



Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

FCC Rules and Regulations / Intentional Radiators

Low Power Auxiliary Stations

Part 74, Subpart H, Sections 74.801 - 74.882

Part 74.861 (d) Other than TV Broadcasting

THE FOLLOWING **MEETS** THE ABOVE TEST SPECIFICATION

Formal Name: P7T Transmitter
Kind of Equipment: Wireless Personal Monitor Transmitter
Test Configuration: Through shielded audio frequency cables (Tested at 120 vac, 60 Hz)
Model Number(s): P7T-X1
Model(s) Tested: P7T-X1
Serial Number(s): # 4 & # 5
Emission Designator: 79.8KF3E
Date of Tests: January 24, 25, 28 & 29, 2008
Test Conducted For: Shure Inc.
5800 Touhy Ave
Niles, Illinois 60714

NOTICE: "This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government". Please see the "Additional Description of Equipment Under Test" page listed inside of this report.

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SIGNATURE PAGE

Report By:

Arnom C. Rowe
Test Engineer
EMC-001375-NE

Reviewed By:

William Stumpf
OATS Manager

Approved By:

Brian Mattson
General Manager



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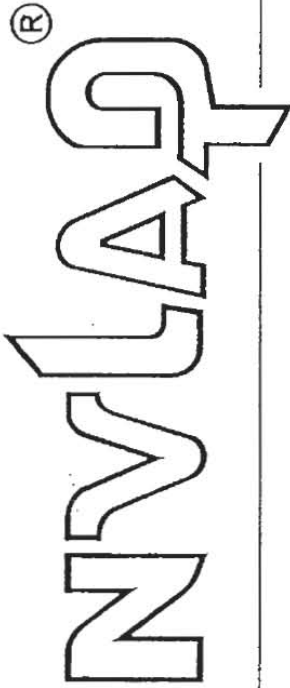
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United States Department of Commerce
 National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 100276-0

D.L.S. Electronic Systems, Inc.
 Wheeling, IL

is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
 listed on the Scope of Accreditation, for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
 This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
 management system (refer to joint ISO-ILAC-IAF Communiqué dated 18 June 2005).*



2007-10-01 through 2008-09-30

Effective dates

Dolly S. Buser
 For the National Institute of Standards and Technology

NVI AP-01C (REV 2006-09-13)



Company: Shure Inc.
Model Tested: P7T-X1
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1.0 SUMMARY OF TEST REPORT

It was found that the P7T Transmitter, Model Number(s) P7T-X1, **meets** the radio interference conducted and radiated emission requirements of the FCC "Rules and Regulations", Part 74, Subpart H, Section 74.861 (d), for low power auxiliary stations.

2.0 INTRODUCTION

On January 24, 25, 28 & 29, 2008, a series of radio frequency interference measurements was performed on P7T Transmitter, Model Number(s) P7T-X1, Serial Number: # 4 & # 5. The tests were performed according to the procedures of the FCC as stated in Part 2 - Frequency Allocations and Radio Treaty Matters: General Rules and Regulations, Subpart J, Equipment Authorization Procedures of the Code of Federal Regulations 47. Tests were performed by personnel of D.L.S. Electronic Systems, Inc. who are responsible to Donald L. Sweeney, Senior EMC Engineer.

D.L.S. Electronic Systems, Inc. is a full service EMC/Safety Testing Laboratory accredited to ISO Guide 17025. NVLAP Certificate and Scope can be viewed at <http://www.dlsemc.com/certificate>. Our facilities are registered with the FCC (Registration #90531), Industry Canada (Registration #2060A-1, 2060A-2, & 2060A-3), and VCCI. All Emission tests were performed by personnel of D.L.S. Electronic Systems, Inc. at the following location(s):

Main Test Facility:

D.L.S. Electronic Systems, Inc.
1250 Peterson Drive
Wheeling, Illinois 60090

O.A.T.S. Test Facility:

D.L.S. Electronic Systems, Inc.
166 S. Carter Street
Genoa City, Wisconsin 53128

3.0 OBJECT

The purpose of this series of tests was to determine if the test sample could meet the radio frequency interference requirements of the FCC "Rules and Regulations", Part 74, Subpart H, Section 74.861 (d), for low power auxiliary stations.



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4.0 TEST SET-UP

All tests were performed at D.L.S. Electronic Systems, Inc. and set up according to the American National Standards Institute, ANSI C63.4-2003. The conducted tests if required were performed with the test item placed on a non-conductive table (table top equipment), located in the test room. Equipment normally operated on the floor was tested by placing it on the metal ground plane. The ground plane has an electrical isolation layer over its surface approximately 7mm thick. The power line supplied was connected to a dual line impedance stabilization network electrically bonded to the ground plane, located on the floor. The networks were constructed per the requirements of the American National Standards Institute, ANSI C63.4-2003.

All radiated emissions tests were performed with the test item placed on a 80 cm high rotating non-conductive table, located in the test room. Equipment normally operated on the floor was placed on a metal covered turntable, which is flush with the surrounding conducting ground plane. The ground plane has an electrical isolation layer over its surface approximately 7 mm thick. The EUT is separated from the turntable ground plane by a non-conductive layer. The equipment under test was set up according to TIA Standard, TIA-603-C:2004, Section 2.2.12.



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5.0 TEST EQUIPMENT (Bandwidths and Detector Function)

All preliminary data below 1000 MHz was automatically plotted using the HP Spectrum Analyzer or ESI 26/ESI 40 Fixed Tuned Receiver. The data was taken using Peak, Quasi-Peak or the Average Detector Functions as required. This information was then used to determine the frequencies of maximum emissions. Above 1000 MHz, final data was taken using the Average Detector.

Below 1000 MHz, final data was taken using the HP Spectrum Analyzer and or ESI 26/ESI 40 fixed tuned receiver. These plots were made using the Peak or Quasi-Peak Detector functions, with manual measurements performed on the questionable frequencies using the Quasi-Peak or the Average Detector Function of the Analyzer or ESI 26/ESI 40 Receiver as required. Above 1000 MHz, final data was taken using the Average Detector on the ESI 26/ESI 40 Fixed Tuned Receiver.

The bandwidths shown below are specified by ANSI C63.4-2003.

Frequency Range	Bandwidth (-6 dB)
10 to 150 kHz	200 Hz
150 kHz to 30 MHz	9 kHz
30 MHz to 1 GHz	120 kHz
Above 1 GHz	1 MHz

A list of the equipment used can be found in Table 1. All primary equipment was calibrated against known reference standards with a verified traceable path to NIST.



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6.0 AMBIENT MEASUREMENTS

For emissions measurements, broadband antennas and an EMI Test Receiver with a panoramic spectrum display are used. First the frequency range is scanned and displayed on the test receiver display. Next the scanned frequency range is divided into smaller ranges, and then it is manually tuned through to determine the emissions from the EUT. A headset or loudspeaker is connected to the test receiver's AM/FM demodulated output as an aid in detecting ambient signals and finding frequencies of significant emission from the EUT. If there is any doubt as to the source of the emission, it is further investigated by rotating the EUT, or by disconnecting the power from the EUT.

The EUT is set up in its typical configuration and operated in its various modes. For tabletop systems, cables are manipulated within the range of likely configurations. For floor-standing equipment, the cables are located in the same manner as the user would install them and no further manipulation is made. If the manner of cable installation is not known, or if it changes with each installation, cables or wires for floor-standing equipment shall be manipulated to the extent possible to produce the maximum level of emissions. For each mode of operation, the frequency spectrum is monitored. Variations in antenna height, antenna polarization, EUT azimuth, and cable or wire placement (each variable within bounds specified elsewhere) are explored to produce the emission that has the highest amplitude relative to the limit. These methods are performed to the specifications in ANSI C63.4: 2003.



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7.0 AC POWER LINE CONDUCTED EMISSION MEASUREMENTS – Part 15.207

Conducted emissions were measured over the frequency range from 150 kHz to 30 MHz in accordance with the power line measurements as specified in FCC Part 15, Subpart C, Section 15.207 & ANSI C63.4-2003. Since the device is operated from the public utility lines, the 120 Vac, 60 Hz power leads, high (hot) and low (neutral) sides, were measured by connecting the measuring equipment to the appropriate meter terminal of the LISN. During the test, the cables were placed and items moved (when appropriate) to maximize emissions. All signals were then recorded. The allowed levels for Intentional Radiators which is designed to be connected to the public utility (AC) power line cannot exceed the following:

Frequency of Emissions (MHz)	Conducted Limits (dBuV)	
	Quasi Peak	Average
.15 to .5	66 to 56	56 to 46
.5 to 5	56	46
5 to 30	60	50

NOTE:

All test measurements were made at a screen room temperature of **74°F** at **52%** relative humidity.



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8.0 DESCRIPTION OF TEST SAMPLE:

8.1 Description:

The PSM700 system, P7T Transmitter and P7R Receiver, is a frequency-agile, in-ear monitoring system for use in a wide variety of applications. The P7T Transmitter is another breakthrough design for in-ear monitoring. It allows the user to connect two line-level or mic-level inputs directly into the transmitter. The two signals can then be mixed independently. You can connect microphones or instruments directly to the inputs, use line outputs from a mixing console. In Short, no mater what the output device, you can probably plug it into the P7T transmitter. The P7T-X1 operates from 944 MHz to 952 MHz, using frequency modulation. It is powered by an internal linear 120VAC power supply.

8.2 PHYSICAL DIMENSIONS OF EQUIPMENT UNDER TEST

Length: 44.5mm Width: 196.8mm Height: 241.3mm

8.3 LINE FILTER USED:

NA

8.4 INTERNAL CLOCK FREQUENCIES:

Switching Power Supply Frequencies:

N/A

Clock Frequencies:

0.038 MHz, 4 MHz and 16 MHz

8.5 DESCRIPTION OF ALL CIRCUIT BOARDS:

1. Populated PCB

PN: 90-11412, Rev 01

9.0 ADDITIONAL DESCRIPTION OF TEST SAMPLE: (See also Paragraph 8.0)

1: There were no additional descriptions noted at the time of test.



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10.0 PHOTO INFORMATION AND TEST SET-UP

Item 0 P7T Transmitter

Model Number: P7T-X1, Serial Number: # 4 & # 5

Item 1 Shure Mixer; Model FP3; Serial No. 1.

Item 2 Koss Earphones; Model R/30S; Serial No. NA

Item 3 Shure Earphones

Item 4 Non-shielded AC Power Cord. 2 m

Item 5 Two shielded Audio Output Cables. 1 m and 2 m

Item 6 Two shielded Audio Input Cables. 1 m



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11.0 RADIATED PHOTOS TAKEN DURING TESTING



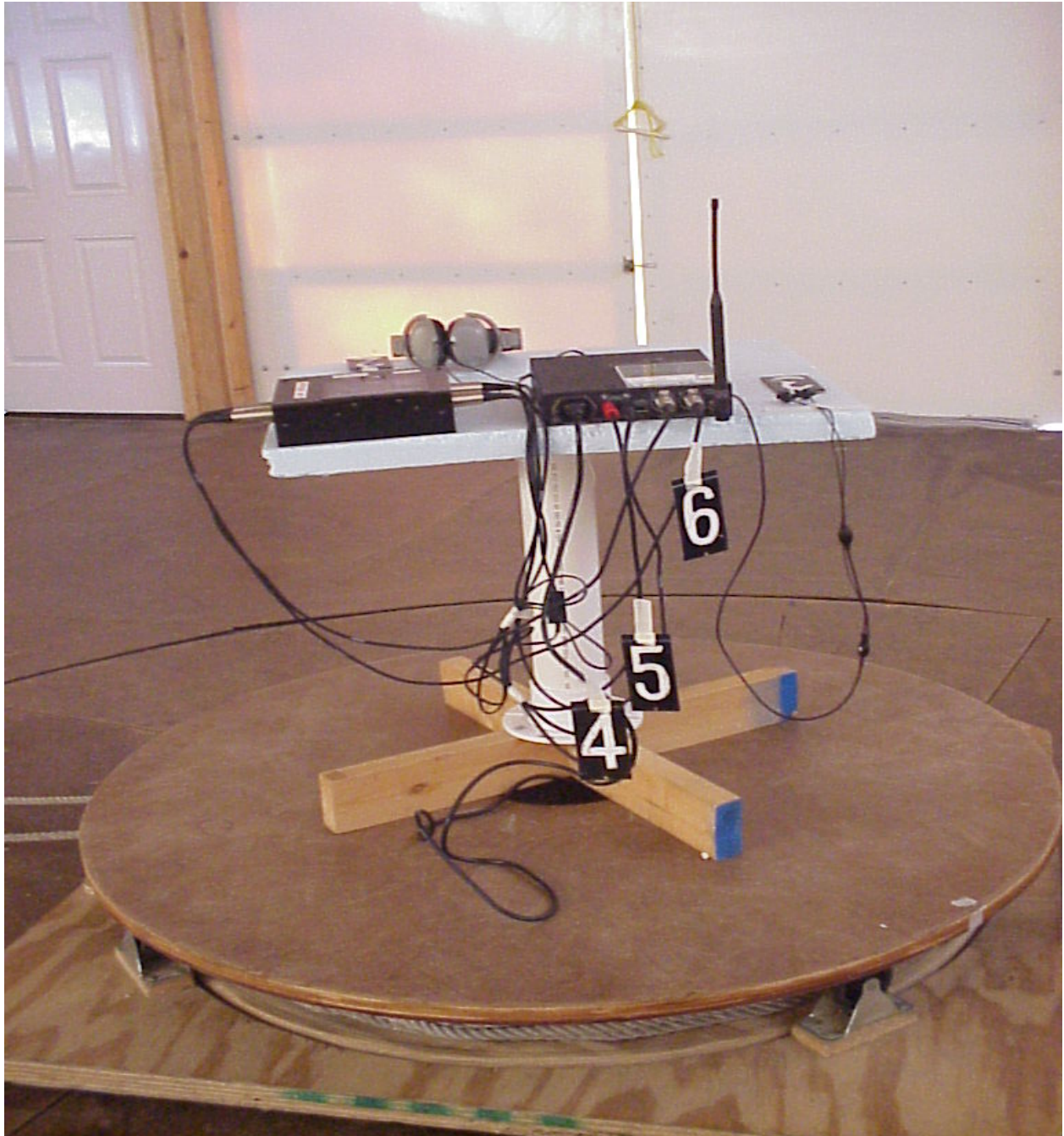
RADIATED - FRONT



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11.0 RADIATED PHOTOS TAKEN DURING TESTING



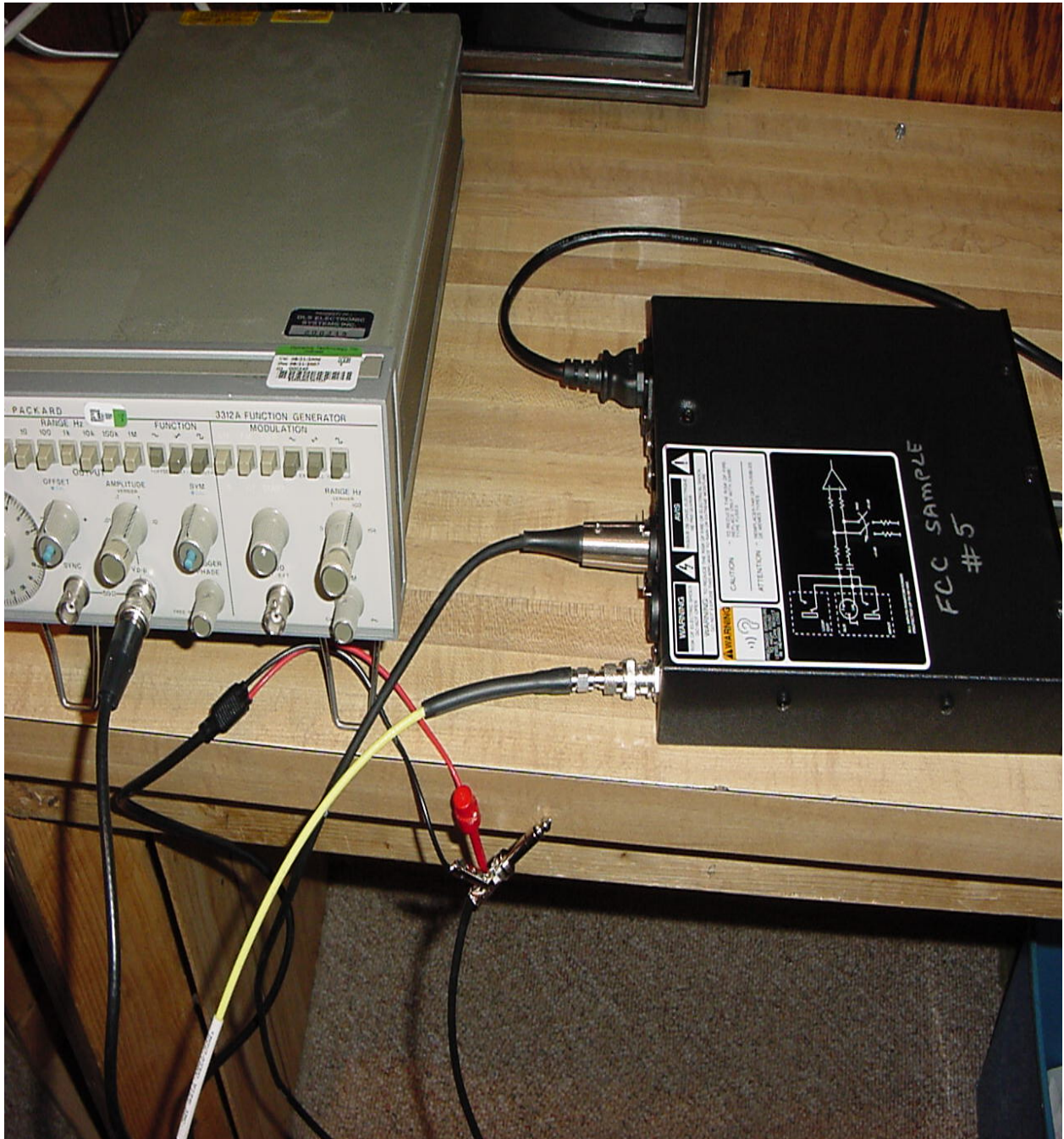
RADIATED - BACK



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11.0 RF CONDUCTED PHOTOS TAKEN DURING TESTING





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11.0 AC POWER LINE CONDUCTED PHOTOS TAKEN DURING TESTING





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12.0 RESULTS OF TESTS

The radio interference emission charts can be seen on the pages at the end of this report. Data sheets indicating the test measurements taken during testing can also be found at the end of this report.

13.0 CONCLUSION

It was found that the P7T Transmitter, Model Number(s) P7T-X1 **meets** the radio interference conducted and radiated emission requirements of the FCC "Rules and Regulations", Part 74, Subpart H, Section 74.861 (d), for low power auxiliary stations.



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TABLE 1 – EQUIPMENT LIST

Test Equipment	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Due Dates
Receiver	Rohde & Schwarz	ESI 26	837491/010	20 Hz – 26 GHz	11/08
Receiver	Rohde & Schwarz	ESI 40	837808/006	20 Hz – 40 GHz	12/08
Receiver	Rohde & Schwarz	ESI 40	837808/005	20 Hz – 40 GHz	12/08
Antenna	EMCO	3104C	00054891	20 MHz – 200 MHz	2/08
Antenna	Electrometrics	LPA-25	1114	200 MHz – 1 GHz	3/08
Antenna	EMCO	3104C	00054892	20 MHz – 200 MHz	3/08
Antenna	Electrometrics	3146	1205	200 MHz – 1 GHz	3/08
Antenna	EMCO	3104C	97014785	20 MHz – 200 MHz	2/08
Antenna	EMCO	3146	97024895	200 MHz – 1 GHz	3/08
Antenna	Rohde & Schwarz	HUF-Z1	829381001	20 MHz – 1 GHz	2/08
Antenna	Rohde & Schwarz	HUF-Z1	829381005	20 MHz – 1 GHz	8/08
Horn Antenna	EMCO	3116	2549	18 – 40GHz	5/08
Horn Antenna	ETS Lindgren	3116	00062917	18 – 40GHz	10/08

All primary equipment is calibrated against known reference standards with a verified traceable path to NIST.



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TABLE 1 – EQUIPMENT LIST

Test Equipment	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Due Dates
Horn Antenna	A.H. Systems	SAS-574	221	18 - 40GHz	4/08
Horn Antenna	A.H. Systems	SAS-574	222	18 - 40GHz	4/08
Horn Antenna	Com Power	AH 118	071127	1-18GHz	5/08
Horn Antenna	EMCO	3115	4451	1-18GHz	5/08
Horn Antenna	EMCO	3115	6204	1-18GHz	5/08
Horn Antenna	EMCO	3115	5731	1-18GHz	6/08
Attenuator - 10dB Fixed	JFW	50FH-101-50N	50FH-010-10	DC-2GHz	9/08
Attenuator-10dB Fixed	Pasternack	PE7014-10		DC-18GHz	9/08
Attenuator-10dB Fixed	JFW	50FH-010-10		DC-2GHz	9/08
Attenuator-20dB Fixed	Aeroflex Weinschel	75A-20-12	1071	DC – 40GHz	7/08
Attenuator-20dB Fixed	Pasternack	PE7019-20		DC-18GHz	9/08
Attenuator-40dB Fixed	JFW	50FHA0-040-200		DC-18GHz	4/08
Audio Analyzer	HP	8903A	2336A03043	20Hz-100kHz	12/08

All primary equipment is calibrated against known reference standards with a verified traceable path to NIST.



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TABLE 1 – EQUIPMENT LIST

Test Equipment	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Due Dates
Attenuator-20dB fixed	MCE-WEIN	59955A-20		DC-40GHz	9/08
Filter- Band Reject Tunable	K&L	3TNF-500/1000-B/B		360MHz-1.25GHz	Cal when needed
Filter- Band Reject Tunable	K&L	3TNF-63/125-B/B		62MHz-200MHz	Cal when needed
Power Meter	Anritsu	ML2487A	6K00002069		10/08
Power Sensor	Anritsu	MA2411A	031563	300MHz-40GHz	10/08
Power Sensor	Anritsu	MA2490A		50MHz-8GHz	10/08
Power Sensor	Anritsu	MA2491A		50MHz-18GHz	10/08
Preamp	R&S	TS-PR40	032001/003	26GHz-40GHz	1/08
Preamp	Miteq	AMF-8B-180265-40-10P-H/S		18GHz-26GHz	9/08
Preamp	Miteq	MF-6D-010100-50 A	213976	10GHz-18GHz	5/08
Preamp	Miteq	AMF-6F-100200-50-10P	668382	10GHz-18GHz	1/08
Preamp	Miteq	AMF-6D-100200-50	313936	1GHz-10GHz	5/08
Preamp	Ciao	CA118-4010	-----	1GHz-18GHz	1/08

All primary equipment is calibrated against known reference standards with a verified traceable path to NIST.



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TABLE 1 – EQUIPMENT LIST

Test Equipment	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Due Dates
50 Ohm Load-50W	Pasternack	PE6039	-----	DC-18GHz	Ref check
Modulation Analyzer	HP	8901B	2920A02096	150kHz-1.3GHz	11/08
Filter- High-Pass	Mini Circuits	NHP-600	438727	600MHz-7GHz	9/08
Filter- High-Pass	Mini Circuits	NHP-400	10433	400MHz-5GHz	9/08
Filter- High-Pass	Mini Circuits	NHP-900	-----	910MHz-8GHz	9/08
Filter- High-Pass	Q-Microwave	100460	-----	1.1GHz	5/08
Filter- High-Pass	Q-Microwave	100461	-----	2.9GHz	5/08
Filter- High-Pass	Q-Microwave	100462	-----	4.2GHz	5/08
Filter- High-Pass	Q-Microwave	100460	-----	1.1GHz	5/08
Filter- High-Pass	Q-Microwave	100461	-----	2.5GHz	5/08
Filter- High-Pass	Q-Microwave	100462	-----	4.6GHz	5/08
Filter- High-Pass	SOLAR	7930-10	921541	12kHz	3/08
Filter- High-Pass	SOLAR	7930-10	888809	11kHz	1/08

All primary equipment is calibrated against known reference standards with a verified traceable path to NIST.



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TABLE 1 – EQUIPMENT LIST

Test Equipment	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Due Dates
Filter-Notch	K&L	4N45-2450/T100-0/0	-----	2.45GHz	5/08
Signal Generator	R&S	SMR-40	100092	1 – 40GHz	8/08
Filter- High-Pass	Planar	HP8G-7Q8-CD-SFF	PF1225/7728	$f_c = 7.5\text{GHz}$	7/08
Filter- High-Pass	Planar	HP8G-7Q8-CD-SFF	PF1226/7728	$f_c = 7.5\text{GHz}$	7/08
Filter- High-Pass	Planar	HP2G-1780-CD-SS	PF1227/7728	$f_c = 1.5\text{GHz}$	7/08
Filter- High-Pass	Planar	HP2G-1780-CD-SS	PF1228/7728	$f_c = 1.5\text{GHz}$	7/08
Filter- High-Pass	Planar	CL22600-9000-CD-SS	PF1230/7728	$f_c = 16.2\text{GHz}$	7/08
Filter- High-Pass	Planar	CL22600-9000-CD-SS	PF1229/7728	$f_c = 16.2\text{GHz}$	7/08
Signal Generator	Hewlett-Packard	HP8341B	2819A01017	10MHz – 20GHz	8/08
Directional Coupler	Mini-Circuits	ZDC-20-3	BF886600648	0.2 – 250MHz	New 8/08
Directional Coupler	Mini-Circuits	ZFDC-20-4-N	NF801600636	1 – 1000MHz	New 8/08
Bi-Directional Coupler	Mini-Circuits	ZX30-20-20BD-S+	SN350700724	500 – 2000MHz	New 8/08

All primary equipment is calibrated against known reference standards with a verified traceable path to NIST.



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APPENDIX A

TEST PROCEDURE

SUBPART H

LOW POWER AUXILIARY STATIONS OPERATING IN THE BANDS OTHER THAN THOSE ALLOCATED FOR TV BROADCASTING



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APPENDIX A

1.0 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 non-conductive turntable located in the Test Room with the receive antenna placed three or one meter(s) from the device under test.

2.0 RF-POWER OUTPUT – PART 2.1046 and EIA /TIA-603-C:2004, SECTION 2.2.17

As stated in PART 74.861 (d)(1), the RF output power should not exceed 1 watt(s). The RF output of the P7T Transmitter was connected to a Power Meter through suitable attenuation. All cables, connectors, and attenuators were calibrated prior to testing. The RF output power was measured using the following test method:

Actual Measurements Taken:

19.98 dBm Measured output of the transmitter

19.98 dBm equals 0.09954 watt(s)

LIMIT:

Manufacturer's rated output power = 100 mW Conducted Typical

MARGIN:

$1 - 0.09954 = 0.900459$ watt(s)



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APPENDIX A

DATA TAKEN OF THE RF POWER OUTPUT MEASUREMENT

EIA /TIA-603-C:2004, SECTION 2.2.17

FCC Part 74.861 (d)(1) & PART 2.1046



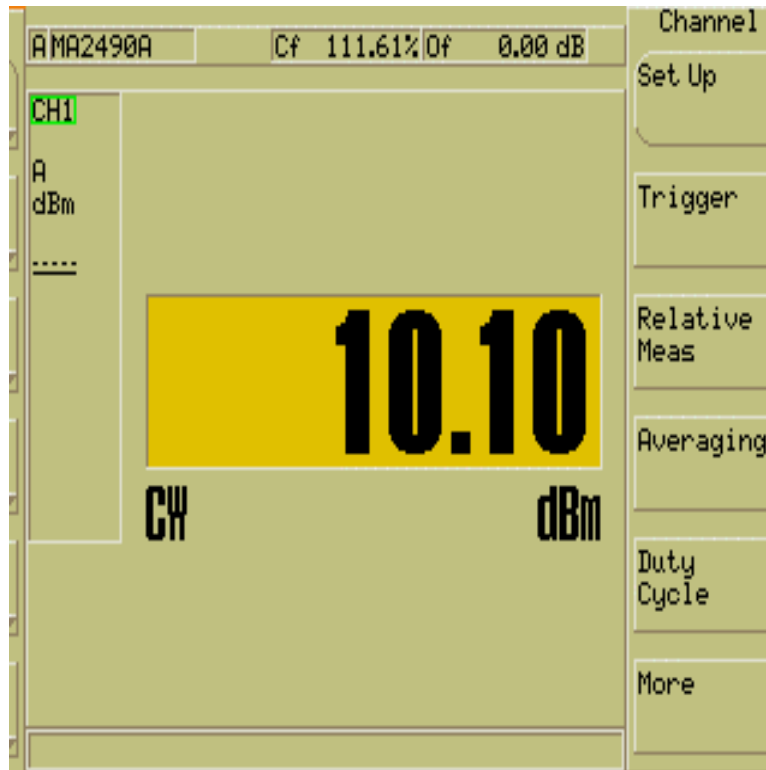
Company: Shure Inc.
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APPENDIX A

Test Date: 01-25-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Peak Power Output - Conducted
Rule part: FCC Part 74; FCC Part 2.1046
Operator: Craig B
Comment: Channel: 944.125 MHz

Peak Output Power = 10.10 dBm + 9.88 dB ext. atten. = 19.98 dBm = 99.54 mW





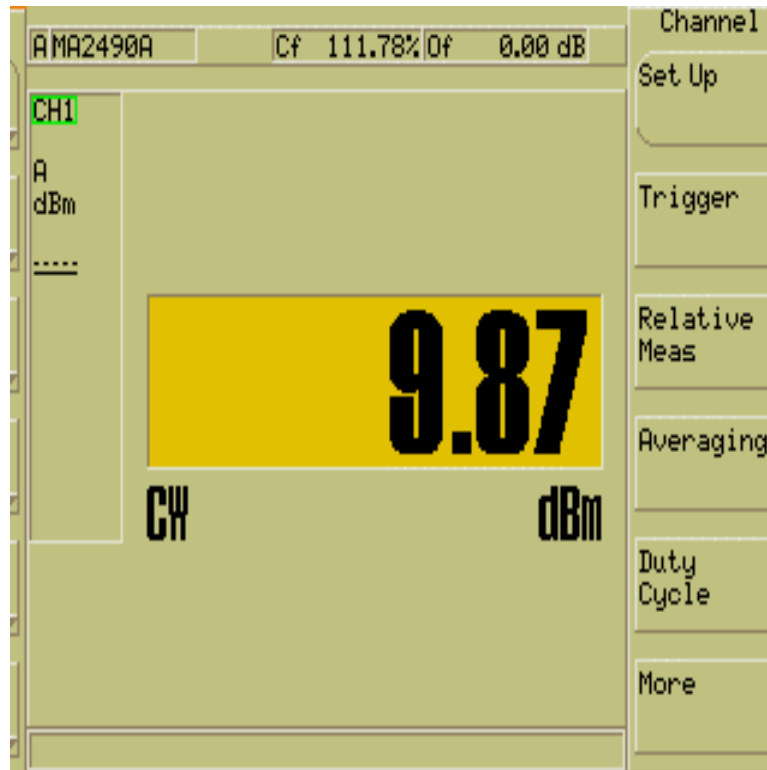
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APPENDIX A

Test Date: 01-25-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Peak Power Output - Conducted
Rule part: FCC Part 74; FCC Part 2.1046
Operator: Craig B
Comment: Channel: 951.875 MHz

Peak Output Power = 9.87 dBm + 9.86 dB ext. atten. = 19.73 dBm = 93.97 mW





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APPENDIX A

3.0 RF POWER OUTPUT PHOTOS TAKEN DURING TESTING





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APPENDIX A

4.0 MODULATION CHARACTERISTICS – PART 2.1047 and EIA /TIA-603-C:2004, SECTION 2.2.3

a. Voice modulated communication equipment.

A curve showing the frequency response of the audio modulating circuit over a range of 50 Hz to 15 kHz 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.



1250 Peterson Dr., Wheeling, IL 60090

Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

APPENDIX A

GRAPH(S) TAKEN SHOWING THE FREQUENCY RESPONSE OF THE AUDIO MODULATING CIRCUIT

EIA /TIA-603-C:2004, SECTION 2.2.3

PART 2.1047

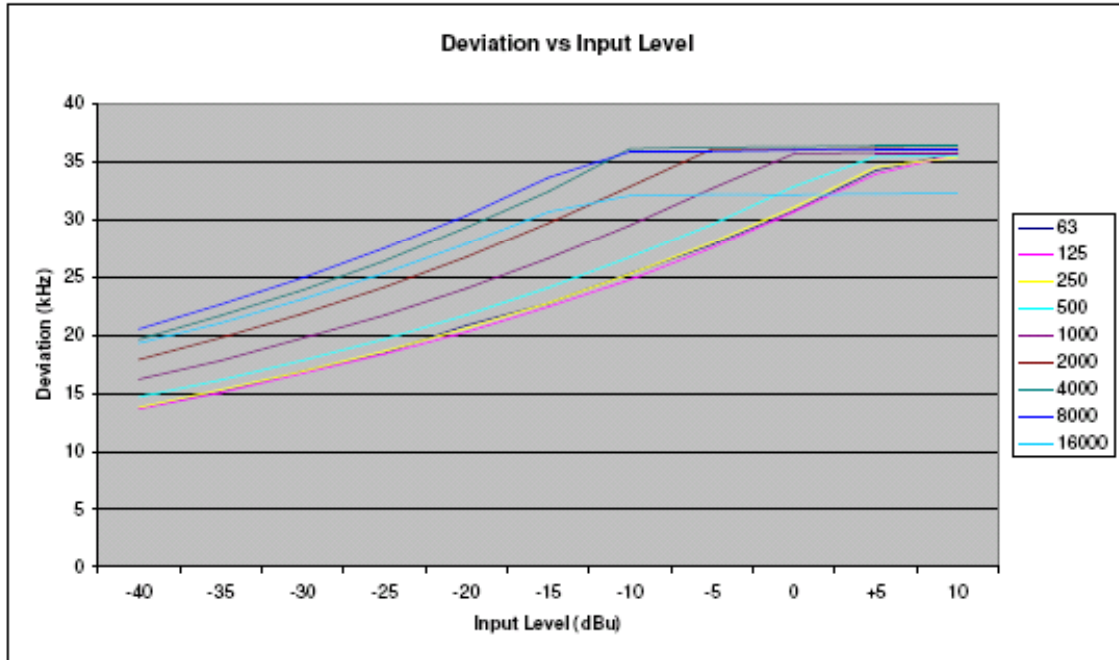


Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

	63	125	250	500	1000	2000	4000	8000	16000
-40	13.71	13.64	13.78	14.66	16.2	17.89	19.62	20.5	19.3
-35	15.11	15.03	15.27	16.13	17.79	19.74	21.67	22.62	21.03
-30	16.87	16.69	16.88	17.81	19.72	21.82	23.85	24.9	23.07
-25	18.44	18.35	18.6	19.63	21.68	24.1	26.37	27.48	25.32
-20	20.82	20.24	20.57	21.7	24	26.7	29.3	30.32	27.86
-15	22.72	22.42	22.74	24.06	26.59	29.68	32.41	33.61	30.64
-10	25.3	24.74	25.25	26.7	29.49	32.83	36.09	35.86	32.07
-5	27.77	27.51	27.98	29.56	32.89	36.07	36.24	35.86	32.15
0	30.74	30.66	31.03	32.84	35.66	36.04	36.29	35.98	32.14
+5	34.24	33.92	34.5	35.43	35.75	36.15	36.36	36.04	32.23
10	35.74	35.66	35.39	35.48	35.75	36.07	36.34	36.03	32.24



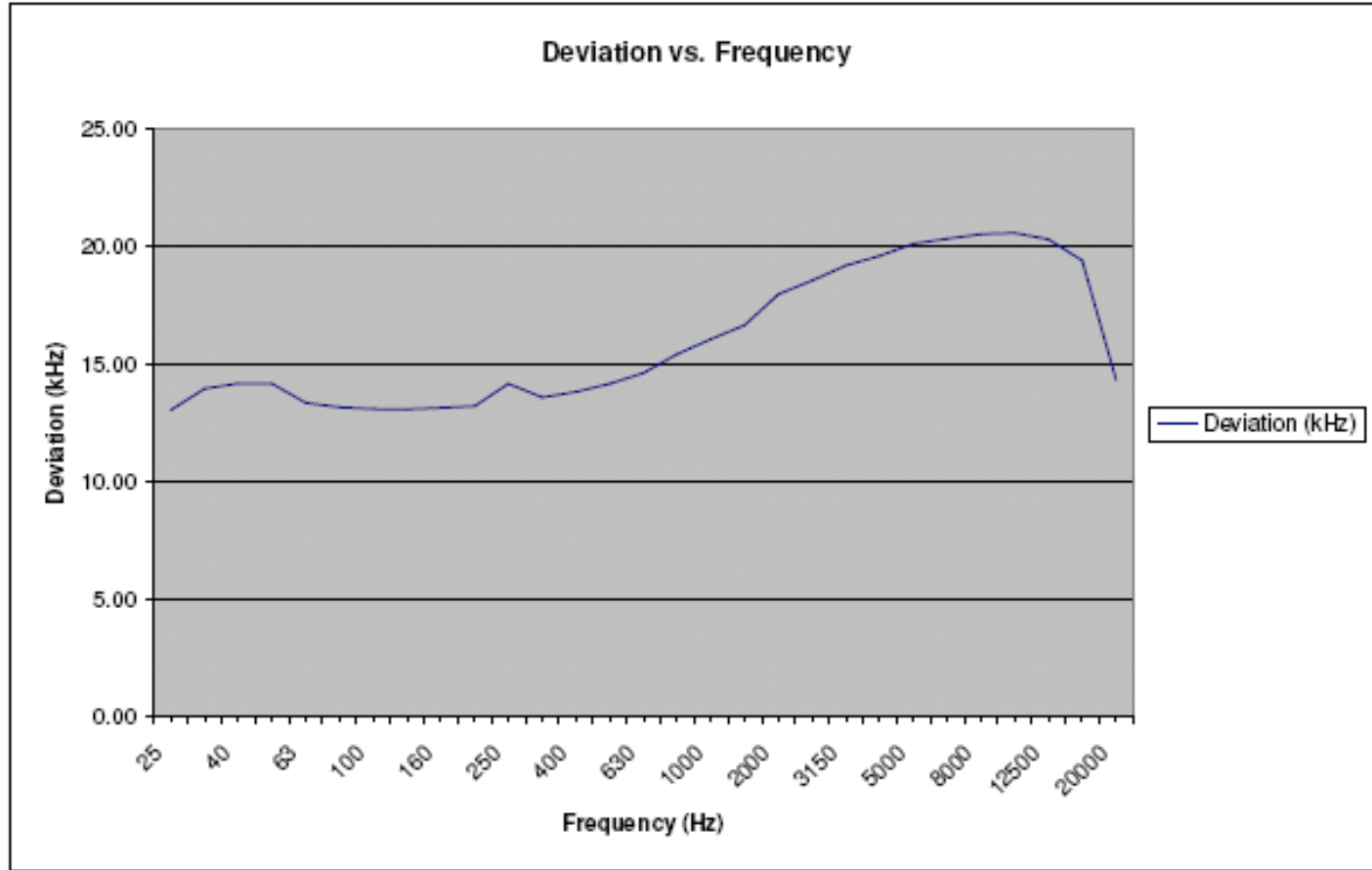


Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Freq (Hz)	Deviation (kHz)
25	13.09
31	14.00
40	14.22
50	14.20
63	13.39
80	13.21
100	13.14
125	13.12
160	13.19
200	13.26
250	14.20
315	13.63
400	13.86
500	14.20
630	14.66
800	15.46
1000	16.10
1250	16.68
2000	18.00
2500	18.57
3150	19.21
4000	19.61
5000	20.13
6300	20.34
8000	20.54
10000	20.58 max
12500	20.32
16000	19.42
20000	14.36



Audio input level = -40dBu
 Frequency of Maximum Response: 10kHz



Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

5.0 OCCUPIED BANDWIDTH - PART 2.1049

The occupied bandwidth is that between the lower and upper limits of the signal where the mean power is 99.0% of the total mean power and measured under the following conditions:

For low power auxiliary stations operating in the bands other than those allocated for TV broadcasting, the occupied bandwidth shall not be greater than that necessary for satisfactory transmission and emissions appearing on any discrete frequency outside the authorize band shall be attenuated $43+10 \log^{10}$ (mean output power, in watts) dB below the mean output power of the transmitting unit (device under test).

For low power auxiliary stations operating in the bands allocated for TV broadcasting, any form of modulation may be used. A maximum of ± 75 kHz is permitted when frequency modulation is used. The operating bandwidth shall not exceed 200 kHz.

Carson's Rule:

Section 2.202 (g)

$$B_n = 2M + 2DK, \quad K=1$$

B_n = Bandwidth

$$M = 15 \text{ kHz,}$$

M = Maximum Modulating Frequency

$$D = 45 \text{ kHz,}$$

D = Peak Deviation

$$B_n = 2(15) + 2(45)(1) = 120 \text{ kHz}$$



1250 Peterson Dr., Wheeling, IL 60090

Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

APPENDIX A

DATA AND GRAPH(S) TAKEN OF THE

99% OCCUPIED BANDWIDTH

Part 74.861 (d)(3) & PART 2.1049



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

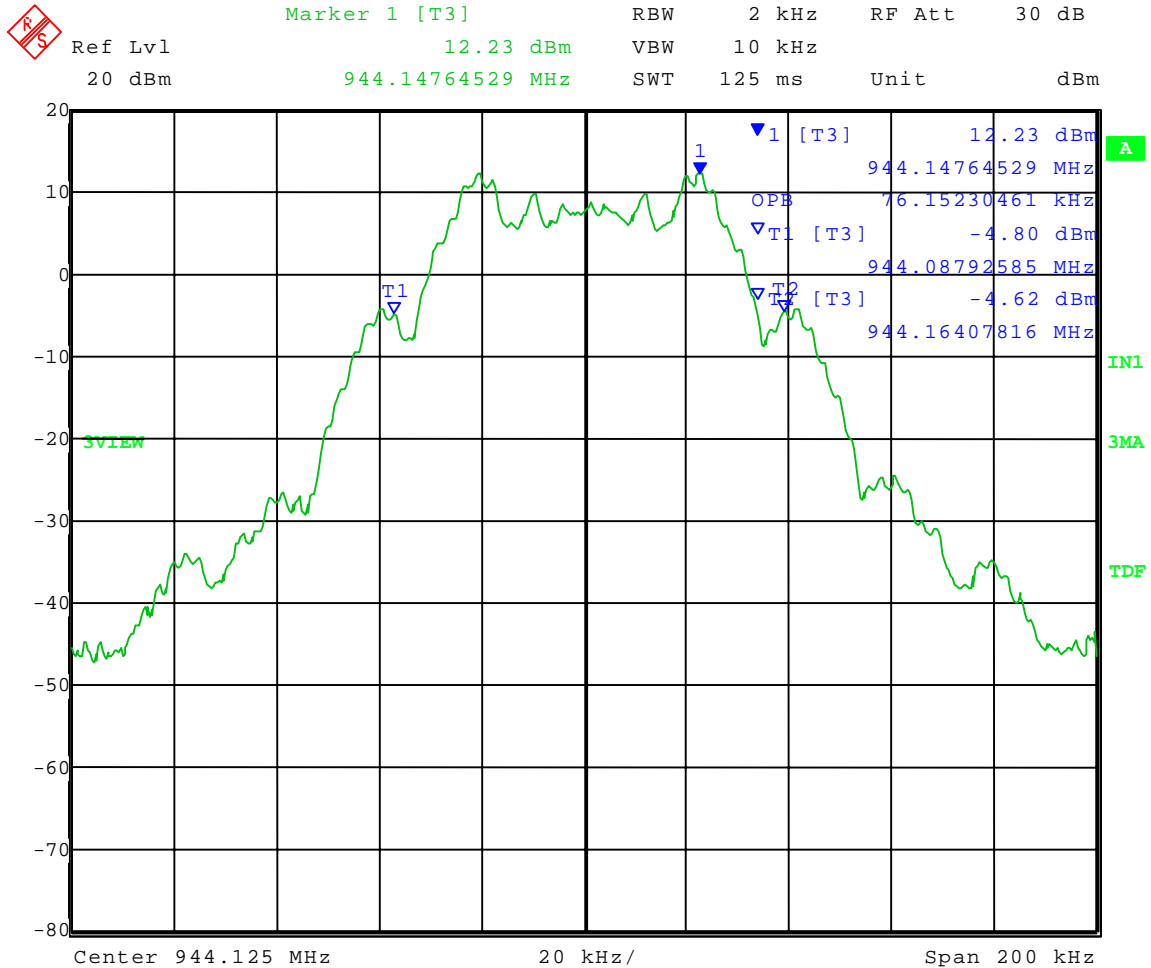
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-25-2008
 Company: Shure, Inc.
 EUT: P7T-X1
 Test: Occupied Bandwidth; 99% bandwidth
 Rule part: FCC Part 74; FCC Part 2.1049
 Operator: Craig B

Frequency: 944.125 MHz

99% power bandwidth = 76.15 kHz



Date: 25.JAN.2008 14:46:38



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

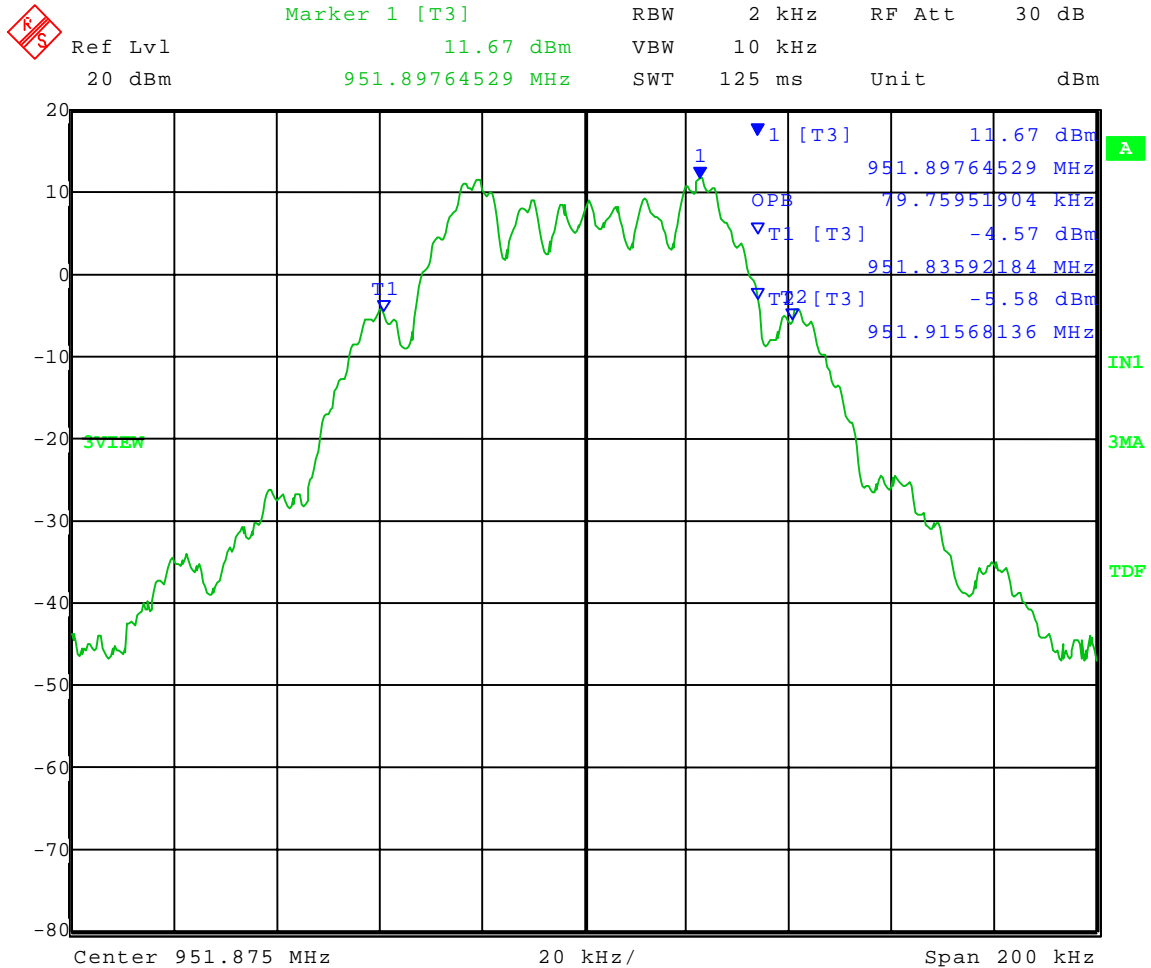
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-25-2008
 Company: Shure, Inc.
 EUT: P7T-X1
 Test: Occupied Bandwidth; 99% bandwidth
 Rule part: FCC Part 74; FCC Part 2.1049
 Operator: Craig B

Frequency: **951.875 MHz**

99% power bandwidth = 79.76 kHz



Date: 25.JAN.2008 14:42:00



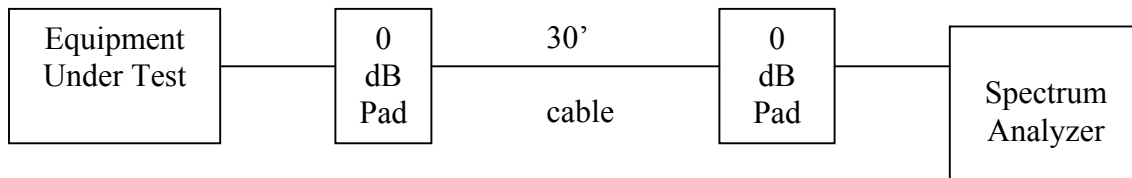
Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

6.0 SPURIOUS EMISSIONS AT ANTENNA TERMINALS – PART 2.1051 and EIA /TIA-603-C:2004, SECTION 2.2.13

Spurious conducted emissions were measured at the antenna terminals using an artificial load. Plots were made showing the amplitude of each harmonic emission with the equipment operated as specified in 2.989. 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 944 MHz - 952 MHz bands for P7T Transmitter equipment are found under Part 74, Section 74.861, Paragraph d-3 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) any discrete frequency outside the authorized band shall be attenuated, at least, $43+10\text{Log}^{10}$ (mean output power, in watts) dB below the mean output power of the transmitting unit.

NOTE:

The P7T Transmitter uses the Shure 1/4 Wave Antenna with BNC Connector; Model: PA710X. See the following pages for the data and graphs of the actual measurements made:



1250 Peterson Dr., Wheeling, IL 60090

Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

APPENDIX A

CONDUCTED EMISSION DATA & CHARTS
TAKEN FOR
SPURIOUS EMISSION MEASUREMENTS MADE
AT THE ANTENNA TERMINALS
EIA /TIA-603-C:2004, SECTION 2.2.13
PART 2.1051

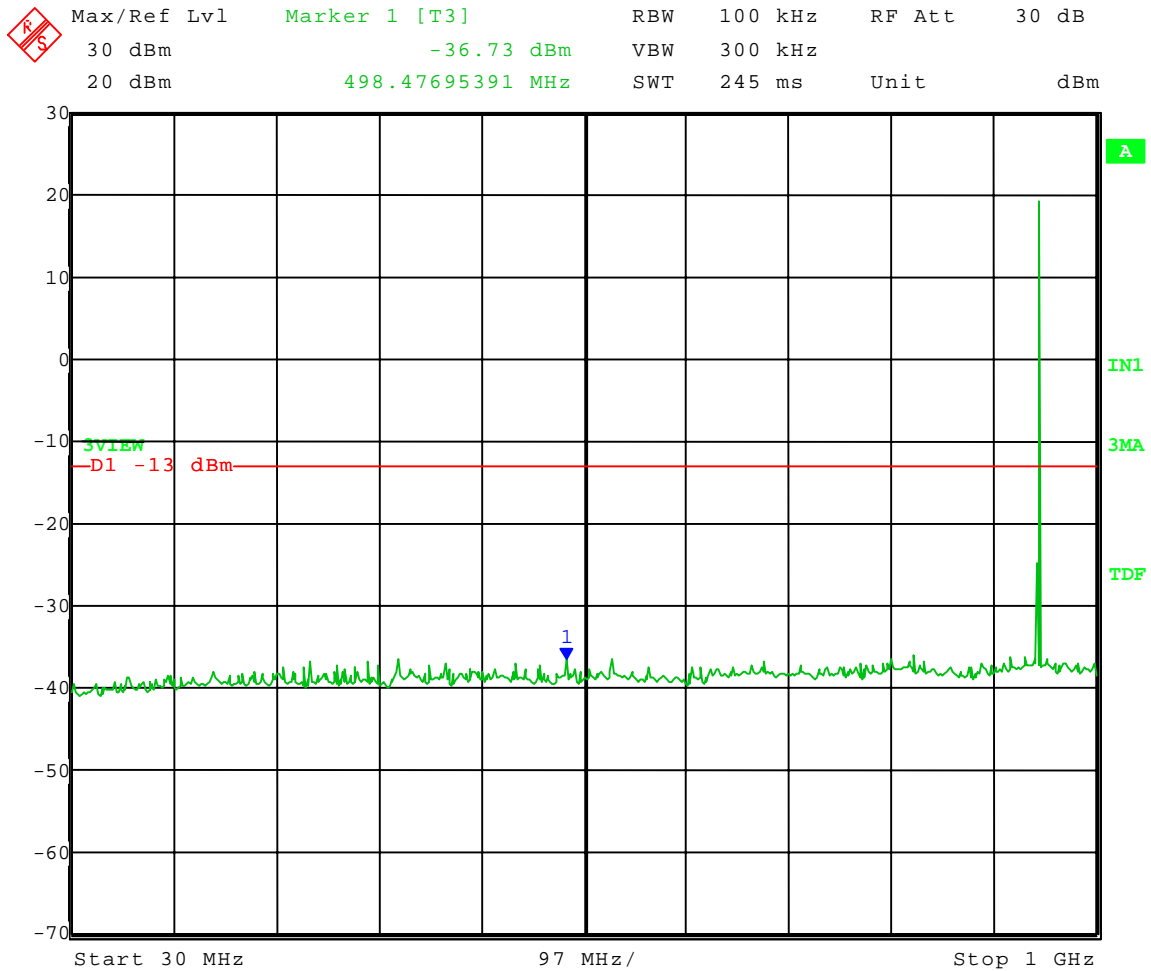


Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-25-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Spurious Emissions - Conducted
Rule part: FCC Part 74; FCC Part 2.1051
Operator: Craig B
Comment: Channel: 944.125 MHz
Frequency Range: 30 to 1000 MHz
Limit = -13 dBm



Date: 25.JAN.2008 13:58:31



1250 Peterson Dr., Wheeling, IL 60090

Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

APPENDIX A

7.0 FIELD STRENGTH OF SPURIOUS EMISSION MEASUREMENTS – PART 2.1053 and EIA /TIA-603-C:2004, SECTION 2.2.12

Radiated measurements were performed scanning the frequency range from 30 MHz to at least the 10th harmonic of the fundamental frequency.

For the P7T Transmitter, the highest fundamental frequency is 951.875 MHz so the scans were made up to 10000 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 944 MHz - 952 MHz bands for P7T Transmitter are found under Part 74, Section 74.861, Paragraph d-3 for Low Power Auxiliary Stations. This paragraph states that the mean power of the emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

- (1) any discrete frequency outside the authorized band shall be attenuated, at least, $43+10\text{Log}^{10}$ (mean output power, in watts) dB below the mean output power of the transmitting unit.



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Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

APPENDIX A

RADIATED EMISSION DATA & CHARTS TAKEN
FOR FUNDAMENTAL EMISSIONS
USING THE SUBSTITUTION METHOD
EIA /TIA-603-C:2004, SECTION 2.2.12



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

DLS Electronic Systems, Inc.

Company: Shure, Inc.
 Operator: Craig B
 Date of test: 01-24-2008
 Temperature: 70 deg. F.
 Humidity: 23% R.H.

Spurious Emissions - ERP - Substitution Method

Model: P7T-X1								
Channels: 944.125 MHz, and 951.875 MHz								
Frequency and Polarization (MHz)	Max. Field Strength of EUT @ 3 meters (dBuV/m)	Output of Signal Generator when field strength equals that of EUT (dBm)	Correction factor for cable between Signal Gen. and subst. antenna (dB)	Gain of subst. antenna (dBi)	Strength of emission [ERP] (dBm)	Limit (dBm)	Margin (dB)	Strength of emission [ERP] (mW)
944.125 vertical	119.37	29.5	7.10	2.15	22.4	30.0	7.6	173.78
944.125 horizontal	120.38	28.8	7.10	2.15	21.7	30.0	8.3	147.91
951.875 vertical	119.35	28.5	7.14	2.15	21.4	30.0	8.6	136.77
951.875 horizontal	121.18	29.7	7.14	2.15	22.6	30.0	7.4	180.30

EIRP = Signal generator output - cable loss + antenna gain

ERP_(ref. to 1/2λ dipole) = Signal generator output - cable loss + antenna gain - 2.15



1250 Peterson Dr., Wheeling, IL 60090

Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

APPENDIX A

RADIATED EMISSION DATA AND GRAPH(S)

TAKEN FOR

SPURIOUS EMISSION MEASUREMENTS

USING THE SUBSTITUTION METHOD

EIA /TIA-603-C:2004, SECTION 2.2.12

PART 2.1053



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

DLS Electronic Systems, Inc.

Company: Shure, Inc.
 Operator: Craig B
 Date of test: 01-24-2008
 Temperature: 70 deg. F.
 Humidity: 23% R.H.

Radiated Spurious Emissions (e.r.p. substitution method) FCC Part 74; FCC Part 2.1053								
Model: P7T-X1 Transmit Frequency: 944.125 MHz								
Frequency GHz	Field Strength Level dBuV/m	Factor to Convert to dBm	Power ERP dBm	Limit dBm	Margin dB	Receive Antenna Polarization	EUT Antenna Orientation	Receive Antenna Height (m)
1.88825	71.1	99.8	-28.7	-13	15.7	Horizontal	135	1.1
2.83238	47.0	101.3	-54.3	-13	41.3	Horizontal	190	1.0
3.77650	63.6	100.7	-37.1	-13	24.1	Horizontal	180	1.1
4.72063	49.4	100.2	-50.8	-13	37.8	Horizontal	180	1.0
5.66475	49.4	100.8	-51.4	-13	38.4	Horizontal	225	1.0
6.60888	58.4	99.5	-41.1	-13	28.1	Horizontal	140	1.0
7.55300	60.9	100.1	-39.2	-13	26.2	Horizontal	160	1.0
8.49713	57.4	100.3	-42.9	-13	29.9	Horizontal	200	1.1
9.44125	54.8	99.5	-44.7	-13	31.7	Horizontal	210	1.0
1.88825	69.1	98.9	-29.8	-13	16.8	Vertical	180	1.1
2.83238	52.1	100.8	-48.7	-13	35.7	Vertical	225	1.0
3.77650	64.5	100.3	-35.8	-13	22.8	Vertical	210	1.0
4.72063	50.4	100.5	-50.1	-13	37.1	Vertical	180	1.0
5.66475	56.4	101.0	-44.6	-13	31.6	Vertical	170	1.3
6.60888	58.5	100.1	-41.6	-13	28.6	Vertical	220	1.3
7.55300	64.7	101.7	-37.0	-13	24.0	Vertical	180	1.3
8.49713	61.7	101.6	-39.9	-13	26.9	Vertical	135	1.4
9.44125	60.1	101.7	-41.6	-13	28.6	Vertical	160	1.6



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

DLS Electronic Systems, Inc.

Company: Shure, Inc.
 Operator: Craig B
 Date of test: 01-24-2008
 Temperature: 70 deg. F.
 Humidity: 23% R.H.

Radiated Spurious Emissions (e.r.p. substitution method) FCC Part 74; FCC Part 2.1053								
Model: P7T-X1 Transmit Frequency: 951.875 MHz								
Frequency GHz	Field Strength Level dBuV/m	Factor to Convert to dBm	Power ERP dBm	Limit dBm	Margin dB	Receive Antenna Polarization	EUT Antenna Orientation	Receive Antenna Height (m)
1.90375	67.7	99.9	-32.2	-13	19.2	Horizontal	135	1.1
2.85563	45.4	100.7	-55.3	-13	42.3	Horizontal	150	1.4
3.80750	58.1	100.5	-42.4	-13	29.4	Horizontal	150	1.2
4.75938	51.1	100.0	-48.9	-13	35.9	Horizontal	170	1.0
5.71125	49.9	100.3	-50.4	-13	37.4	Horizontal	180	1.0
6.66313	56.3	99.4	-43.1	-13	30.1	Horizontal	160	1.0
7.61500	60.6	100.9	-40.3	-13	27.3	Horizontal	150	1.0
8.56688	57.9	99.8	-41.9	-13	28.9	Horizontal	200	1.1
9.51875	52.2	99.3	-47.1	-13	34.1	Horizontal	190	1.3
1.90375	64.7	99.6	-34.9	-13	21.9	Vertical	90	1.0
2.85563	47.9	101.1	-53.2	-13	40.2	Vertical	225	1.0
3.80750	58.7	100.3	-41.6	-13	28.6	Vertical	210	1.0
4.75938	44.4	100.1	-55.7	-13	42.7	Vertical	210	1.2
5.71125	51.1	100.8	-49.7	-13	36.7	Vertical	160	1.3
6.66313	55.1	100.0	-44.9	-13	31.9	Vertical	180	1.1
7.61500	62.8	101.9	-39.1	-13	26.1	Vertical	180	1.4
8.56688	55.9	101.6	-45.7	-13	32.7	Vertical	135	1.2
9.51875	52.1	101.1	-49.0	-13	36.0	Vertical	225	1.3



Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

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APPENDIX A

8.0 FREQUENCY STABILITY (TEMPERATURE) AT AUTHORIZED BAND-EDGES – PART 2.1051 & PART 2.1055(a1)

The frequency stability was measured from -30° to $+50^{\circ}$ centigrade at intervals of 10° 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 P7T Transmitter oscillator circuitry to stabilize.

The allowed emissions at the authorized band-edges for transmitters operating in the 944 MHz - 952 MHz bands for P7T Transmitter equipment are found under Part 74, Section 74.861, Paragraph d-3 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) any discrete frequency outside the authorized band shall be attenuated, at least, $43+10\text{Log}^{10}$ (mean output power, in watts) dB below the mean output power of the transmitting unit.

See the following page for the data taken during testing.

9.0 FREQUENCY STABILITY (VOLTAGE VARIATION) AT AUTHORIZED BAND-EDGES – PART 2.1051 & PART 2.1055(d2)

The frequency stability of the P7T Transmitter was measured by increasing the primary AC supply voltage to 115 % of the nominal voltage and reducing the primary AC supply voltage to 85 % of the nominal voltage.

The allowed emissions at the authorized band-edges for transmitters operating in the 944 MHz - 952 MHz bands for P7T Transmitter equipment are found under Part 74, Section 74.861, Paragraph d-3 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) any discrete frequency outside the authorized band shall be attenuated, at least, $43+10\text{Log}^{10}$ (mean output power, in watts) dB below the mean output power of the transmitting unit.

See the following page for the data taken during testing.



1250 Peterson Dr., Wheeling, IL 60090

Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

GRAPHS TAKEN FOR FREQUENCY

STABILITY WHEN VARYING THE TEMPERATURE

AND

PRIMARY SUPPLY VOLTAGE VARIATION

AT THE LOWER AND UPPER

FREQUENCY BAND-EDGES

PART 2.1051, PART 2.1055a(1) & PART 2.1055d(d2)

944.125 MHz



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

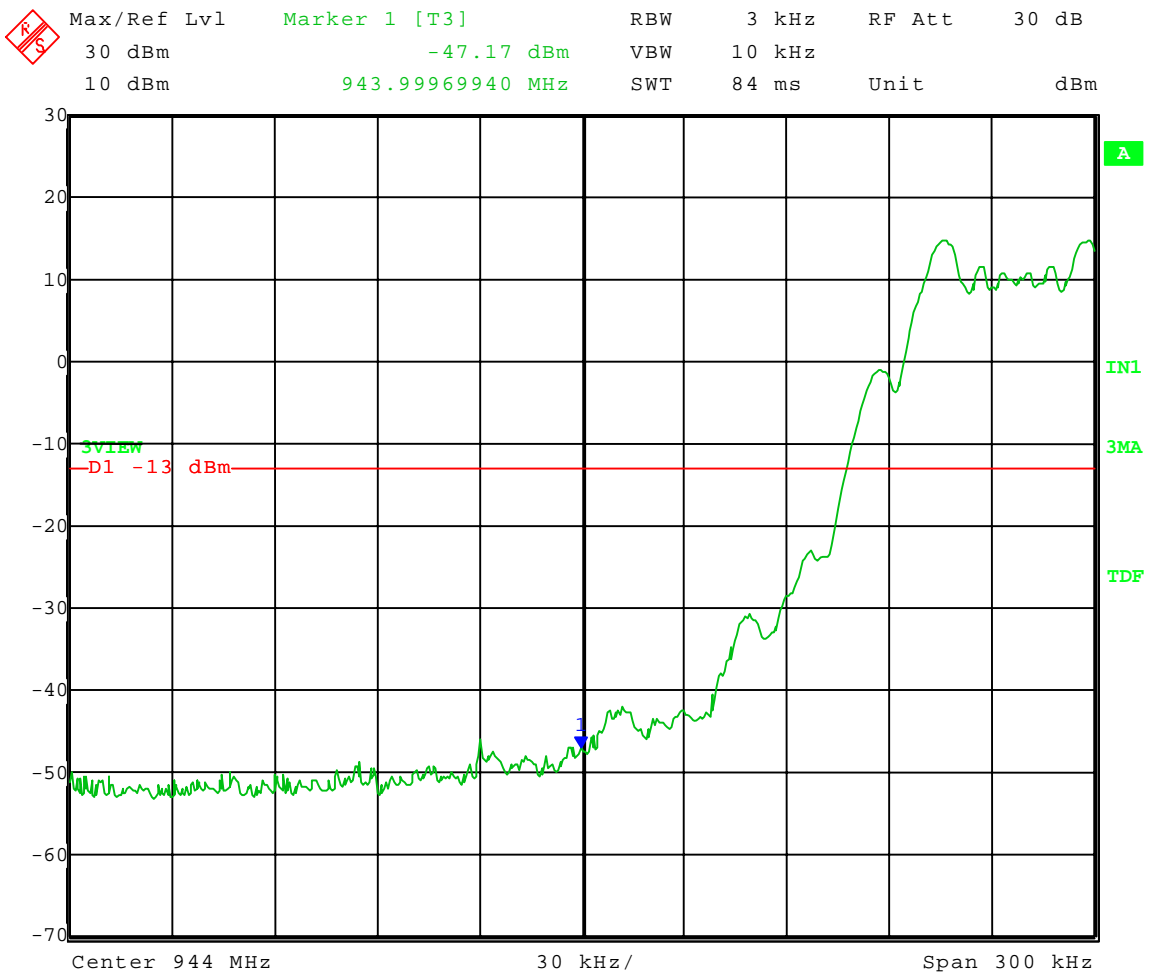
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-29-2008
 Company: Shure, Inc.
 EUT: P7T-X1
 Test: Band-Edge Compliance - Conducted
 Rule part: FCC Part 74.861(d); FCC Part 2.1051
 Operator: Craig B
 Comment: Channel; 944.125 MHz

Operating conditions: 120 V 20° C

Band-Edge Frequency = 944 MHz
 Band-Edge limit = -13 dBm



Date: 29.JAN.2008 09:21:42



Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

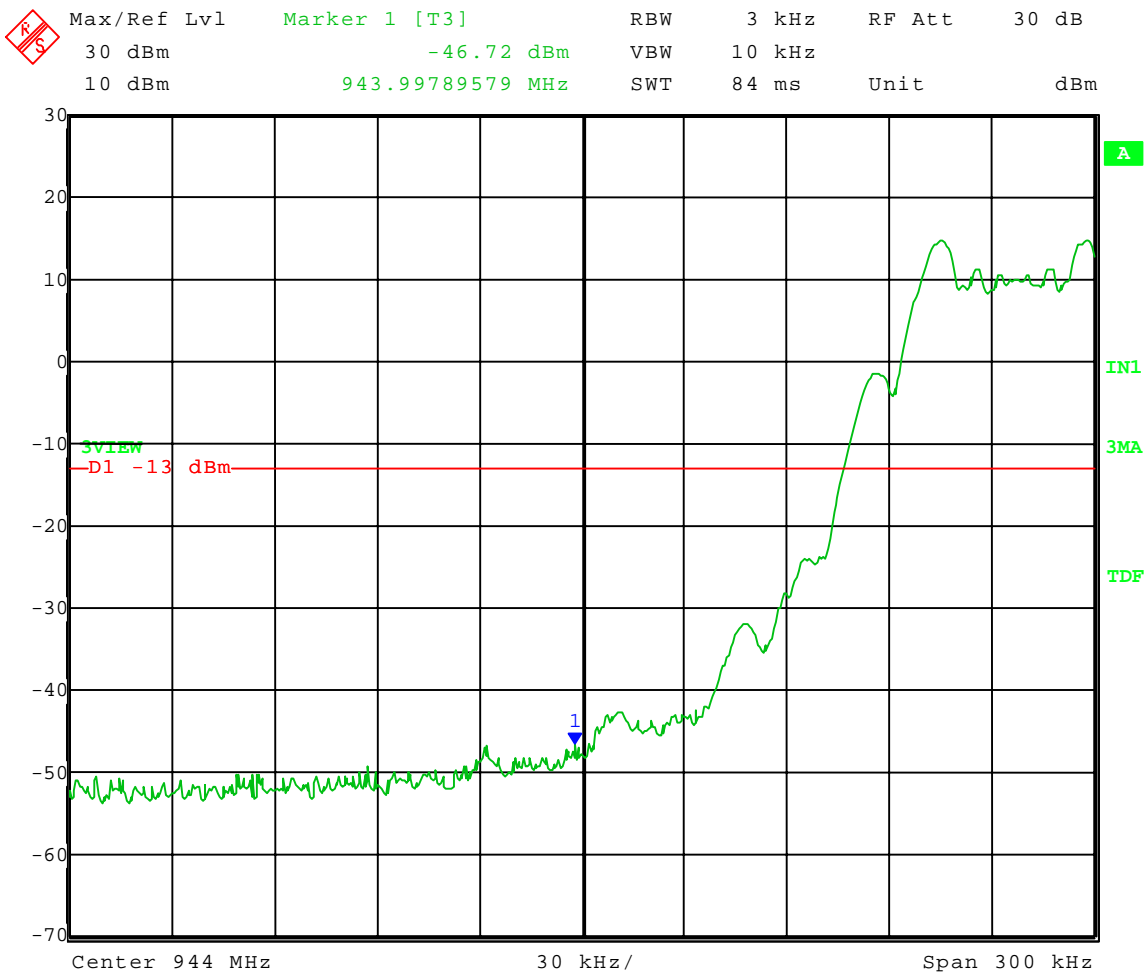
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 1-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 944.125 MHz

Operating conditions: 102 V 20° C

Band-Edge Frequency = 944 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 09:39:01



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

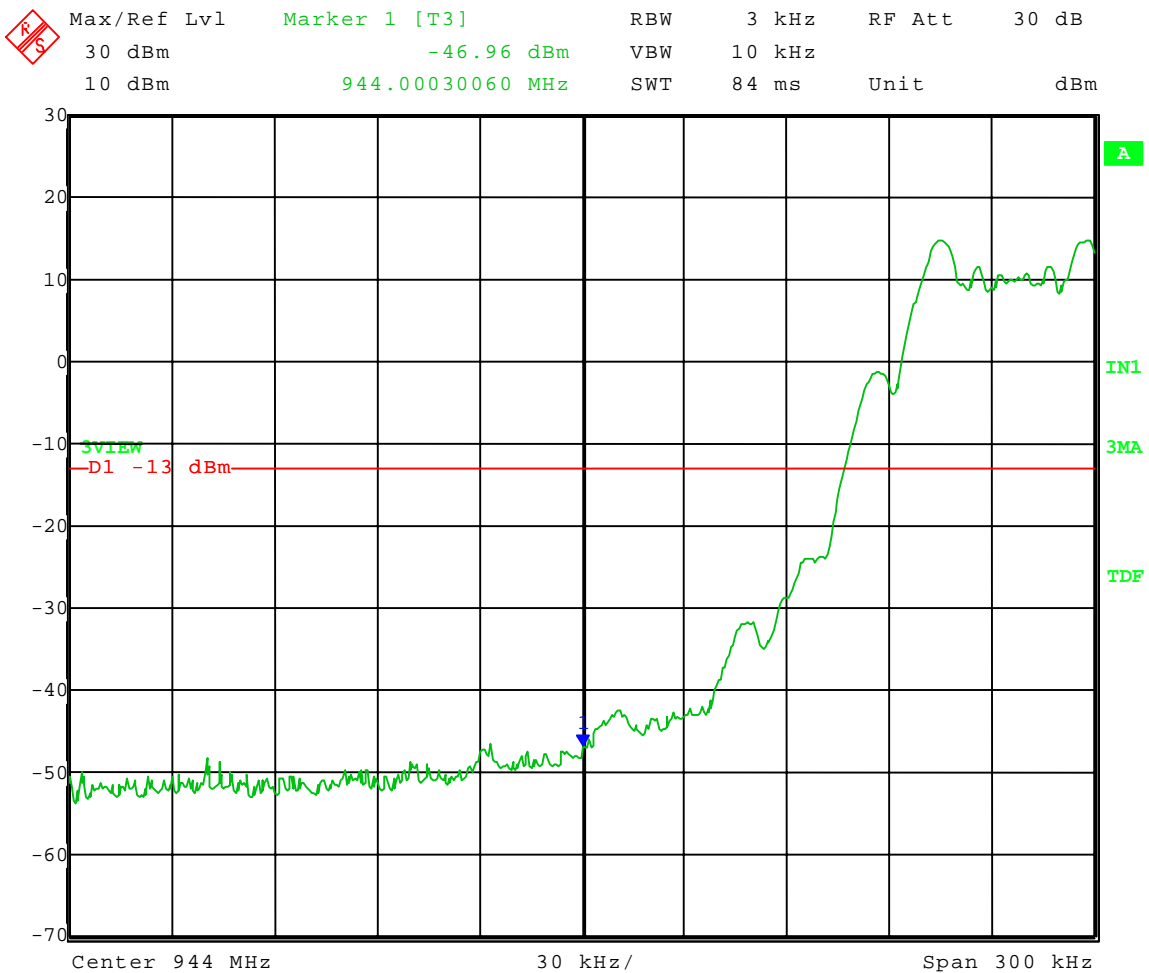
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-29-2008
 Company: Shure, Inc.
 EUT: P7T-X1
 Test: Band-Edge Compliance - Conducted
 Rule part: FCC Part 74.861(d); FCC Part 2.1051
 Operator: Craig B
 Comment: Channel; 944.125 MHz

Operating conditions: 138 V 20° C

Band-Edge Frequency = 944 MHz
 Band-Edge limit = -13 dBm



Date: 29.JAN.2008 09:41:19



Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 944.125 MHz

Operating conditions: 120 V -30° C

Band-Edge Frequency = 944 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 15:20:44



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

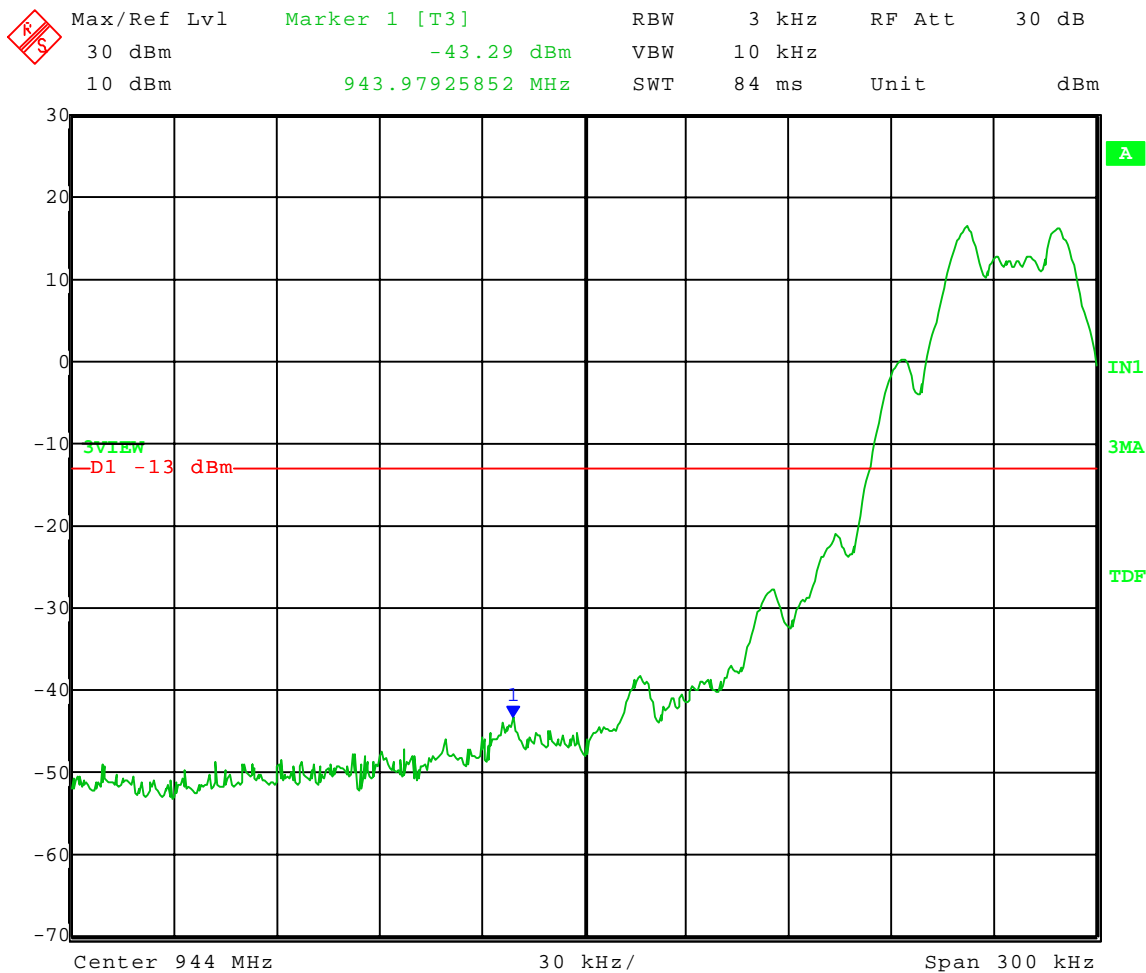
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-29-2008
 Company: Shure, Inc.
 EUT: P7T-X1
 Test: Band-Edge Compliance - Conducted
 Rule part: FCC Part 74.861(d); FCC Part 2.1051
 Operator: Craig B
 Comment: Channel; 944.125 MHz

Operating conditions: 120 V -20° C

Band-Edge Frequency = 944 MHz
 Band-Edge limit = -13 dBm



Date: 29.JAN.2008 14:35:28



Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

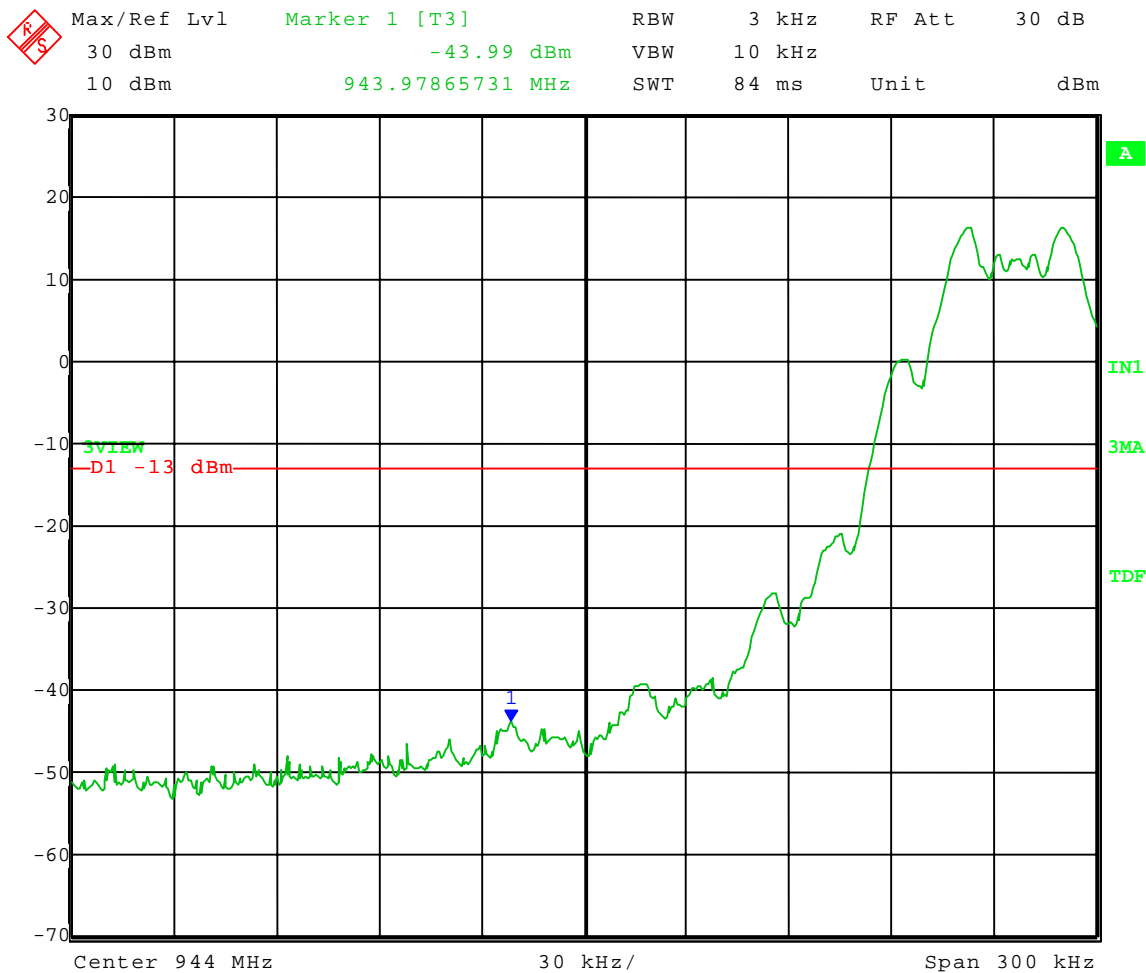
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 944.125 MHz

Operating conditions: 120 V -10° C

Band-Edge Frequency = 944 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 13:36:59



Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

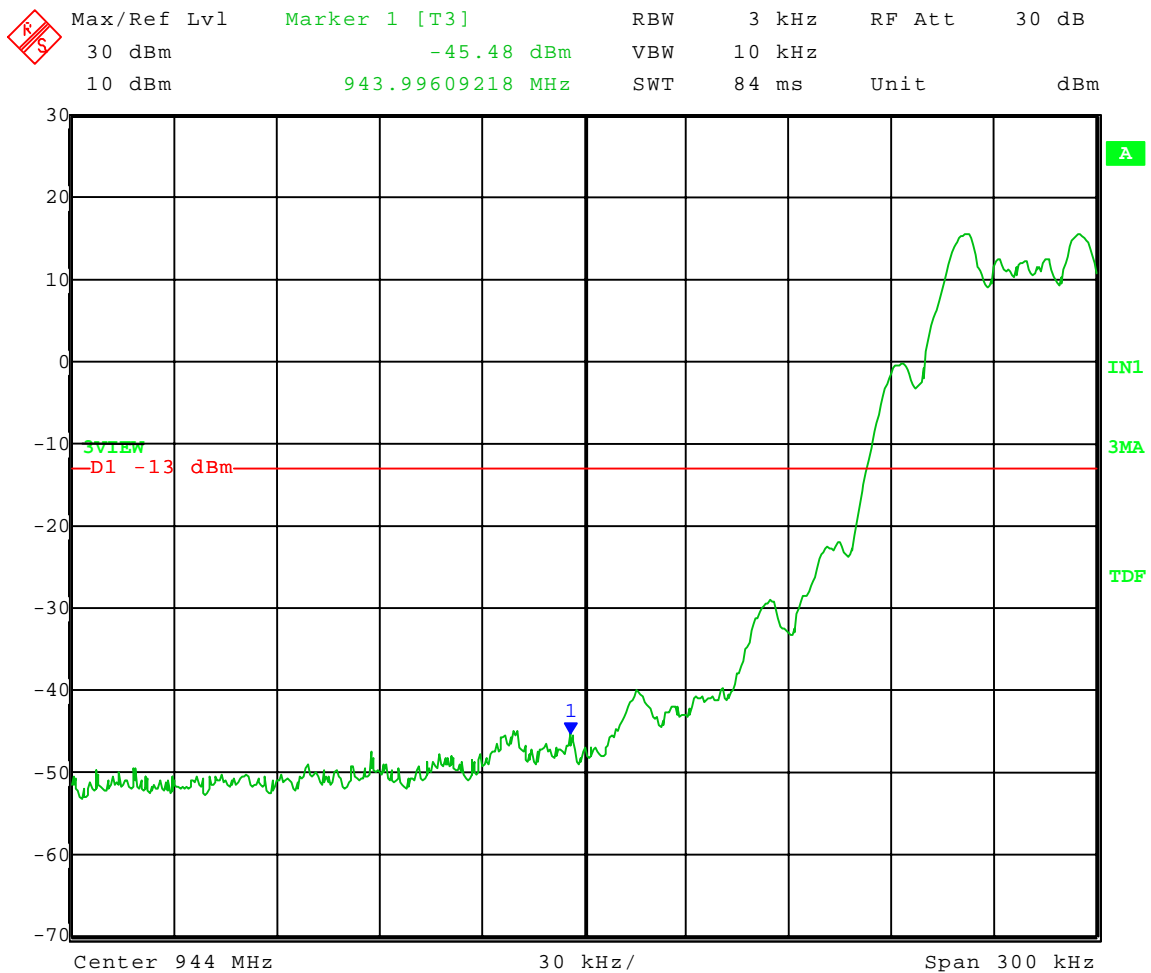
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 944.125 MHz

Operating conditions: 120 V 0° C

Band-Edge Frequency = 944 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 13:03:46



Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 944.125 MHz

Operating conditions: 120 V 10° C

Band-Edge Frequency = 944 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 12:04:47



Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

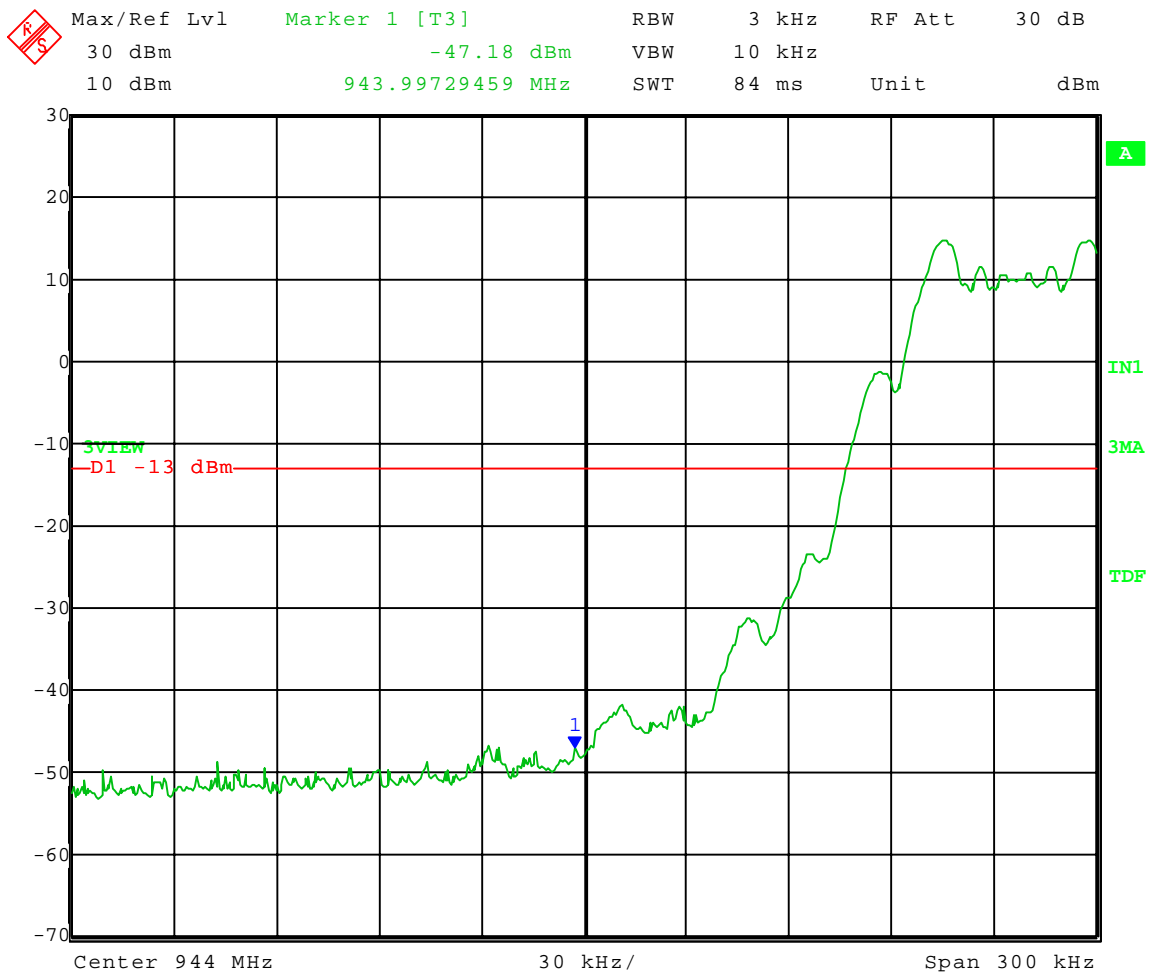
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 944.125 MHz

Operating conditions: 120 V 30° C

Band-Edge Frequency = 944 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 10:20:25



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

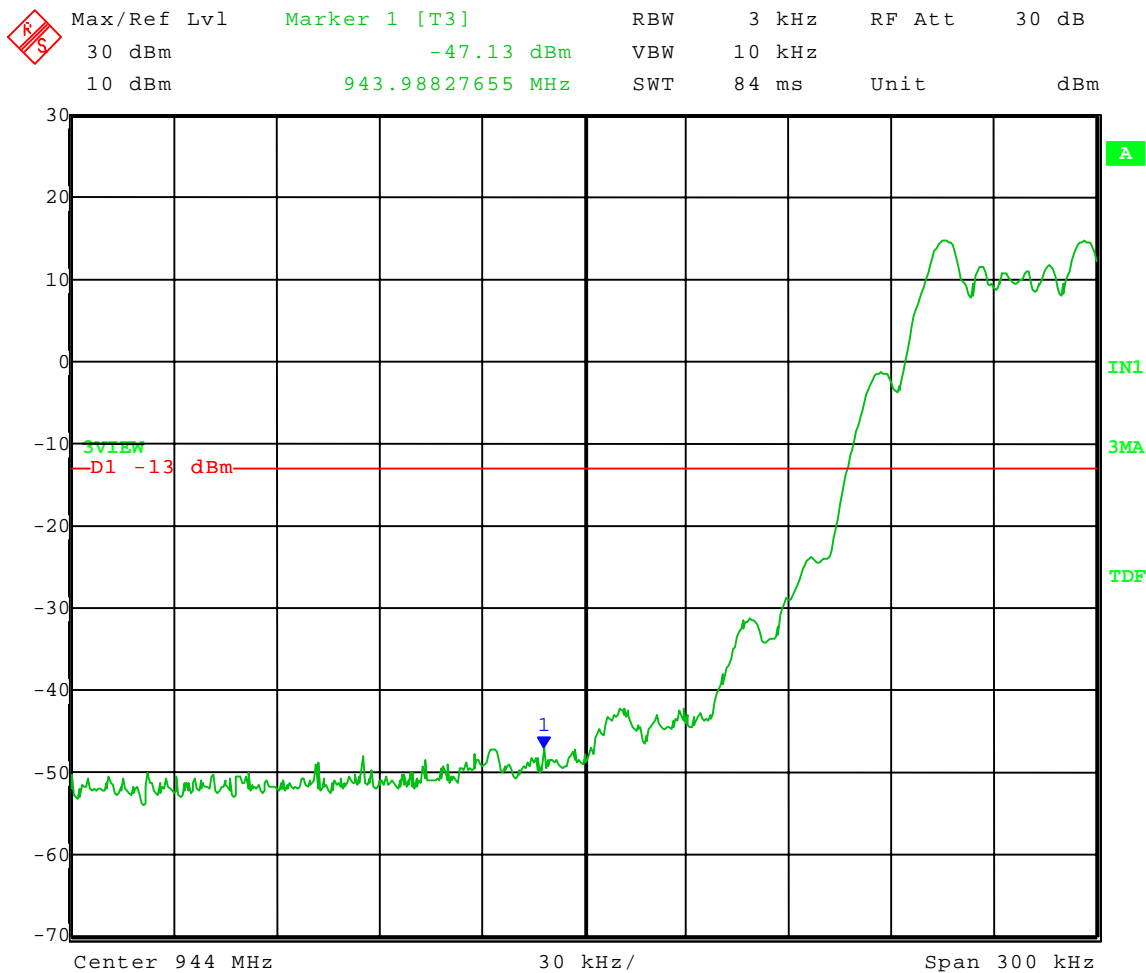
1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-29-2008
 Company: Shure, Inc.
 EUT: P7T-X1
 Test: Band-Edge Compliance - Conducted
 Rule part: FCC Part 74.861(d); FCC Part 2.1051
 Operator: Craig B
 Comment: Channel; 944.125 MHz

Operating conditions: 120 V 40° C

Band-Edge Frequency = 944 MHz
 Band-Edge limit = -13 dBm



Date: 29.JAN.2008 10:48:25



Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 944.125 MHz

Operating conditions: 120 V 50° C

Band-Edge Frequency = 944 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 11:16:07



1250 Peterson Dr., Wheeling, IL 60090

Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

GRAPHS TAKEN FOR FREQUENCY

STABILITY WHEN VARYING THE TEMPERATURE

AND

PRIMARY SUPPLY VOLTAGE VARIATION

AT THE LOWER AND UPPER

FREQUENCY BAND-EDGES

PART 2.1051, PART 2.1055a(1) & PART 2.1055d(d2)

951.875 MHz



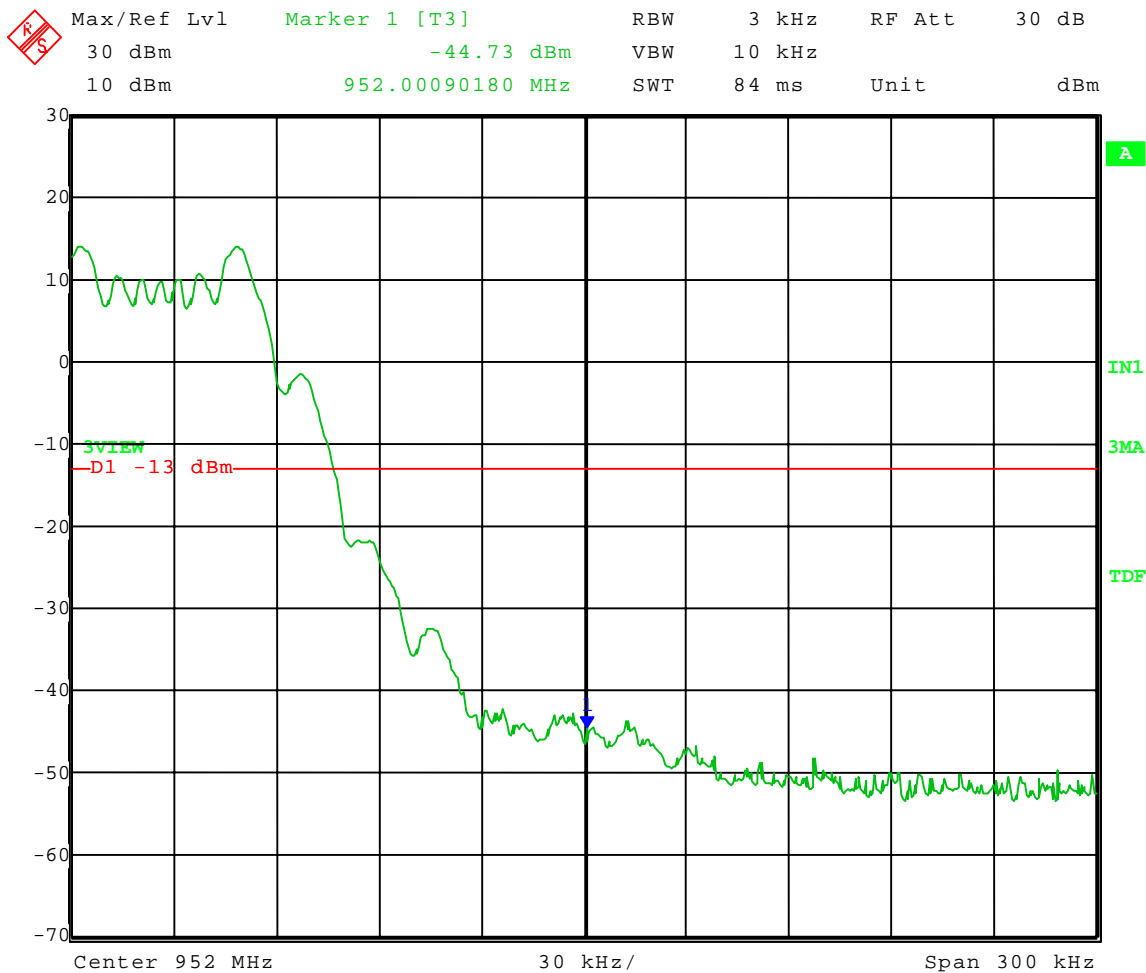
Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 951.875 MHz

Operating conditions: 120 V 20° C

Band-Edge Frequency = 952 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 09:34:25



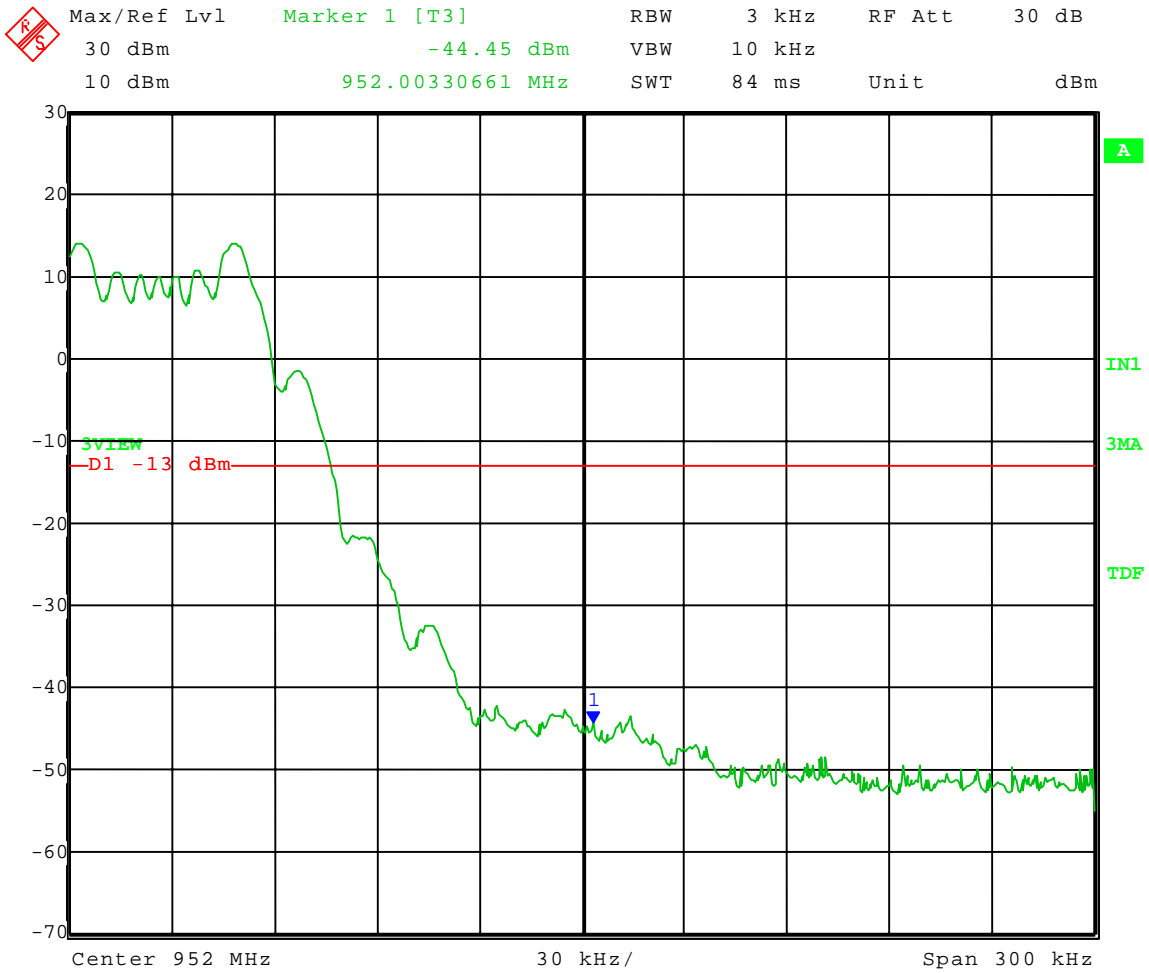
Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 951.875 MHz

Operating conditions: 102 V 20° C

Band-Edge Frequency = 952 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 09:37:17



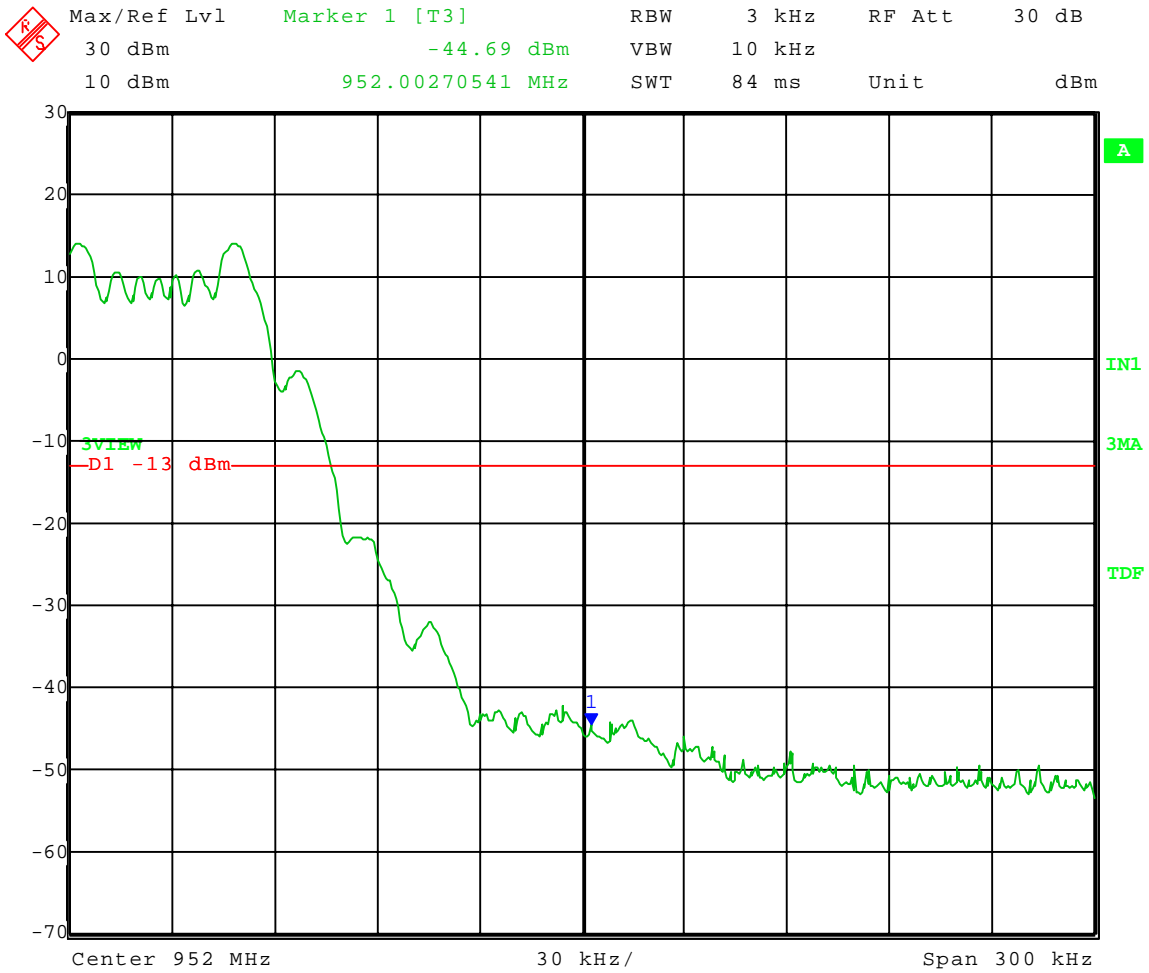
Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 01-29-2008
 Company: Shure, Inc.
 EUT: P7T-X1
 Test: Band-Edge Compliance - Conducted
 Rule part: FCC Part 74.861(d); FCC Part 2.1051
 Operator: Craig B
 Comment: Channel; 951.875 MHz

Operating conditions: 138 V 20° C

Band-Edge Frequency = 952 MHz
 Band-Edge limit = -13 dBm



Date: 29.JAN.2008 09:43:15



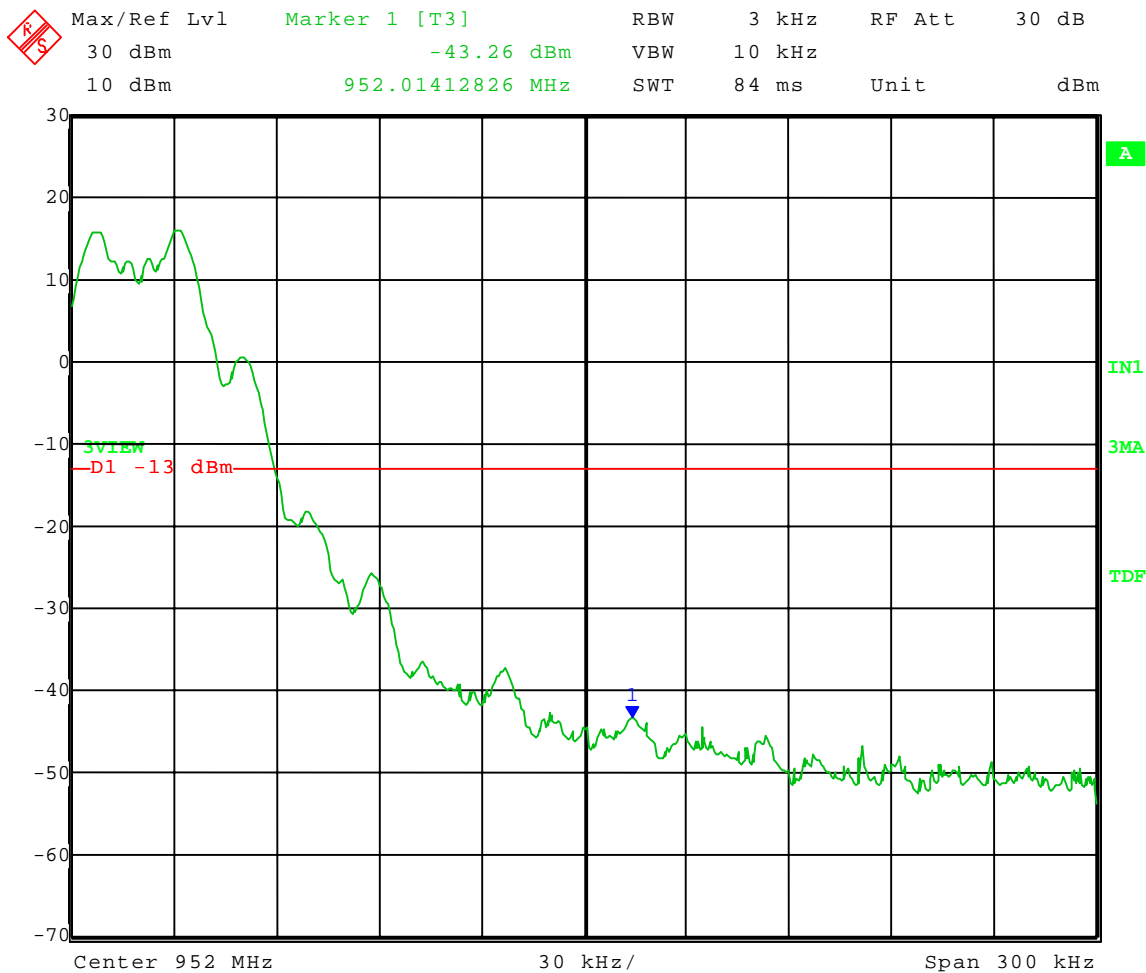
Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 951.875 MHz

Operating conditions: 120 V -30° C

Band-Edge Frequency = 952 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 15:22:46



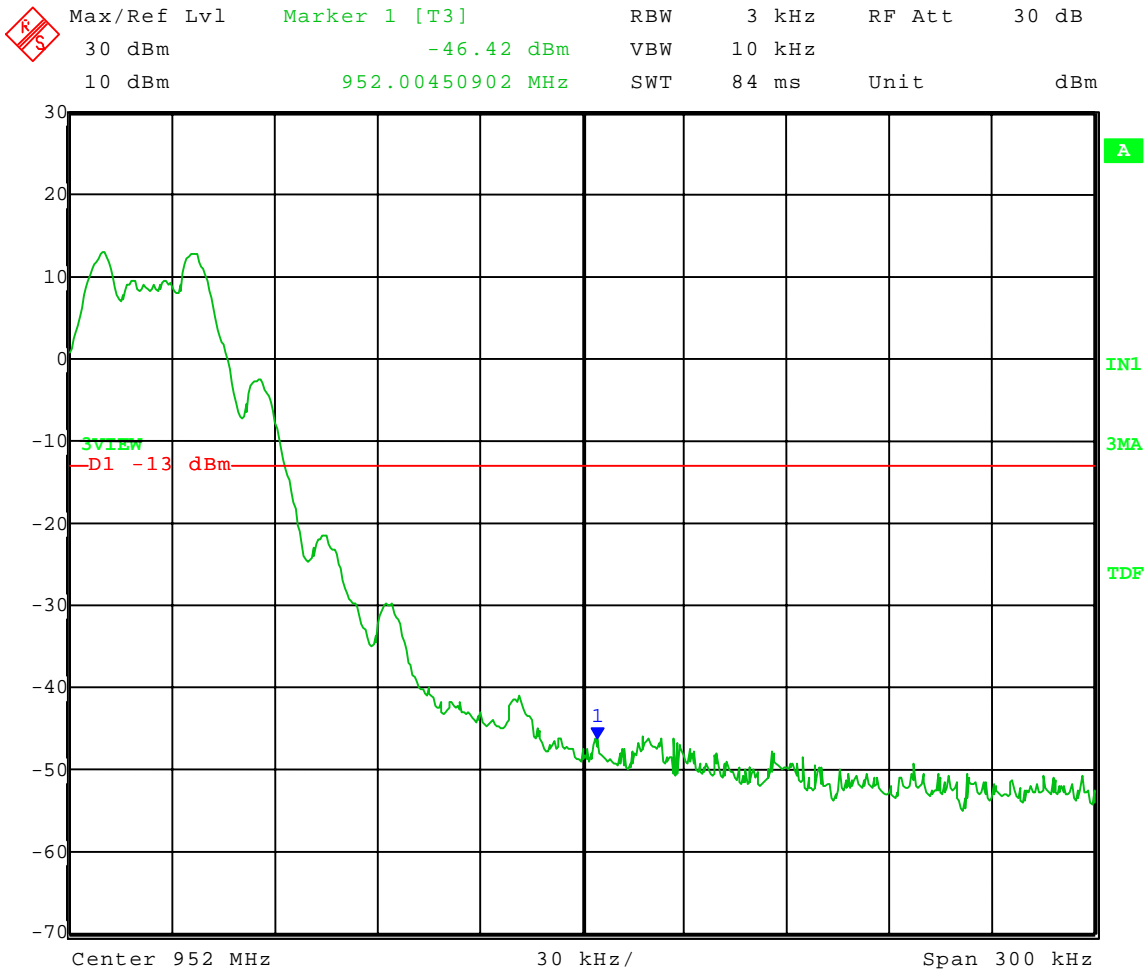
Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 951.875 MHz

Operating conditions: 120 V -20° C

Band-Edge Frequency = 952 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 14:33:44



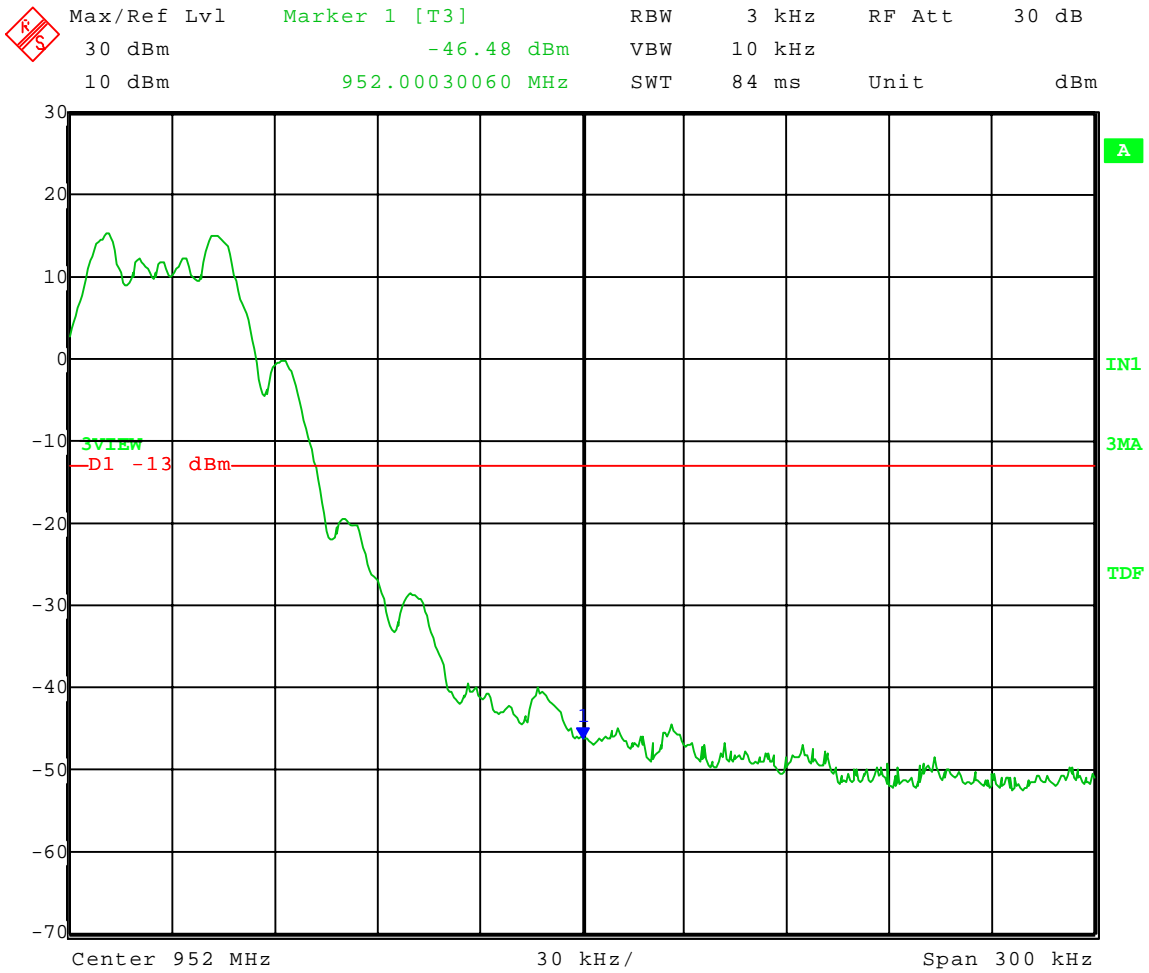
Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 951.875 MHz

Operating conditions: 120 V -10° C

Band-Edge Frequency = 952 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 13:39:11



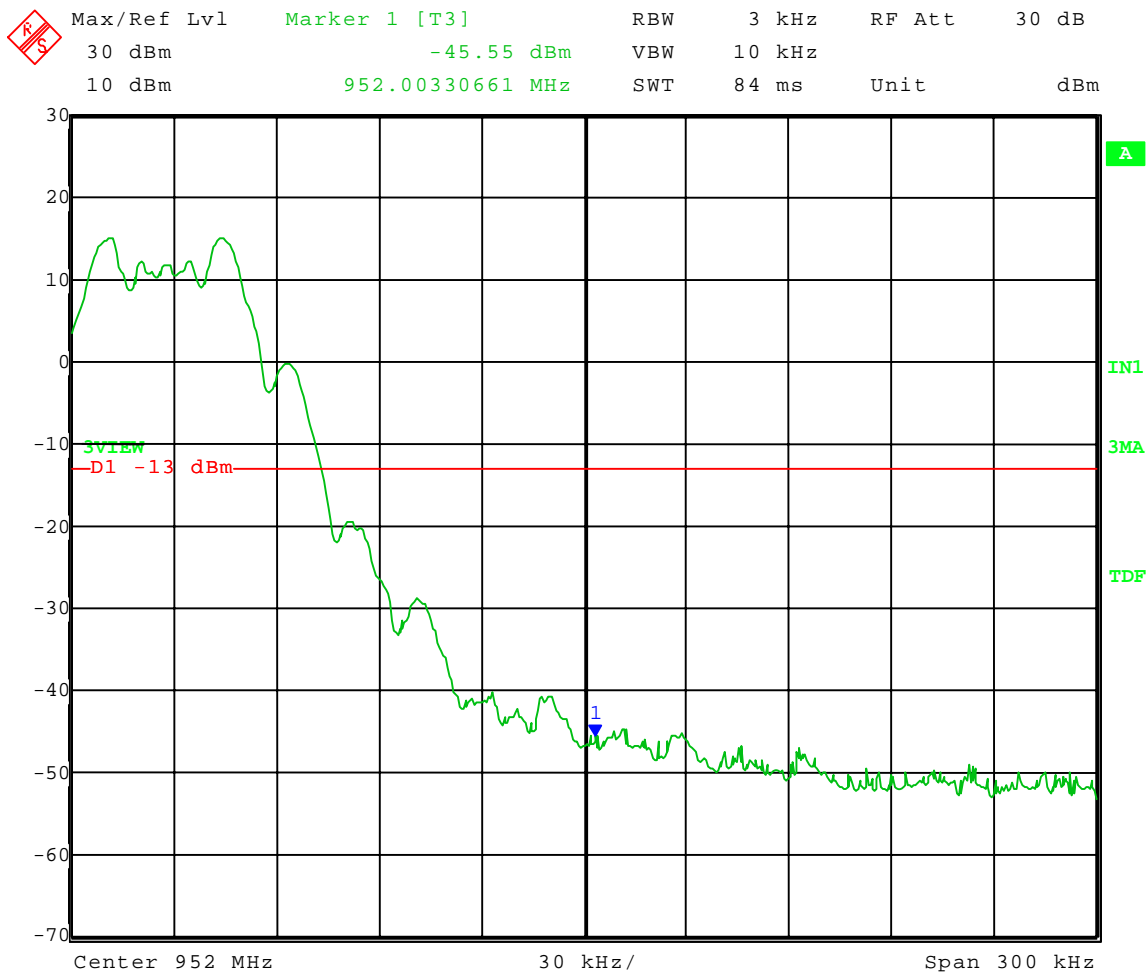
Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 951.875 MHz

Operating conditions: 120 V 0° C

Band-Edge Frequency = 952 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 13:01:58



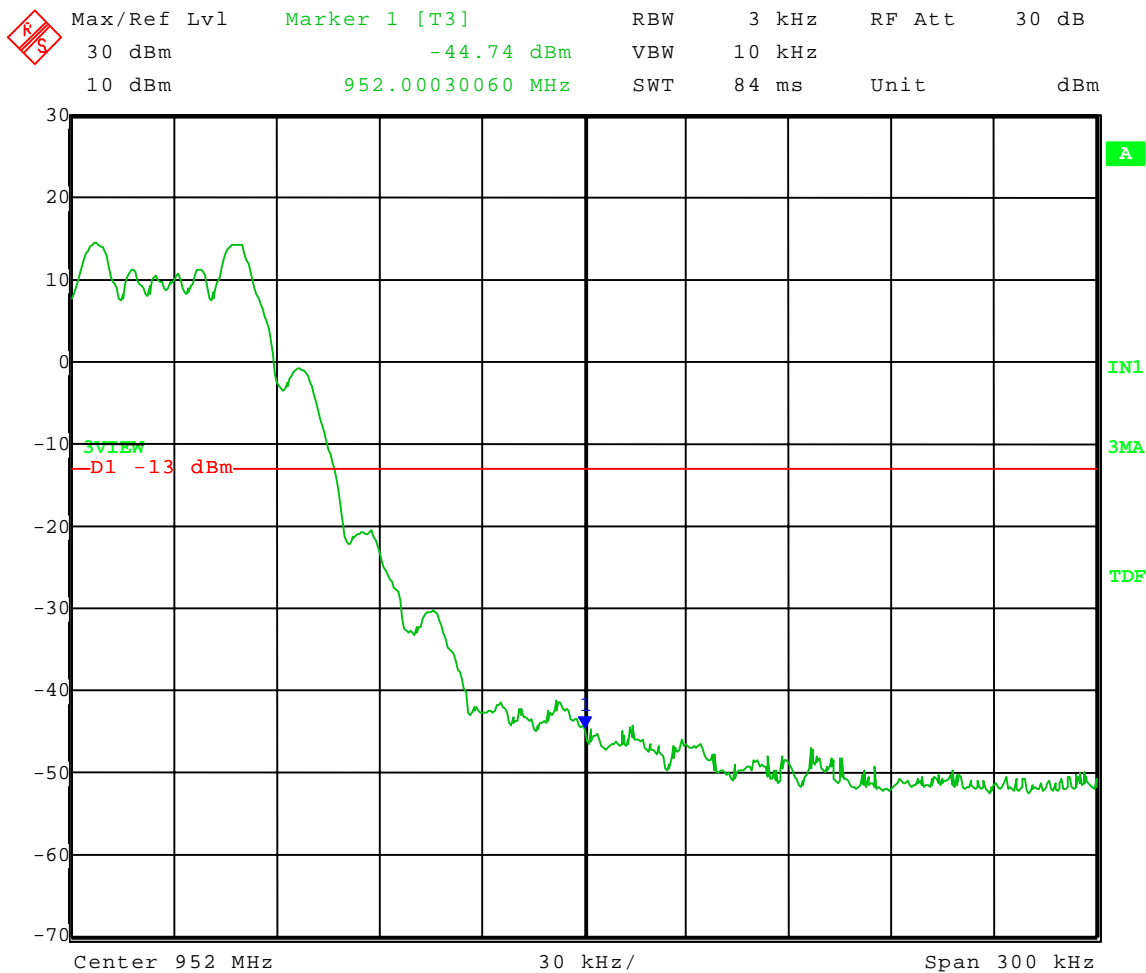
Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 951.875 MHz

Operating conditions: 120 V 10° C

Band-Edge Frequency = 952 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 12:07:18



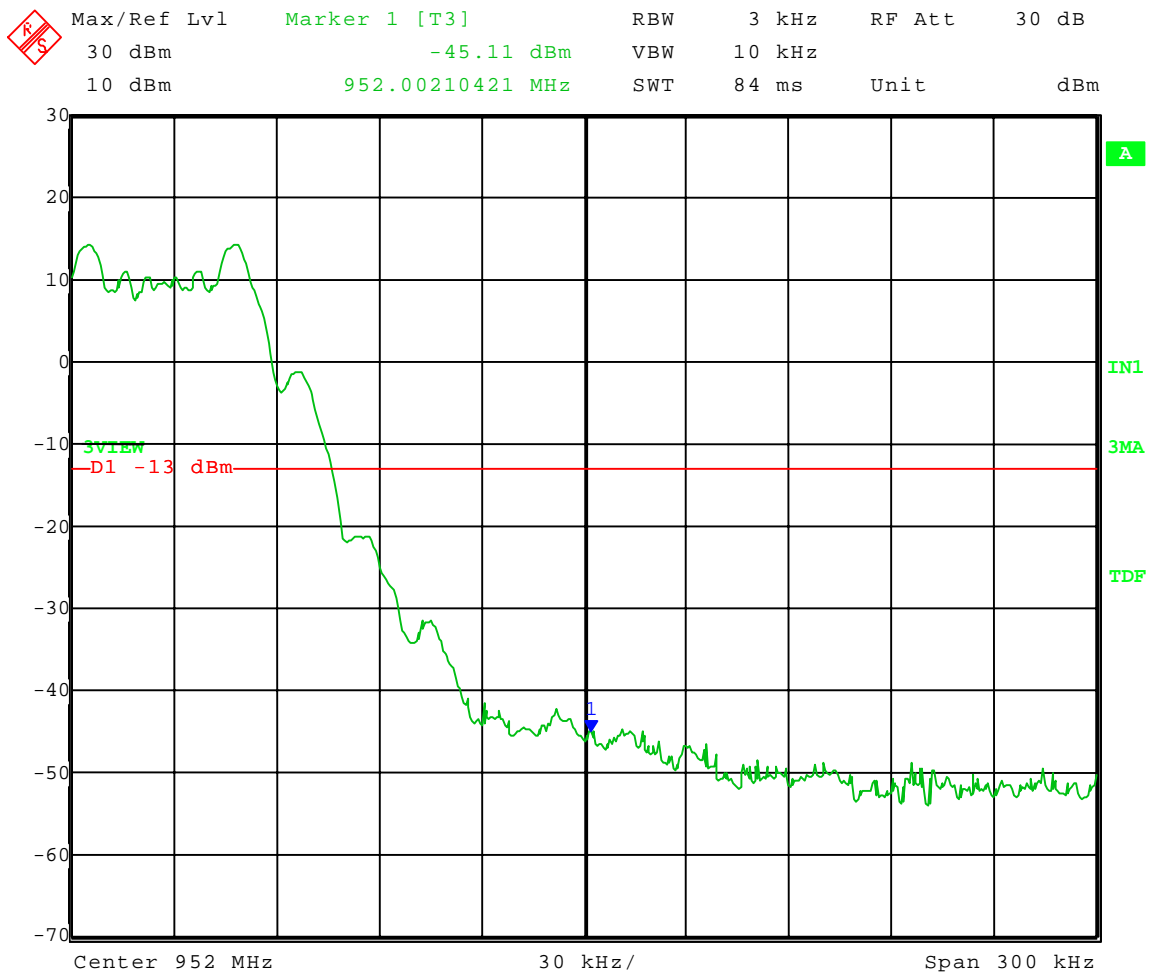
Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 951.875 MHz

Operating conditions: 120 V 30° C

Band-Edge Frequency = 952 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 10:18:11



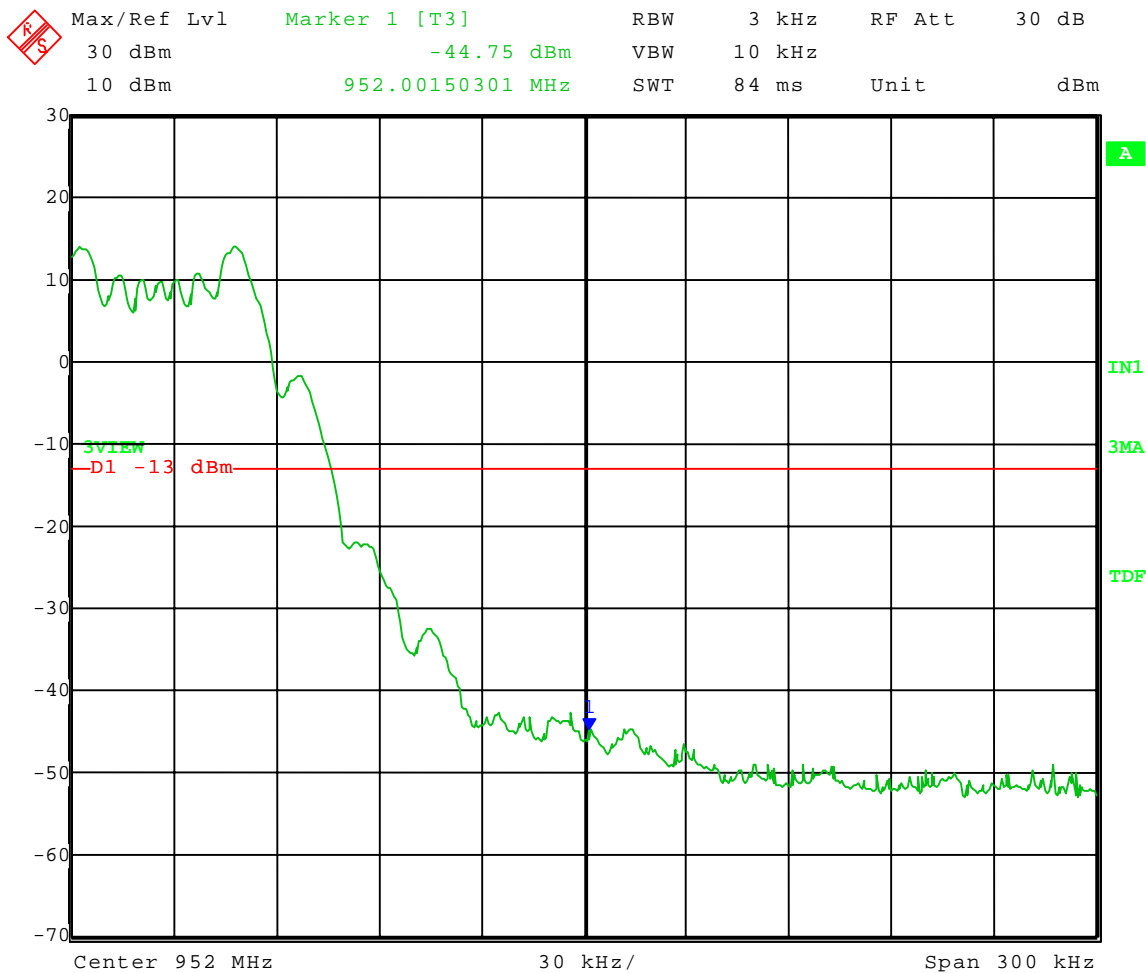
Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 01-29-2008
 Company: Shure, Inc.
 EUT: P7T-X1
 Test: Band-Edge Compliance - Conducted
 Rule part: FCC Part 74.861(d); FCC Part 2.1051
 Operator: Craig B
 Comment: Channel; 951.875 MHz

Operating conditions: 120 V 40° C

Band-Edge Frequency = 952 MHz
 Band-Edge limit = -13 dBm



Date: 29.JAN.2008 10:50:23



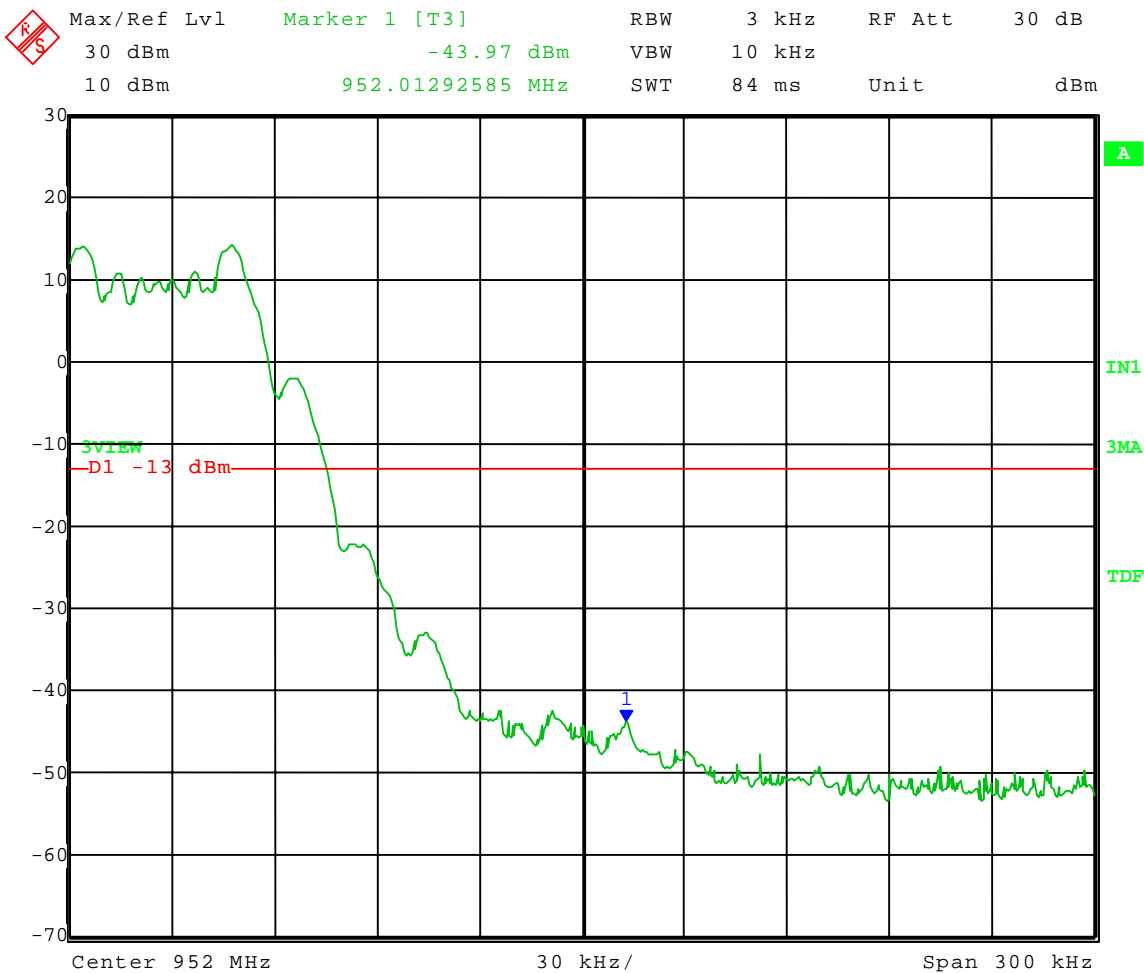
Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

Test Date: 01-29-2008
Company: Shure, Inc.
EUT: P7T-X1
Test: Band-Edge Compliance - Conducted
Rule part: FCC Part 74.861(d); FCC Part 2.1051
Operator: Craig B
Comment: Channel; 951.875 MHz

Operating conditions: 120 V 50° C

Band-Edge Frequency = 952 MHz
Band-Edge limit = -13 dBm



Date: 29.JAN.2008 11:13:59



1250 Peterson Dr., Wheeling, IL 60090

Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

GRAPHS TAKEN FOR FREQUENCY
FREQUENCY DEVIATION FROM THE
CARRIER FREQUENCY
WHEN VARYING THE TEMPERATURE
AND
PRIMARY SUPPLY VOLTAGE VARIATION
PART 2.1055a(1) & PART 2.1055d(d2)



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

DLS Electronic Systems, Inc.

Company: Shure, Inc.
 Operator: Jason L.
 Date of test: 03/14/2008

Limit = 47.2 kHz (0.005% of 944 MHz)

Frequency Stability FCC Part 74; FCC Part 2.1055

Model	Nominal Frequency (MHz)	Measured Frequency									
		+50 deg. C	Error (kHz)	+40 deg. C	Error (kHz)	+30 deg. C	Error (kHz)	+20 deg. C	Error (kHz)	+10 deg. C	Error (kHz)
P7T-X1	944.125	944.124900	-0.100	944.125301	0.301	944.125621	0.621	944.124940	-0.060	944.126784	1.784
P7T-X1	951.875	951.874980	-0.020	951.874940	-0.060	951.875942	0.942	951.874816	-0.184	951.876703	1.703

Frequency Stability FCC Part 74; FCC Part 2.1055

Model	Nominal Frequency (MHz)	Measured Frequency							
		0 deg. C	Error (kHz)	-10 deg. C	Error (kHz)	-20 deg. C	Error (kHz)	-30 deg. C	Error (kHz)
P7T-X1	944.125	944.126904	1.904	944.124980	-0.020	944.123457	-1.543	944.119860	-5.140
P7T-X1	951.875	951.876543	1.543	951.875741	0.741	951.871613	-3.387	951.871573	-3.427

Frequency Stability FCC Part 74; FCC Part 2.1055

Model	Nominal Frequency (MHz)	Measured Frequency					
		102 Volts	Error (kHz)	120 Volts	Error (kHz)	138 Volts	Error (kHz)
P7T-X1	944.125	944.124910	-0.090	944.124940	-0.060	944.124850	-0.150
P7T-X1	951.875	951.874756	-0.244	951.874816	-0.184	951.874816	-0.184

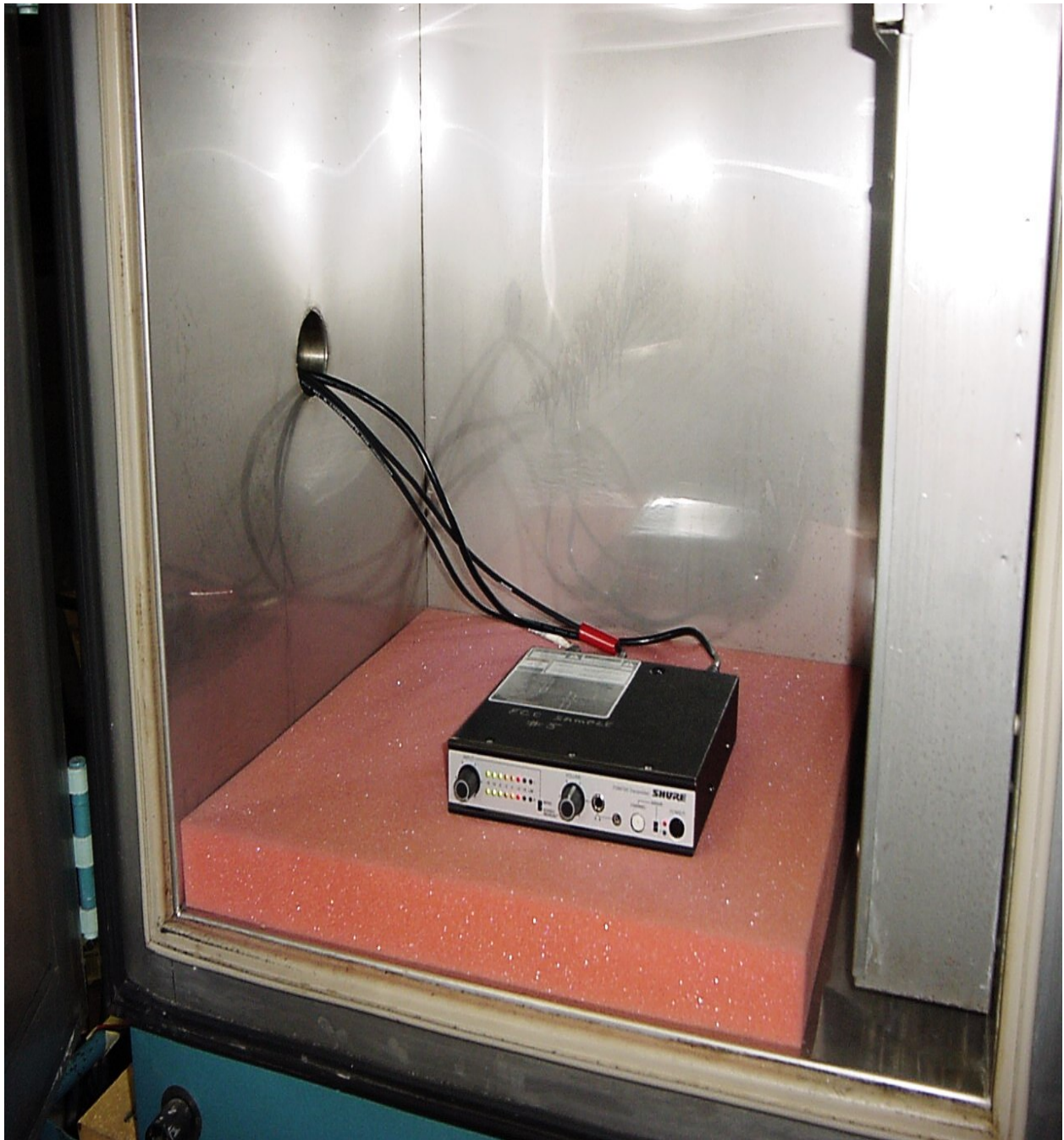


Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX A

10.0 FREQUENCY STABILITY PHOTOS TAKEN DURING TESTING





1250 Peterson Dr., Wheeling, IL 60090

Company: Shure Inc.
Model Tested: P7T-X1
Report Number: 13885

APPENDIX B

APPENDIX B

AC LINE POWER LINE CONDUCTED DATA

AND

CHARTS TAKEN DURING TESTING



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX B

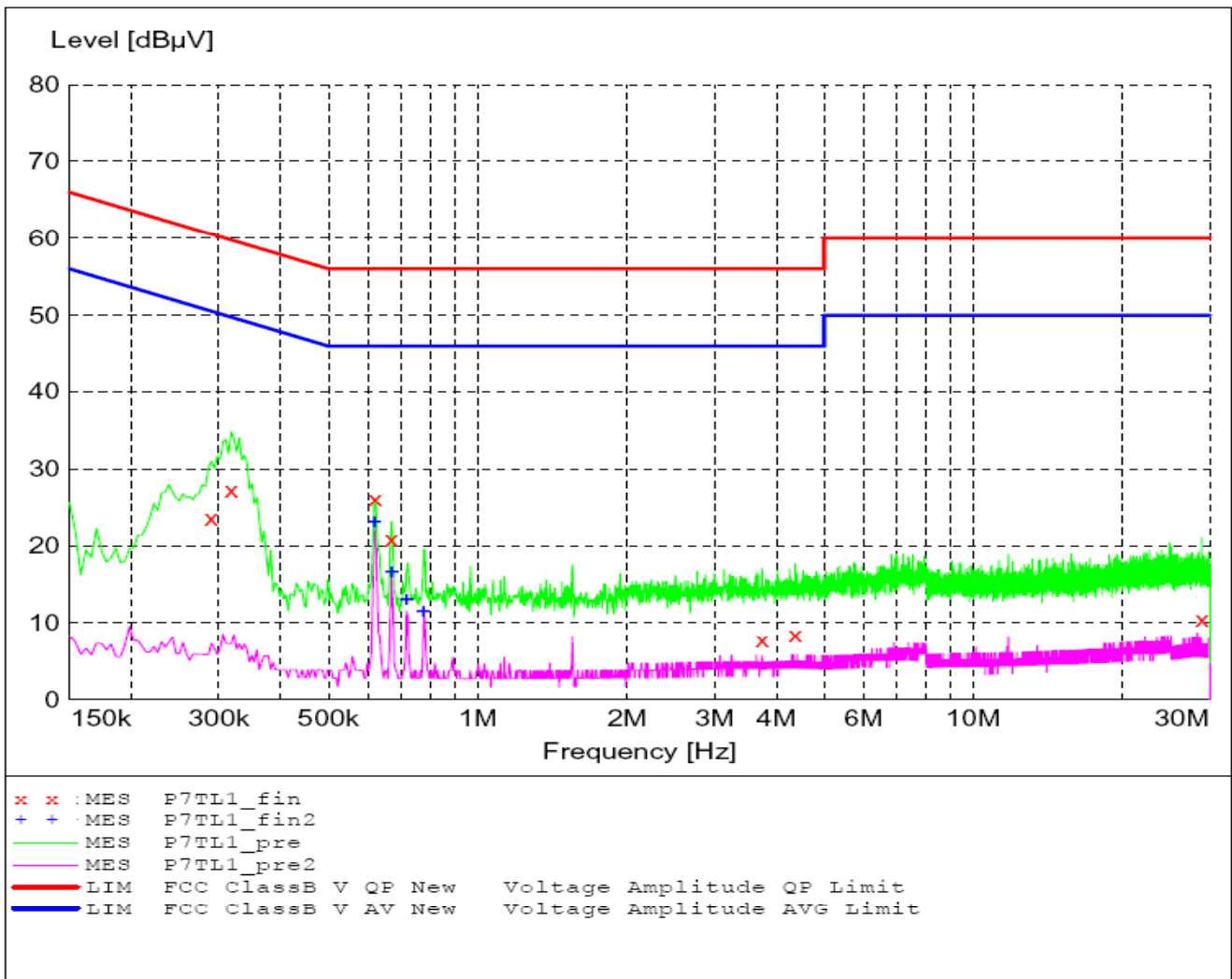
FCC Part 15 Class B

Voltage Mains Test

EUT: P7T-X1
 Manufacturer: Shure, Inc.
 Operating Condition: 70 deg. F, 22% R.H.
 Test Site: DLS O.F. Site 1 (Screenroom)
 Operator: Craig B
 Test Specification: 120 V 60Hz
 Comment: Line 1
 Date: 01-28-2008

SCAN TABLE: "Line Cond Scrn RmFin"

Short Description:			Line Conducted Emissions			
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
150.0 kHz	30.0 MHz	4.0 kHz	QuasiPeak	5.0 s	9 kHz	LISN DLS#128
			CISPR AV			





Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX B

MEASUREMENT RESULT: "P7TL1_fin"

1/28/2008 3:22PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.290000	23.50	10.6	61	37.0	QP	---	---
0.318000	27.30	10.5	60	32.5	QP	---	---
0.622000	26.10	10.2	56	29.9	QP	---	---
0.670000	20.80	10.2	56	35.2	QP	---	---
3.742000	7.80	10.4	56	48.2	QP	---	---
4.370000	8.50	10.6	56	47.5	QP	---	---
28.862000	10.50	12.0	60	49.5	QP	---	---

MEASUREMENT RESULT: "P7TL1_fin2"

1/28/2008 3:22PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.618000	23.10	10.2	46	22.9	CAV	---	---
0.670000	16.70	10.2	46	29.3	CAV	---	---
0.718000	13.00	10.3	46	33.0	CAV	---	---
0.778000	11.60	10.3	46	34.4	CAV	---	---



Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX B

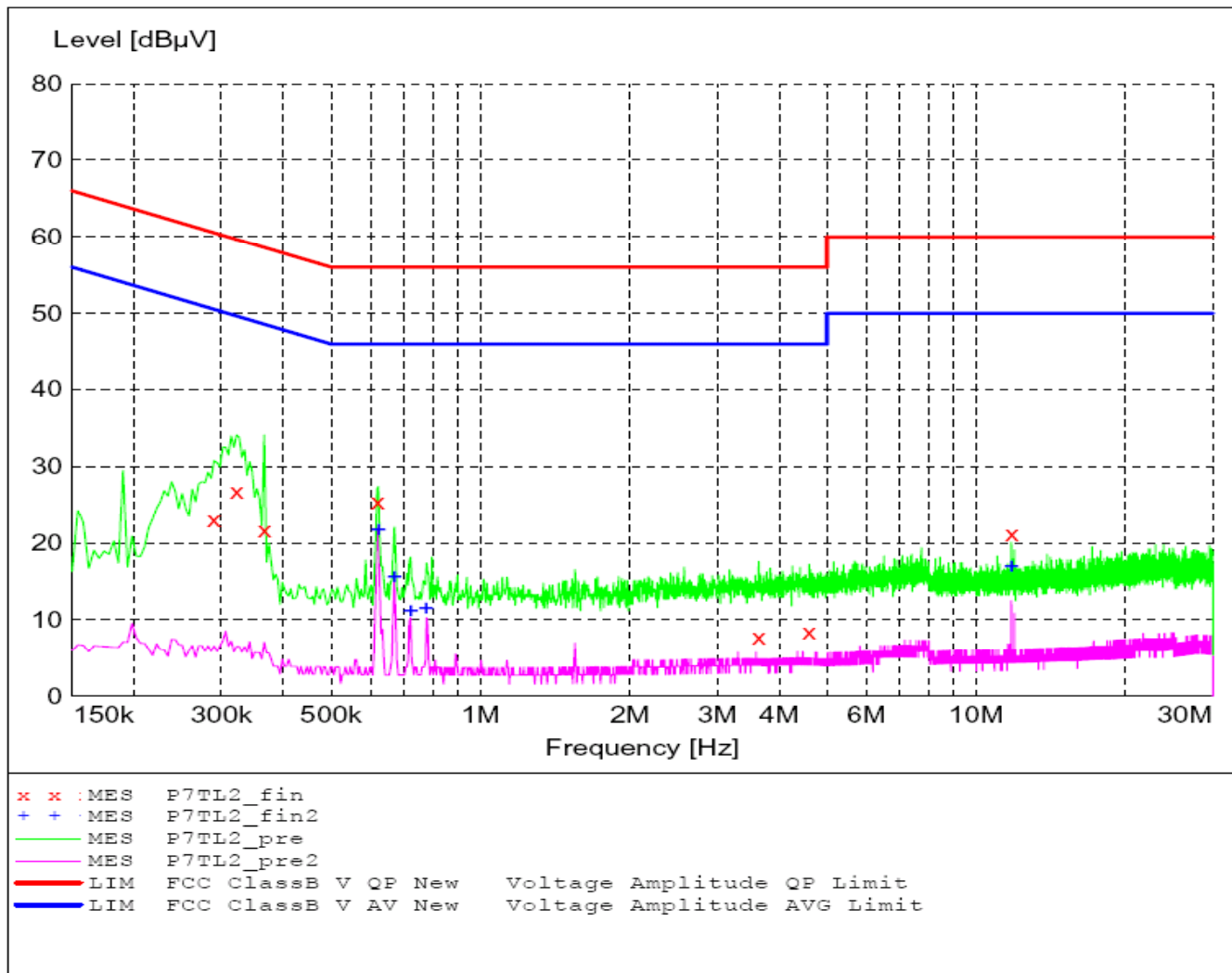
FCC Part 15 Class B

Voltage Mains Test

EUT: P7T-X1
 Manufacturer: Shure, Inc.
 Operating Condition: 70 deg. F, 22% R.H.
 Test Site: DLS O.F. Site 1 (Screenroom)
 Operator: Craig B
 Test Specification: 120 V 60Hz
 Comment: Line 2
 Date: 01-28-2008

SCAN TABLE: "Line Cond Scrn RmFin"

Short Description:			Line Conducted Emissions				Transducer
Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.		
150.0 kHz	30.0 MHz	4.0 kHz	QuasiPeak	5.0 s	9 kHz	LISN DLS#128	
CISPR AV							





Company: Shure Inc.
 Model Tested: P7T-X1
 Report Number: 13885

1250 Peterson Dr., Wheeling, IL 60090

APPENDIX B

MEASUREMENT RESULT: "P7TL2_fin"

1/28/2008 3:27PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.290000	23.10	10.6	61	37.4	QP	---	---
0.322000	26.80	10.5	60	32.9	QP	---	---
0.366000	21.70	10.4	59	36.9	QP	---	---
0.622000	25.40	10.2	56	30.6	QP	---	---
3.638000	7.80	10.5	56	48.2	QP	---	---
4.598000	8.50	10.5	56	47.5	QP	---	---
11.766000	21.20	10.8	60	38.8	QP	---	---

MEASUREMENT RESULT: "P7TL2_fin2"

1/28/2008 3:27PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.622000	21.80	10.2	46	24.2	CAV	---	---
0.670000	15.60	10.2	46	30.4	CAV	---	---
0.722000	11.10	10.3	46	34.9	CAV	---	---
0.778000	11.60	10.3	46	34.4	CAV	---	---
11.766000	16.90	10.8	50	33.1	CAV	---	---