMP GAIN dB	TOTAL dBuV	LIMIT dBuV	MARGIN dB
1588.00	34.40	28.80	1.50	.00	64.70	84.46	19.76
2380.00	33.00	28.46	2.81	.00	64.27	94.00	29.73
3174.00	35.10	30.72	3.71	.00	69.53	94.00	24.47
3968.00	37.80	32.87	1.90	.00	72.57	94.00	21.43

SUMMARY DATA SHEET OF RADIATED SPURIOUS EMISSIONS >1000 **MHz**

TEST DATE: ---------- April 21, 1998
MANUFACTURER: --- Shure Brothers Incorporated
MODEL NO: ---------- UlH
S/N: ---------- NA
CONFIGURATION: ---- **Freq Range (782-806 MHz) Fund Freq - 805.5 MHz**
RATED POWER: ------ .10 **Watts**

TEST SPECIFICATION: FCC "RULES AND REGULATION", PART 74,
SUBPART H / SECTION 74.861

******LOW POWER AUXILIARY STATIONS******

TEST EQUIPMENT: SPECTRUM ANALYZER -- HP 8566B

TYPE OF TEST: RADIATED **VERTICAL** MEASURED **AT 3 METERS**

NOTE: LIMIT LINE ON THE CHARTS INCLUDE ALL CORRECTION FACTORS

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	ANTENNA FACTOR dB	CABLE LOSSES dB	PRE-AMP GAIN dB	TOTAL dBuV	LIMIT dBuV	MARGIN dB
1612.00	34.20	28.91	1.35	.00	64.46	84.46	20.00
2414.00	37.60	28.64	3.00	.00	69.24	94.00	24.76
3220.00	37.80	31.03	3.79	.00	72.62	94.00	21.38
4029.00	40.40	33.10	2.30	.00	75.80	94.00	18.20
4835.00	32.90	33.86	4.31	.00	71.07	94.00	22.93

D.L.S. ELECTRONIC SYSTEMS, INC.

EMC TEST SERVICES
REPORT NO. 6588

SUMMARY DATA SHEET OF RADIATED SPURIOUS EMISSIONS >1000 **MHz**

TEST DATE: ----------April 21, 1998
MANUFACTURER: ---------Shure Brothers Incorporated
MODEL NO: ---------- UlH
SIN: ----------NA
CONFIGURATION: ---------**Freq Range (782-806 MHz) Fund Freq - 805.5 MHz**
RATED POWER: ----------.10 **Watts**

TEST SPECIFICATION: FCC "RULES AND REGULATION", PART 74,
SUBPART H / SECTION 74.861

******LOW POWER AUXILIARY STATIONS******

TEST EQUIPMENT: SPECTRUM ANALYZER -- HP 8566B

TYPE OF TEST: RADIATED **HORIZONTAL** MEASURED **AT 3 METERS**

NOTE: LIMIT LINE ON THE CHARTS INCLUDE ALL CORRECTION FACTORS

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	ANTENNA FACTOR dB	CABLE LOSSES dB	PRE-AMP GAIN dB	TOTAL dBuV	LIMIT dBuV	MARGIN dB .
1612.00	35.30	28.91	1.35	.00	65.56	84.46	18.90
2414.00	32.30	28.64	3.00	.00	63.94	94.00	30.06
3220.00	34.70	31.03	3.79	.00	69.52	94.00	24.48
4029.00	37.80	33.10	2.30	.00	73.20	94.00	20.80
4835.00	35.00	33.86	4.31	.00	73.17	94.00	20.83
8058.75	31.50	37.30	6.80	.00	75.60	94.00	18.40

RADIATED GRAPHS TAKEN FOR FIELD STRENGTH

SPURIOUS EMISSION MEASUREMENTS

PART 2.993

NOTE: Charts taken during testing are available upon request.

12.0 FREQUENCY STABILITY - PART 2.995a **(Temperature)**

The frequency stability was measured from -300 to +500 centigrade at intervals of 100 centigrade throughout the range. Prior to each frequency measurement, the equipment was left alone for a sufficient period of time (approximately 30 minutes or more) to allow the components of the Shure Brothers UHF Wireless Body Pack Transmitter oscillator circuitry to stabilize. The following information was taken:

FREQUENCY STABILITY FOR TEMPERATURE VARIATION IN MHz:

-300	805.87297
-200	805.86776
-100	805.87249
00	805.86917
+100	805.87253
+200	805.87424
+300	805.87430
+400	805.87430
+500	805.87530

Worst Case Variance:

2810 Hz

As stated in Part 74, Section 74.861 e-4 the Frequency Tolerance and Margin for this range are as follows:

Frequency Tolerance: = .005%

805.87530 1*.005% = 40293.77 Hz

40293.77 – 2810 = 37483.77 Hz

NOTE: This is well within the specified limit.

RADIATED GRAPHS TAKEN FOR FREQUENCY

STABILITY WHEN VARYING THE TEMPERATURE

PART 2.995a

NOTE: Charts taken during testing are available upon request.

13.0 FREQUENCY STABILITY - PART 2.995d **(Voltage Variation)**

The frequency stability of Shure Brothers UHF Wireless Body Pack Transmitter was measured by varying the primary supply voltage from 85-. to 115% of nominal value for all equipment other than hand carried battery equipment.

FREQUENCY STABILITY FOR VOLTAGE VARIATION:

85% NA	85% NA	85% NA
100% NA	100% NA	100% NA
115% NA	115% NA	115% NA

FREQUENCY STABILITY FOR HAND HELD DEVICES:

For hand carried, battery powered equipment, the supply voltage was reduced to the battery operating end point specified by the manufacturer. Readings were taken at the reduced end point and with a fresh battery:

Fresh Battery verses Battery end point:

Frequency #1 **0 Hz**
Frequency #2 **0 Hz**
Frequency #3 **0 Hz**
Frequency #4 **0 Hz**
Frequency #5 **0 Hz**
Frequency #6 **0 Hz**

As stated in Part 74, Section 74.861 e-4 the Frequency Tolerance and Margin for this range are as follows:

Frequency Tolerance: .005%

Limit: 40293.77 **Hz**

NOTE:

See Underwriters Laboratories Inc. test report NC2103 for the voltage variation test data.

RADIATED GRAPHS TAKEN FOR FREQUENCY

STABILITY WHEN VARYING THE

PRIMARY SUPPLY VOLTAGE

PART 2.995d

NOTE: See Underwriters Laboratories Inc. test report NC2103 for the voltage variation test data.

14.0 PHOTO INFORMATION AND TEST SET-UP

The test set-up can be seen on the accompanying photo page.

Item 0 Shure Brothers UHF Wireless Body Pack Transmitter FCC ID#: DD4UlH SN: NA

Item 1 Shure Brothers 84A Microphone

Item 2

Item 3

Item 4

Item 5

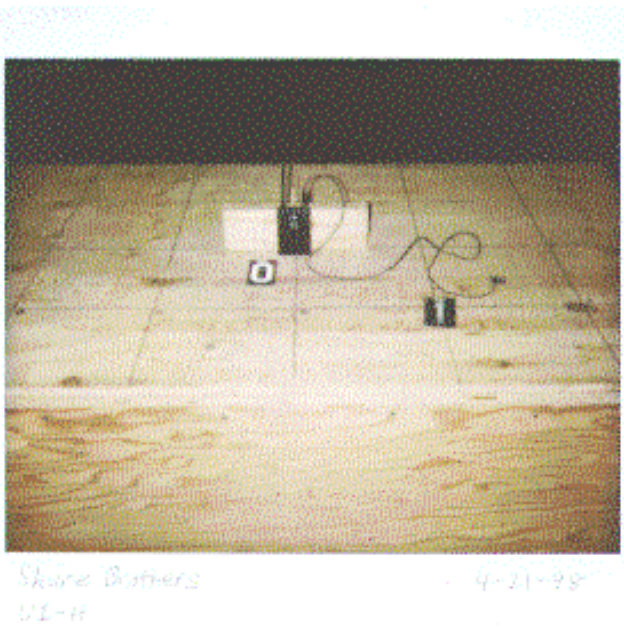
Item 6

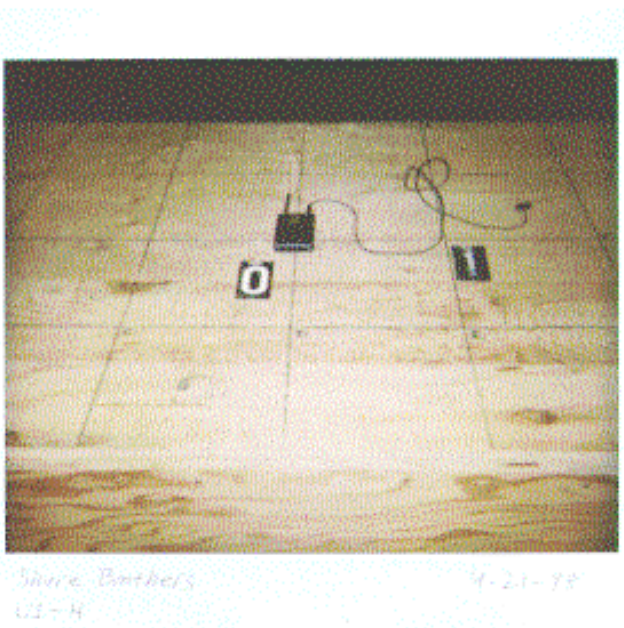
Item 7

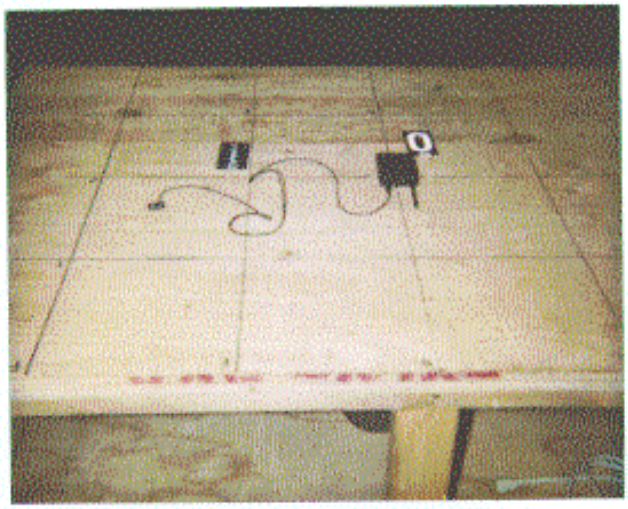
Item 8

Item 9

15.0 RADIATED PHOTOS TAKEN DURING TESTING.







15.0 CONDUCTED PHOTOS TAKEN DURING TESTING

Because this device is battery operated there were no conducted photos taken during testing.

16.0 CHANGE INFORMATION

The following changes were implemented during the testing and must be incorporated into the production units to insure compliance.

Change 1. There were no changes made at D.L.S. Electronic Systems.

Change 2.

Change 3.

Change 4.

Change 5.

NOTE:

For each antenna polarization (vertical & horizontal), the transmitter along with it's cables was maximized for worst case positions (standing up or laying down).

The responsibility of implementing the changes listed in this report is accepted or I certify that no changes were made

Elaine Rhumbaugh — Signature

Section Manager — Title

Shure Brothers Inc. — Company Name

5/14/98 — Date

17.0 RESULTS OF TESTS

The emission test results can be seen on pages at the end of this report. Data sheets indicating the open field radiated measurements can also be found with this report. Those points on the radiated charts shown with a yellow mark are background frequencies which were verified during the test.

18.0 CONCLUSION

It was found that the Body Pack UHF Transmitter, SIN NA -'meets" the radio interference emission requirements of the FCC "Rules and Regulations", Part 74, Subpart H, Sections 74.801 to 74.882 for Low Power Auxiliary Stations operating in the 782 to 806 MHz Frequency Band. This test report relates only to the items tested.

This report contains the following number of pages.

Text:	31 pages
Data Summary:	6 pages
Charts:	40 pages

TABLE 1 - EQUIPMENT LIST

Test Equipment	Manufacturer/ Description	Model Number	Serial Number	Frequency Range	Cal Due Date
Spectrum Analyzer	Hewlett Packard	8566B	2240A02041	5 Hz – 22 GHz	4/98
Quasi-Peak Adapter	Hewlett Packard	8566A	2043A00121	10 kHz – 1 GHz	4/98
Receiver	Electrometrics	EMC-25	772	.01-1000 MHz	10/98
Meter Module	Electrometrics	CRM-25	162	.01-1000 MHz	10/98
Receiver	Electrometrics	EMC-25	804	.01-1000 MHz	10/98
Meter Module	Electrometrics	CRM-25	138	.01-1000 MHz	10/98
Antenna	Electrometrics	BIA-25	2453	20 – 200 MHz	10/98
Antenna	Electrometrics	LPA-25	1114	200 - 1000 MHz	10/98
Antenna	Electrometrics	BIA-25	2614	20 – 200 MHz	10/98
Antenna	Electrometrics	LPA-25	1205	200 - 1000 MHz	10/98
Antenna		DIPOLES		20 – 1000 MHz	I/O
Antenna	Electro-Mechanics Co	3115	2479	1 – 18 GHz	I/O

*Firmware Version 29.9.86 Software Version 85864C Rev A

**Firmware Version 14.1.85 Software Version 85864C Rev A

***Firmware Version 5.1.3 Software Version 82301-12029 Rev C

I/O Initial Calibration Only