Transmitter Tests
For a
UR2A Wireless Microphone

For : Shure Inc.
Niles, IL

P.O. No. : 4500120223
Date Received : June 11, 2007
Dates Tested : June 11 - 26, 2007
Test Personnel : Richard E. King, EMC Engineer
Specification : FCC Part 74

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Witnessed By : Juan Castrejon
Shure Inc.

Approved By : Raymond J. Klouda
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Registered Professional Engineer
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REPORT REVISION HISTORY

Revision	Date	Description
--	06/29/07	Initial release

Transmitter Tests for a Wireless Microphone

1.0 INTRODUCTION:

1.1 DESCRIPTION OF TEST ITEM: This report presents the results of a series of transmitter tests were performed on a Shure Inc. Wireless Microphone, (hereinafter referred to as the test items). Serial number A was assigned to the test item. The tests were performed for Shure Inc. of Niles, IL.

The test item is a Wireless Microphone that operates in low power auxiliary station bands 944 to 952MHz.

One transmitter with two power settings was submitted for testing.

Model No.	Serial Nos.	Rated Power (Watts)	Frequency (MHz)
UR2A	A	.010	948 MHz
UR2A	A	.050	948 MHz

1.2 PURPOSE: The test series was performed to determine if the test item meets the technical requirements of FCC Part 74 for low power auxiliary station bands 944MHz to 952MHz.

1.3 DEVIATIONS, ADDITIONS AND EXCLUSIONS: There were no deviations, additions to, or exclusions from the test specification during this test series.

1.4 APPLICABLE DOCUMENTS: The following documents of the exact issue designated form part of this document to the extent specified herein:

- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 74, dated 1 October 2006
- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 2, dated 1 October 2006
- ANSI C63.4-2003, "American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz"

1.5 SUBCONTRACTOR IDENTIFICATION: This series of tests was performed by Elite Electronic Engineering Incorporated, of Downers Grove, Illinois. The laboratory is accredited by the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP). NVLAP Lab Code:

100278-0.

1.6 LABORATORY CONDITIONS: The temperature at the time of the test was 22.8^{o}C and the relative humidity was 43%.

2.0 TEST ITEM SET-UP AND OPERATION:

2.1 POWER INPUT: The test item obtained 3.0 VDC from two 1.5VDC batteries.

2.2 GROUNDING: The test item was ungrounded during the tests.

2.3 PERIPHERAL EQUIPMENT: No peripheral equipment was submitted with the test item.

3.0 TEST EQUIPMENT:

3.1 TEST EQUIPMENT LIST: A list of the test equipment used can be found on Table I. All equipment was calibrated per the instruction manuals supplied by the manufacturer.

3.2 CALIBRATION TRACEABILITY: Test equipment is maintained and calibrated on a regular basis. All calibrations are traceable to the National Institute of Standards and Technology (NIST).

4.0 REQUIREMENTS, PROCEDURES AND RESULTS:

4.1 RF POWER OUTPUT MEASUREMENTS:

4.1.1 REQUIREMENTS: In accordance with paragraph 74.861(d)(1), The maximum transmitter power which will be authorized is 1 watt.

4.1.2 PROCEDURES: The output from the antenna port of the test item was connected to spectrum analyzer through 40 dB of attenuation. The output of the each test item was then measured.

4.1.3 RESULTS: The output power measurements are presented on page 14. As can be seen from the data, the power output of each transmitter is within the 1 watt requirement of Part 74.861(d)(1).

4.4 OCCUPIED BANDWIDTH MEASUREMENTS:

4.4.1 REQUIREMENTS: In accordance with paragraph 74.861(d)(3), 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, in any event, an emissions appearing on any discrete frequency outside the authorized band shall be attenuated, at least, 43 + 10 log(P) dB

below the mean output power of the transmitting unit.

4.4.2 PROCEDURES:

(a) The test item was connected to a spectrum analyzer through 40 dB of attenuation. The unmodulated carrier signal level was measured and recorded.

(b) The test item was modulated with a 15 kHz sine wave at an input level necessary to produce 85% of the rated system deviation.

(c) Steps (a) and (b) were repeated separately for each of the remaining 3 transmitters. The bandwidth of the spectrum analyzer was set to 5kHz (1% of the span).

4.4.3 RESULTS: The plots of the occupied bandwidth measured are presented on pages 15 through 18.

As can be seen from the data, the test items met all occupied bandwidth requirements.

4.5 SPURIOUS EMISSIONS AT ANTENNA TERMINAL:

4.5.1 REQUIREMENTS: This test determines whether the test item produces excessive spurious emissions.

In accordance with paragraph 74.861(d)(3), 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, in any event, an emissions appearing on any discrete frequency outside the authorized band shall be attenuated, at least, 43 + 10 log(P) dB below the mean output power of the transmitting unit.

4.5.2 PROCEDURES: In general, this test will measure spurious emissions at the antenna terminals.

(a) A spectrum analyzer was connected to the output of the test item. The out of band emissions were measured.

(b) The spectrum analyzer was adjusted accordingly.

  (1) For the FCC measurements, the resolution bandwidth was set to 100kHz for spurious emissions below 1GHz and 1MHz for spurious emissions above 1GHz.

(c) The test item was modulated with a 2500 Hz sine wave at an input level 16 dB greater than that necessary to produce 50% of the rated system deviation.

(d) The plots of the spectrum analyzer screens were recorded.

4.5.3 RESULTS: The plots of the antenna conducted output measurements are presented on pages 19 through 22. As can be seen from the data, the test item did not produce spurious emissions in excess of the limit.

4.6 FIELD STRENGTH OF SPURIOUS EMISSIONS:

4.6.1 PRELIMINARY RADIATED MEASUREMENTS:

4.6.1.1 REQUIREMENTS: Because emission levels in the open field may be masked by interference from sources other than the test item, preliminary radiated measurements are first performed in the low ambient environment of a shielded enclosure. The radiated emissions from the test item were first measured using peak detection. This data was then automatically plotted

4.6.1.2 PROCEDURES: All preliminary tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. The walls and ceiling of the shielded chamber are lined with ferrite tiles. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4 2003 for site attenuation.

The shielded enclosure prevents emissions from other sources, such as radio and TV stations from interfering with the measurements. All power lines and signal lines entering the enclosure pass through filters on the enclosure wall. The power line filters prevent extraneous signals from entering the enclosure on these leads.

The test was performed on each transmitter separately.

The preliminary measurements were performed with each test item operating with the input signal unmodulated. The broadband measuring antennas were positioned at a 3 meter distance from the test item. The frequency range from 30MHz to 10^{th} harmonic was investigated. The readings were taken with a peak detector function and recorded.

4.6.1.3 RESULTS: The preliminary plots are presented on pages 23 through 30. Factors for the antennas and cables were added to the data before it was plotted.

This data is only presented for a reference, and is not used as official data. All significant radiated emissions were subsequently measured at an open field test site.

4.6.2 FINAL RADIATED EMISSIONS:

4.6.2.1 REQUIREMENTS: The field strength of any emission on any frequency remove from the operating frequency by more than 250 percent of the authorized bandwidth: shall be attenuated by at least 43 + 10 log (P) dB.

4.6.2.2 PROCEDURES: Final open field measurements were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. The walls and ceiling of the shielded chamber are lined with ferrite tiles. Anechoic absorber material is installed over the ferrite tile. The floor of the chamber is used as the ground plane. The chamber complies with ANSI C63.4 2003 for site attenuation.
The final open field emission test procedure is as follows:

a) The test item was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna.
b) The antenna output of the test item was terminated in 50 ohms for the tests.
c) A double ridged waveguide antenna was placed on an adjustable height antenna mast 3 meters from the test item for emission measurements.
d) Detected emissions were maximized at each frequency by rotating the test item and adjusting the receive antenna height and polarization.
e) The maximum meter reading was recorded.
f) Measurements were performed with the input signal unmodulated.
g) Measurements were performed separately at each frequency used during the preliminary measurements.

The equivalent power into a dipole antenna was determined from the field intensity levels measured at 3 meters using the substitution method. To determine the emission power another tuned dipole antenna or double ridged waveguide antenna was set in place of the test item and connected to a calibrated signal generator. The output of the signal generator was adjusted to match the received level at the spectrum analyzer. The signal level was recorded. The reading was corrected to compensate for cable loss, as required, and when the ridged waveguide antenna was used increased by the difference in gain between the dipole and the waveguide antenna.

4.6.2.3 RESULTS OF OPEN FIELD RADIATED TEST: The final open field radiated levels are presented on pages 31 through 32. The radiated emissions were measured through the 10th harmonic. All emissions measured from the test item

were within the specification limits.

5.0 CONCLUSION:

It was found that the Shure Inc., model UR2A Wireless Microphone, did comply with the RF Power Output, the Occupied Bandwidth, the Spurious Emissions at Antenna Terminal, and the Field Strength of Spurious Emissions requirements of FCC Part 74 for low power auxiliary station bands 944MHz to 952MHz.

6.0 CERTIFICATION:

Elite Electronic Engineering Incorporated certifies that the information contained in this report was obtained under conditions which meet or exceed those specified in the test specification.

The data presented in this test report pertains only to the test item at the test date as operated by Shure Incorporated personnel. Any electrical or mechanical modification made to the test item subsequent to the specified test date will serve to invalidate the data and void this certification.

7.0 ENDORSEMENT DISCLAIMER:

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

TABLE I: TEST EQUIPMENT LIST

ELITE ELECTRONIC ENG. INC. Page: 1

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Cal Inv	Due Date
Equipment Type: ACCESSORIES, MISCELLANEOUS								
XLJ5	5W, 50 OHM TERMINATION	JFW INDUSTRIES	50T-052	6	DC-2GHZ	05/18/07	12	05/18/08
XZG3	ATTENUATOR/SWITCH DRIVER	HEWLETT PACKARD	11713A	2421A03059	---		N/A	
Equipment Type: AMPLIFIERS								
APK3	PREAMPLIFIER	AGILENT TECHNOL	8449B	3008A01593	1-26.5GHZ	06/17/0712		06/17/08
Equipment Type: ANTENNAS								
NTA0	BILOG ANTENNA	CHASE EMC LTD.	BILOG CBL611	2057	0.03-2GHZ	08/21/06	12	08/21/07
NWH0	RIDGED WAVE GUIDE	TENSOR	4105	2081	1-12.4GHZ	10/09/06	12	10/09/07
NWP0	DOUBLE RIDGED WAVEGUIDE AN	EATON	3115	2099	1GHZ-18GHZ	10/09/06	12	10/09/07
Equipment Type: ATTENUATORS								
T1EA	10DB, 25W ATTENUATOR	WEINSCHEL	46-10-34	BN2316	DC-18GHZ	03/22/07	12	03/22/08
T2D5	20DB, 25W ATTENUATOR	WEINSCHEL	46-20-43	AY9244	DC-18GHZ	02/22/07	12	02/22/08
T2D7	20DB, 25W ATTENUATOR	WEINSCHEL	46-20-43	AY9246	DC-18GHZ	10/04/06	12	10/04/07
Equipment Type: CONTROLLERS								
CDS2	COMPUTER	GATEWAY	MFATXPNT NMZ	0028483108	1.8GHZ		N/A	
CMA0	MULTI-DEVICE CONTROLLER	EMCO	2090	9701-1213	---		N/A	
Equipment Type: METERS								
MFC0	MICROWAVE FREQ. COUNTER	HEWLETT PACKARD	5343A	2133A00591	10HZ-26GHZ	05/30/07	12	05/30/08
Equipment Type: PROBES; CLAMP-ON & LISNS								
PLL2	50UH LISN 462D	ELITE	462D/70A	003	0.01-400MHZ	02/12/07	12	02/12/08
PLLA	50UH LISN 462D	ELITE	462D/70A	011	0.01-400MHZ	03/08/07	12	03/08/08
Equipment Type: POWER SUPPLIES								
SBA4	DC POWER SUPPLY	APLAB	ZS3205	99071028	0-32V;0-5A		NOTE 1	
Equipment Type: PRINTERS AND PLOTTERS								
HRE1	LASER JET 5P	HEWLETT PACKARD	C3150A	USHB061052	---		N/A	
Equipment Type: RECEIVERS								
RAC2	SPECTRUM ANALYZER	HEWLETT PACKARD	85660B	2504A01234	100HZ-22GHZ	08/24/06	12	08/24/07
RACD	RF PRESELECTOR	HEWLETT PACKARD	85685A	3010A01205	20HZ-2GHZ	02/16/07	12	02/16/08
RAF6	QUASIPEAK ADAPTER	HEWLETT PACKARD	85650A	2412A00403	0.01-1000MHZ	08/17/06	12	08/17/07
RAKG	RF SECTION	HEWLETT PACKARD	85462A	3549A00284	0.009-6500MHZ	11/27/06	12	11/27/07
RAKH	RF FILTER SECTION	HEWLETT PACKARD	85460A	3448A00324	---	11/27/06	12	11/27/07
RBB0	EMI TEST RECEIVER 20HZ TO	ROHDE & SCHWARZ	ESIB40	100250	20 HZ TO 40GHZ	09/29/06	12	09/29/07
RYE0	MODULATION ANALYZER	HEWLETT PACKARD	8901B	3104A03410	0.15-1300MHZ	05/04/07	12	05/04/08
Equipment Type: SIGNAL GENERATORS								
GRD0	SIGNAL GENERATOR	HEWLETT PACKARD	E4432B	US38080222	250KHZ-3.0GHZ	08/28/06	12	08/28/07
GWH1	DDS FUNCTION GENERATOR	WAVETEK	29	071747	0.0001HZ-10MHZ	03/15/07	13	04/15/08

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Cal. Interval: Listed in Months I/O: Initial Only N/A: Not Applicable
Note 1: For the purpose of this test, the equipment was calibrated over the specified frequency range, pulse rate, or modulation prior to the test or monitored by a calibrated instrument.

Output Power Test Set-up

Occupied Bandwidth Test Set-up

Antenna Conducted Emissions Test Set-up

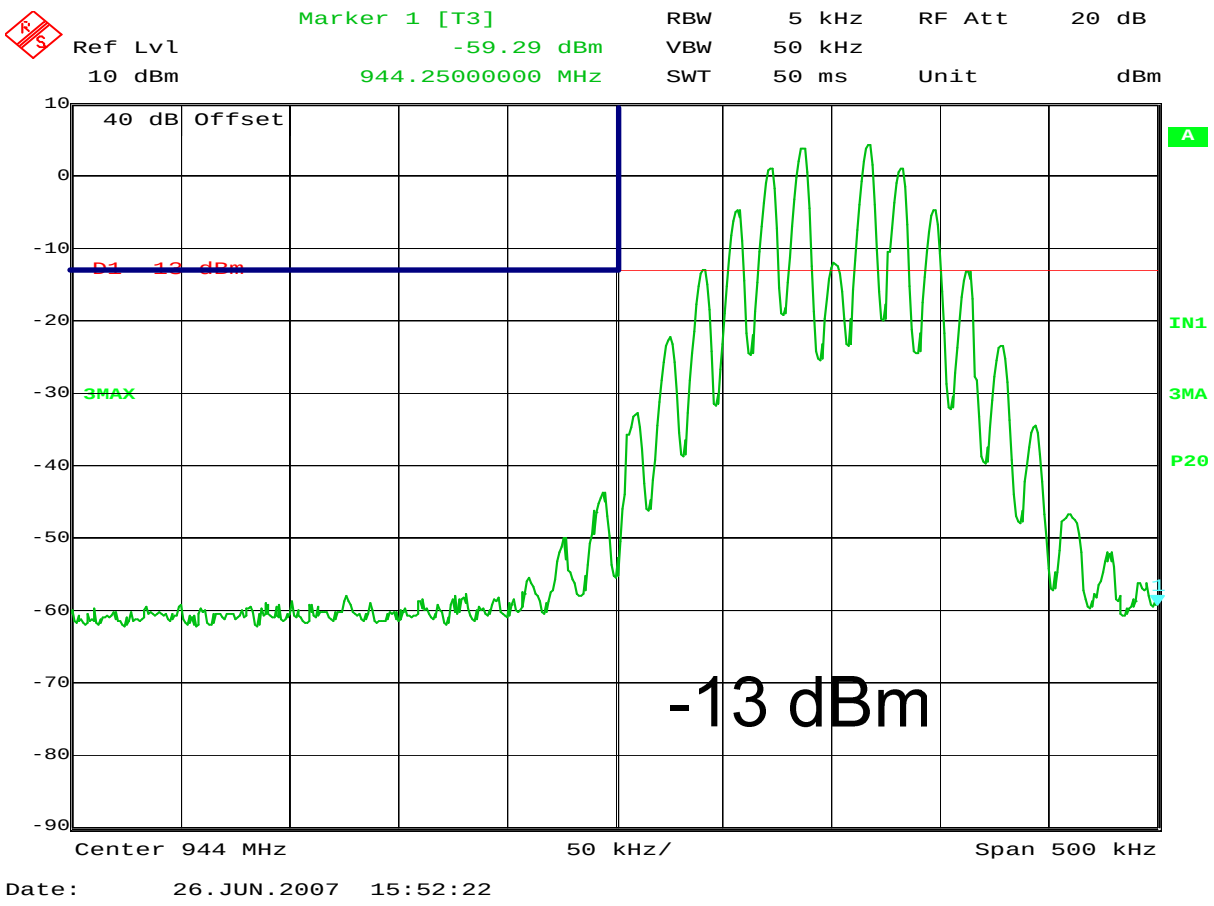
Data Page

MANUFACTURER : Shure Inc.
MODEL NO. : All Transmitters
SERIAL NO. : None assigned
SPECIFICATION : FCC-74
TEST PERFORMED : RF Output Power
DATE : June 11, 2007
NOTES :

Unit	Rated Power (Watts)	Frequency (MHz)	Meter Reading (dBm)	Attenuation (dB)	Total (dBm)	Limit (dBm)	Total (Watts)	Limit (Watts)
UR2A	.010	948.0	-30.41	40.0	9.59	30.0	0.009	1.000
UR2A	.050	948.0	-23.10	40.0	16.9	30.0	0.049	1.000

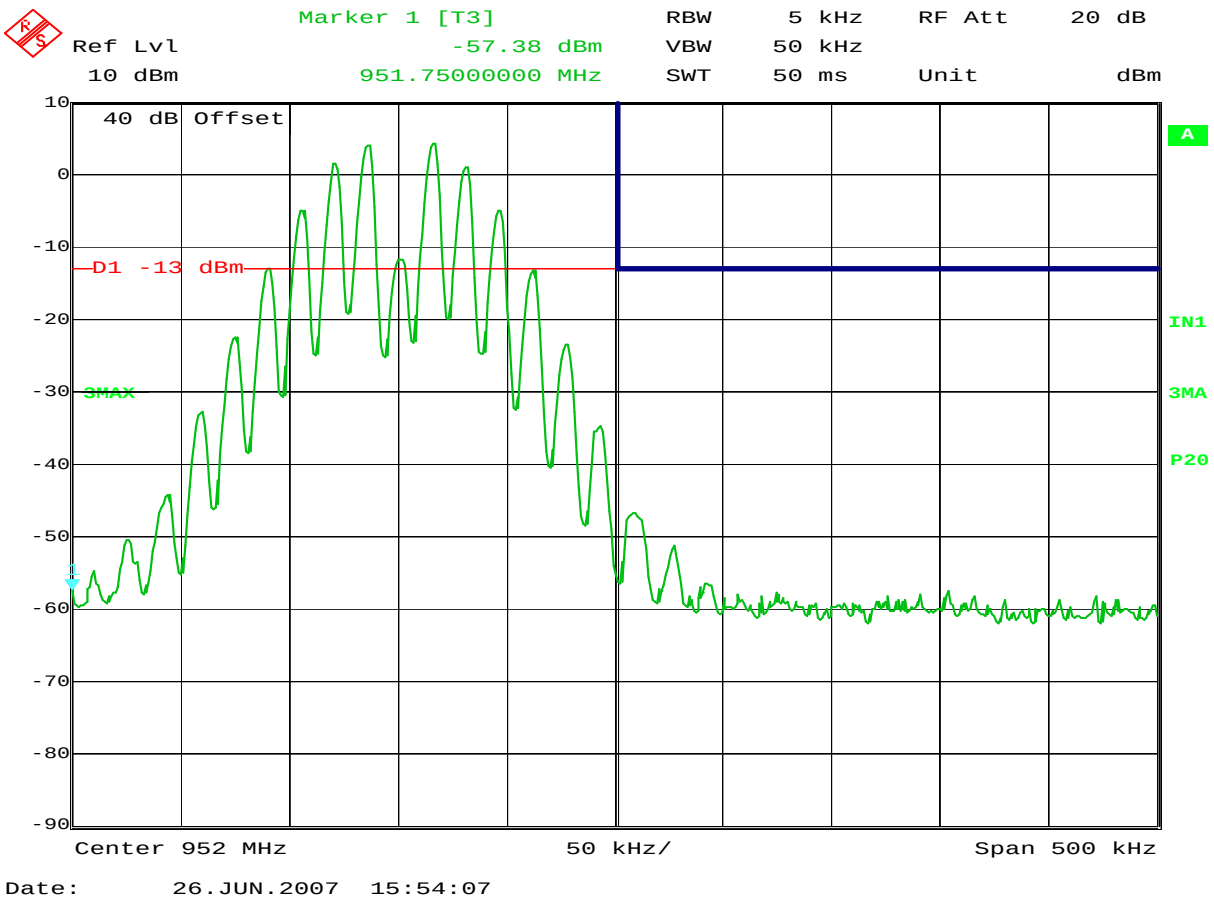
Checked BY : Richard E. King

Richard E. King



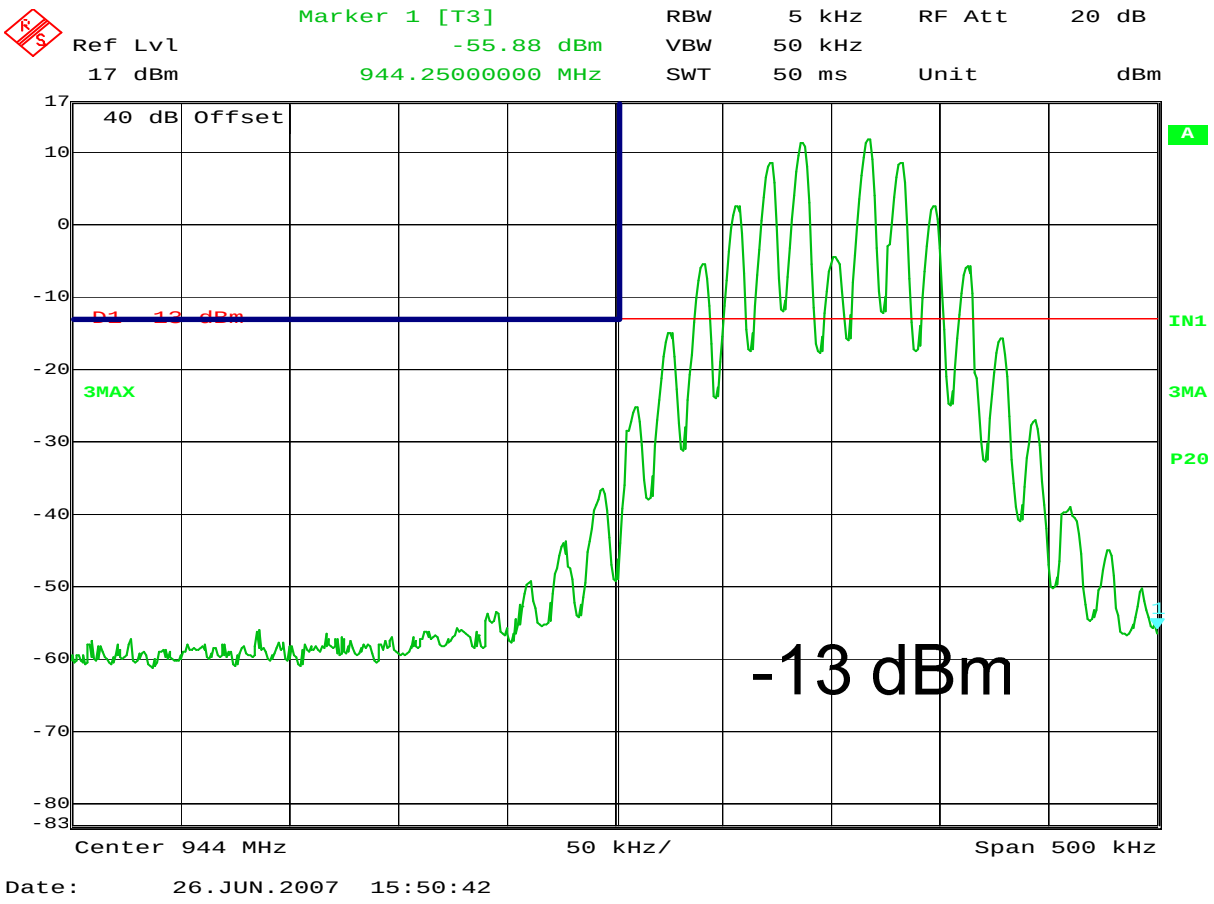
CFR 47 Part 74 Occupied Bandwidth

MANUFACTURER : Shure Inc.
MODEL NUMBER : UR2A
SERIAL NUMBER : A
TEST MODE : Tx 10mW @ 944.100 MHz
TEST PARAMETERS : 15kHz at 85% modulation



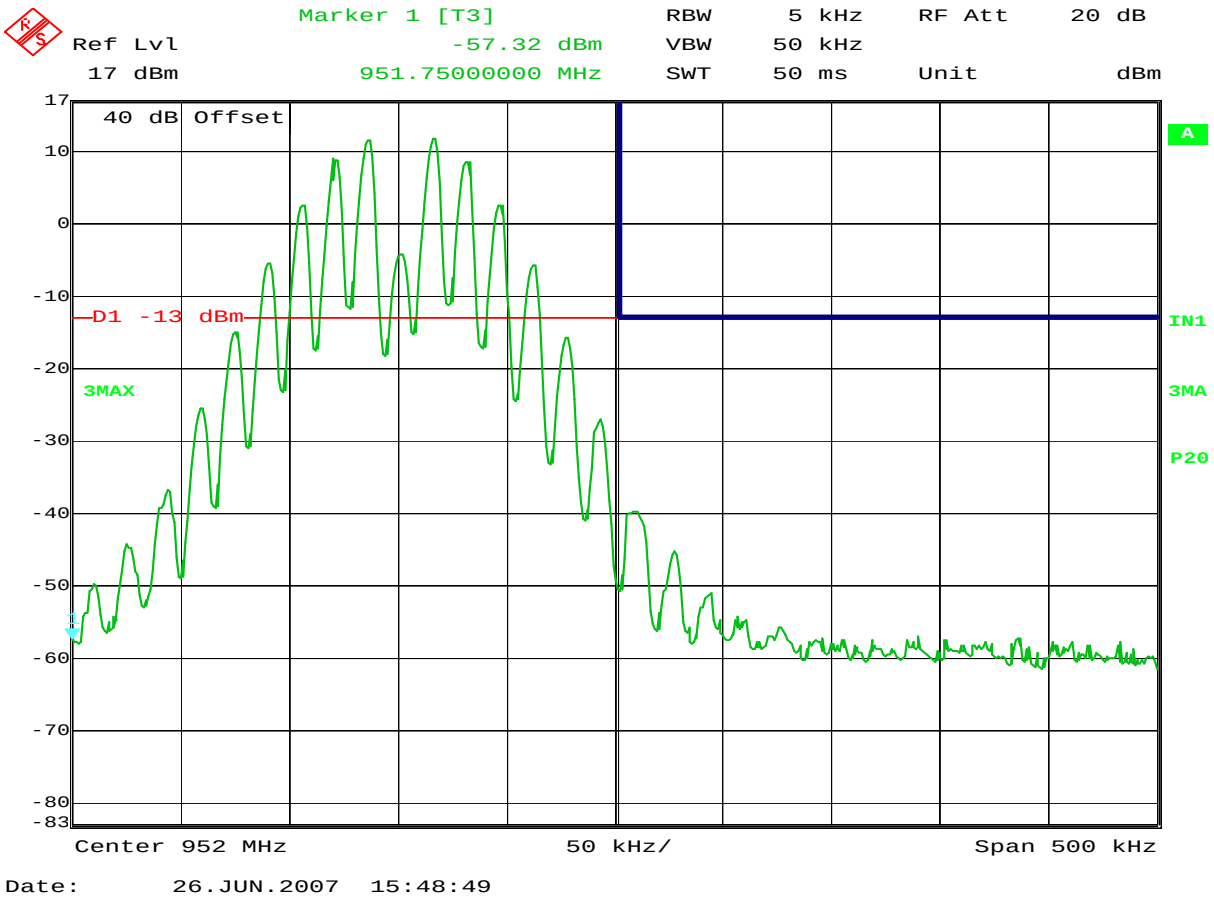
CFR 47 Part 74 Occupied Bandwidth

MANUFACTURER : Shure Inc.
MODEL NUMBER : UR2A
SERIAL NUMBER : A
TEST MODE : Tx 10mW @ 951.900 MHz
TEST PARAMETERS : 15kHz @ 85% Modulation



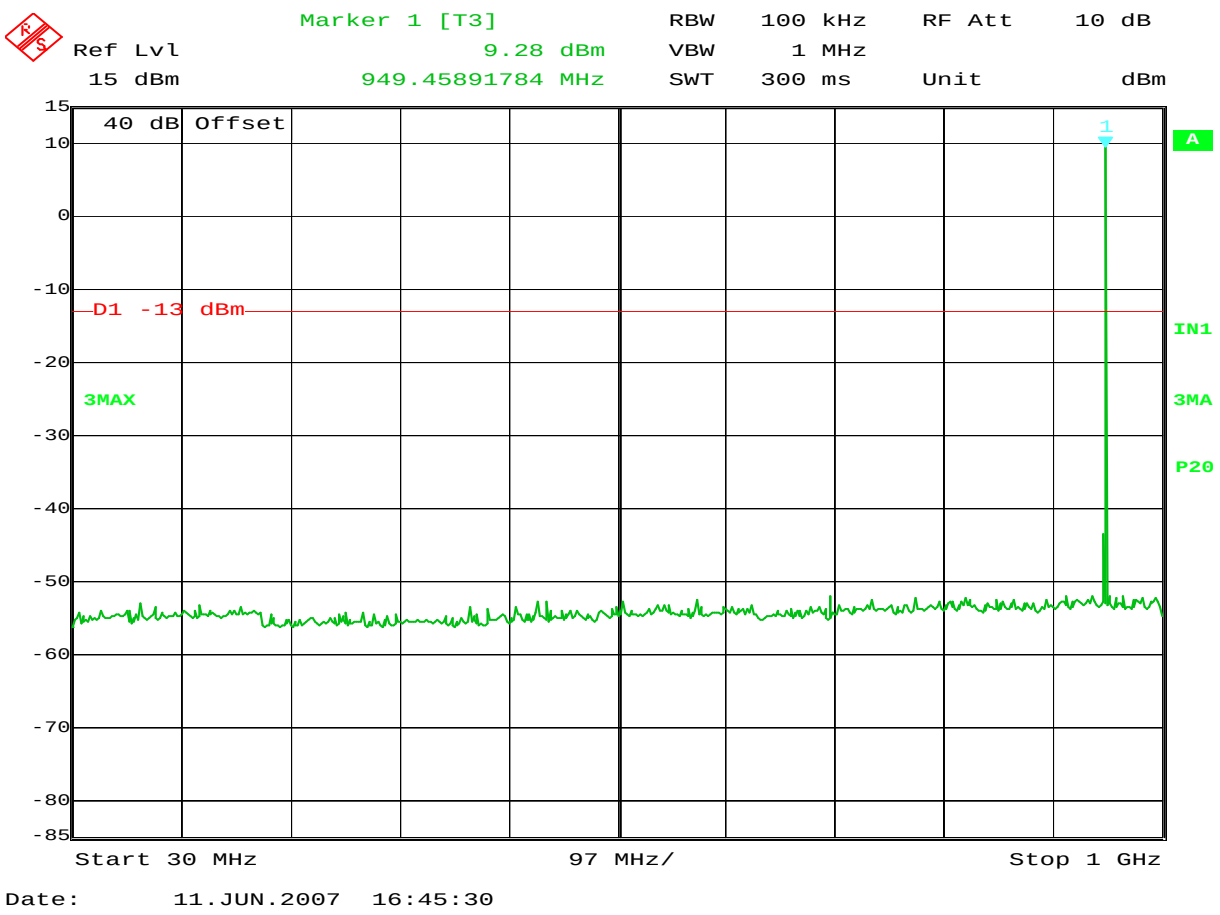
CFR 47 Part 74 Occupied Bandwidth

MANUFACTURER : Shure Inc.
MODEL NUMBER : UR2A
SERIAL NUMBER : A
TEST MODE : Tx 50mW @ 944.100 MHz
TEST PARAMETERS : 15kHz at 85% modulation



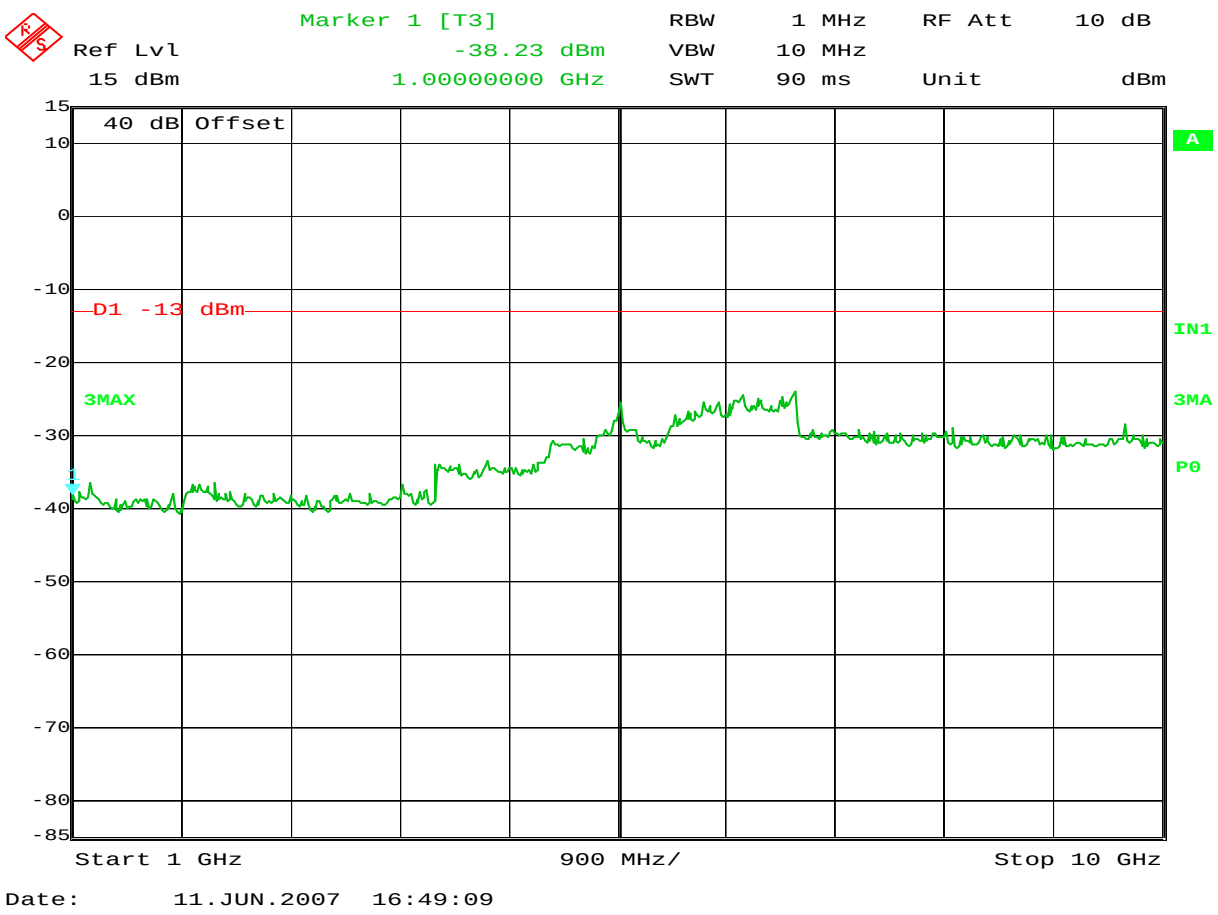
CFR 47 Part 74 Occupied Bandwidth

MANUFACTURER : Shure Inc.
MODEL NUMBER : UR2A
SERIAL NUMBER : A
TEST MODE : Tx 50mW @ 951.900 MHz
TEST PARAMETERS : 15kHz @ 85% Modulation



CFR 47 Part 74 Antenna Conducted Emissions

MANUFACTURER : Shure Inc.
MODEL NUMBER : UR2A
SERIAL NUMBER : A
TEST MODE : Tx 10mW @ 948 MHz
NOTES :



CFR 47 Part 74 Antenna Conducted Emissions

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SERIAL NUMBER : A
TEST MODE : Tx 10mW @ 948 MHz
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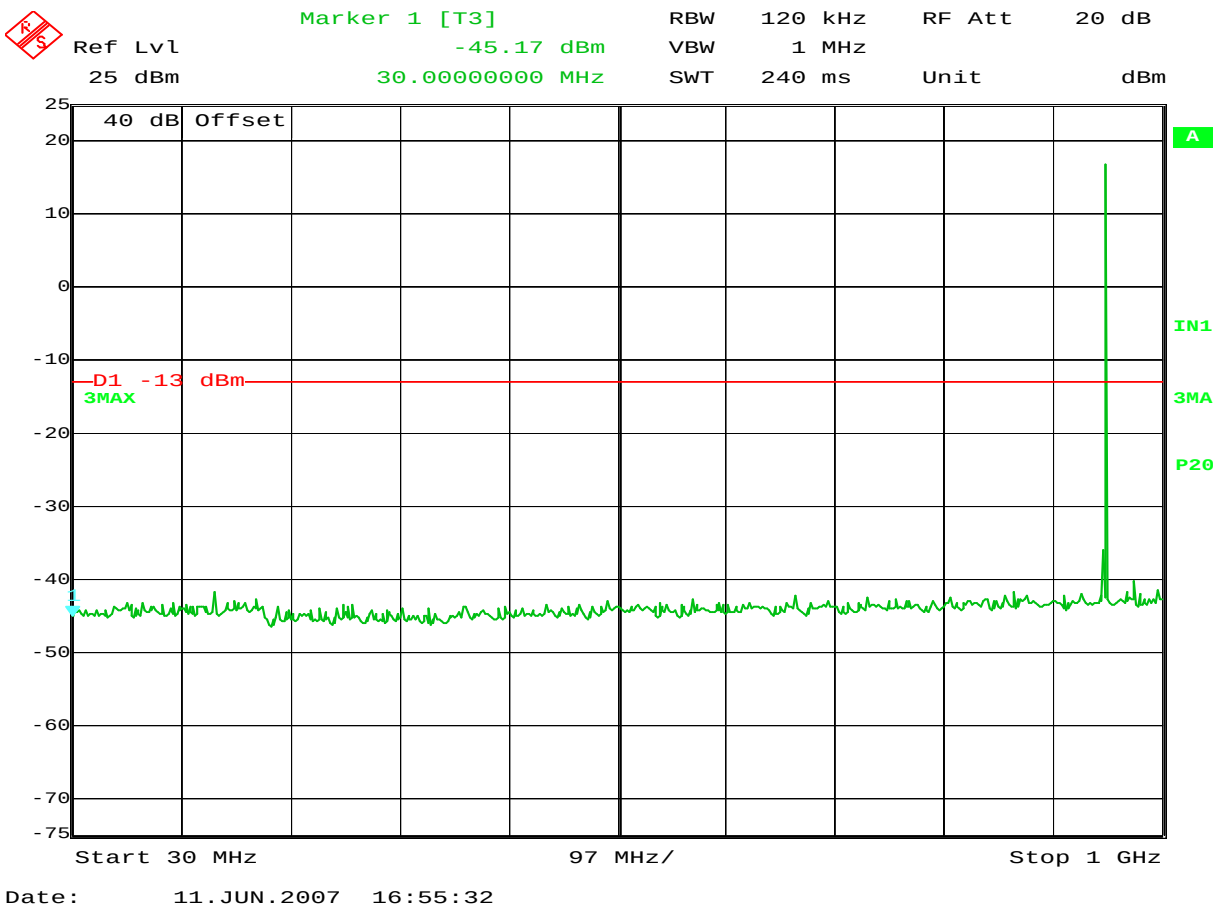

CFR 47 Part 74 Antenna Conducted Emissions

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SERIAL NUMBER : A
TEST MODE : Tx 50mW @ 948 MHz
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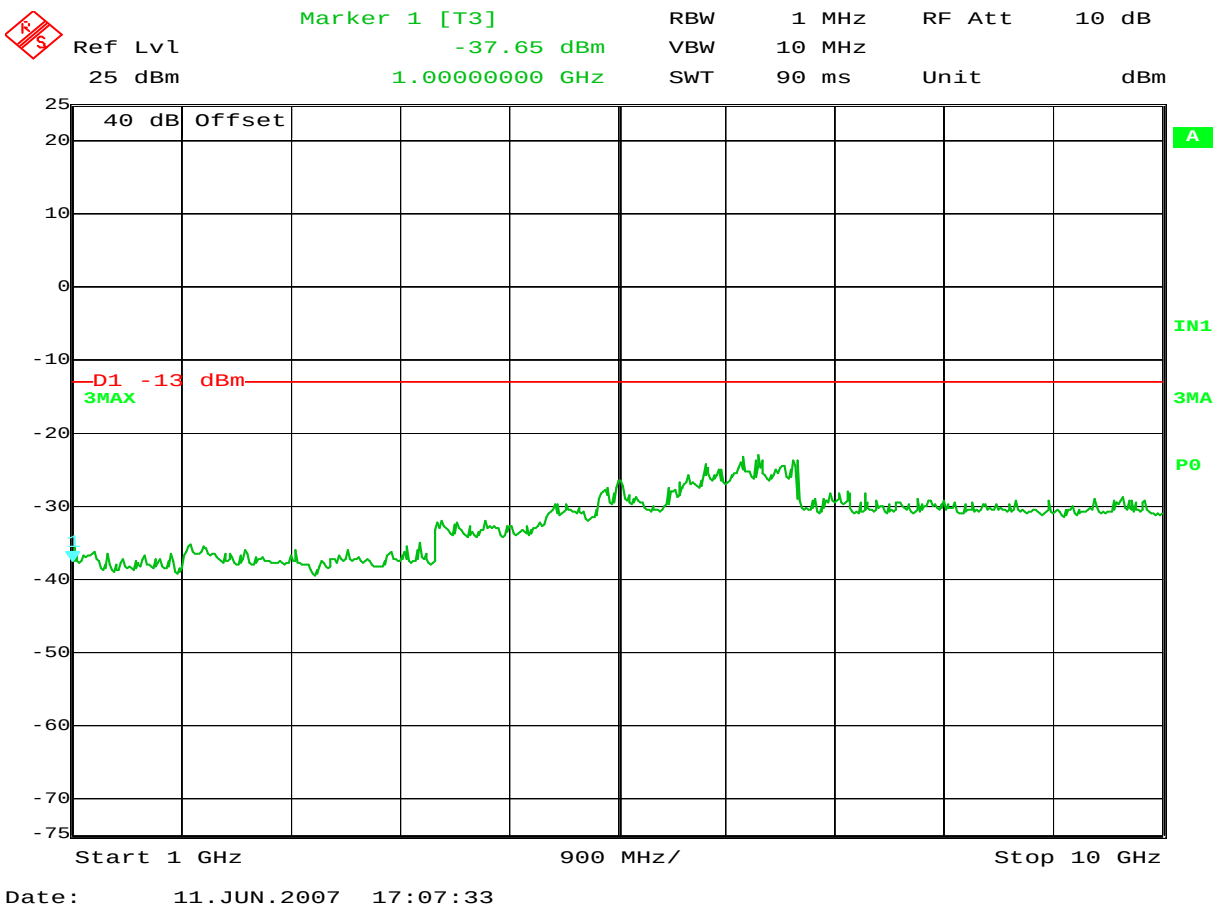

CFR 47 Part 74 Antenna Conducted Emissions

MANUFACTURER : Shure Inc.
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SERIAL NUMBER : A
TEST MODE : Tx 50mW @ 948 MHz
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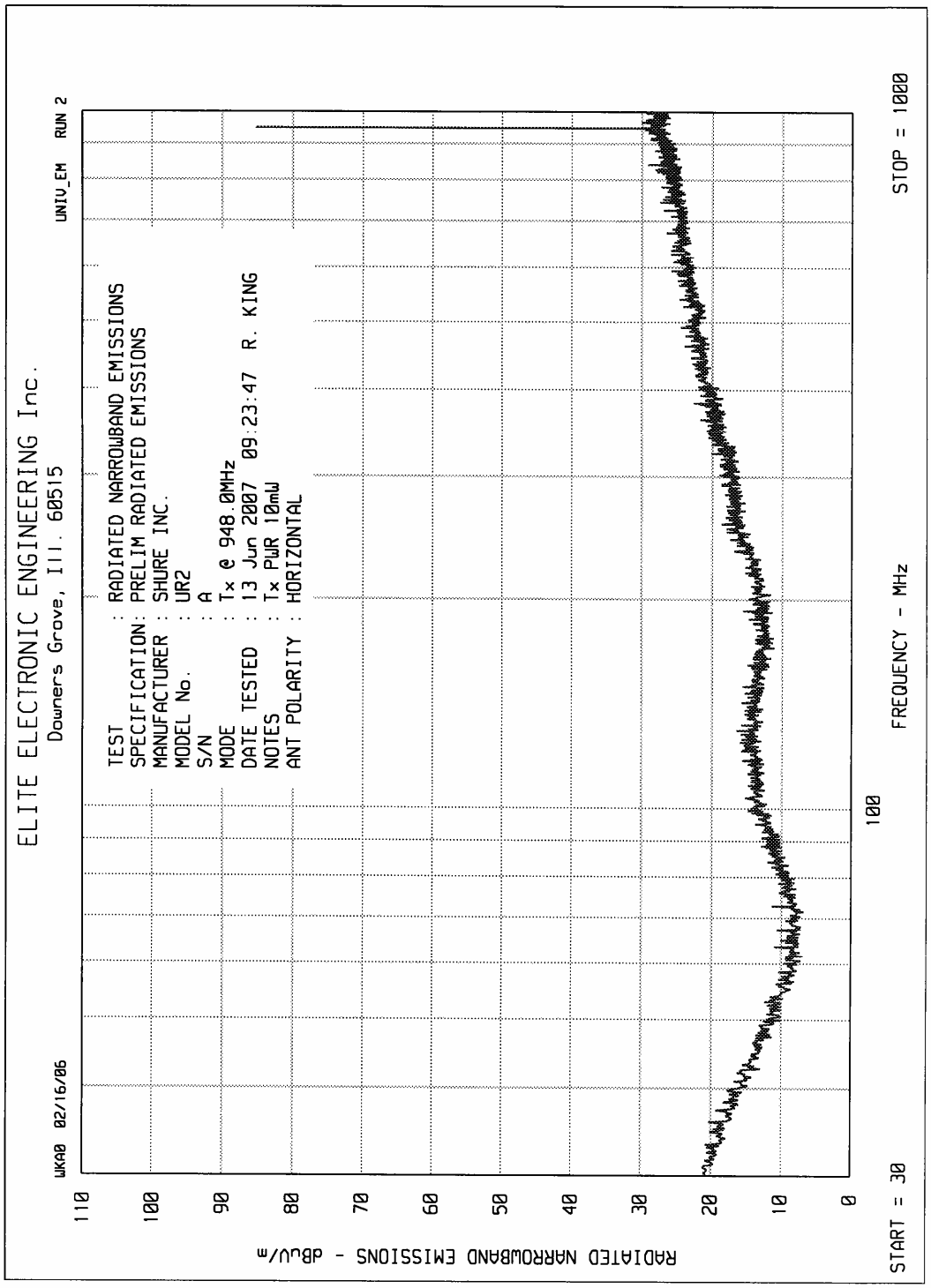
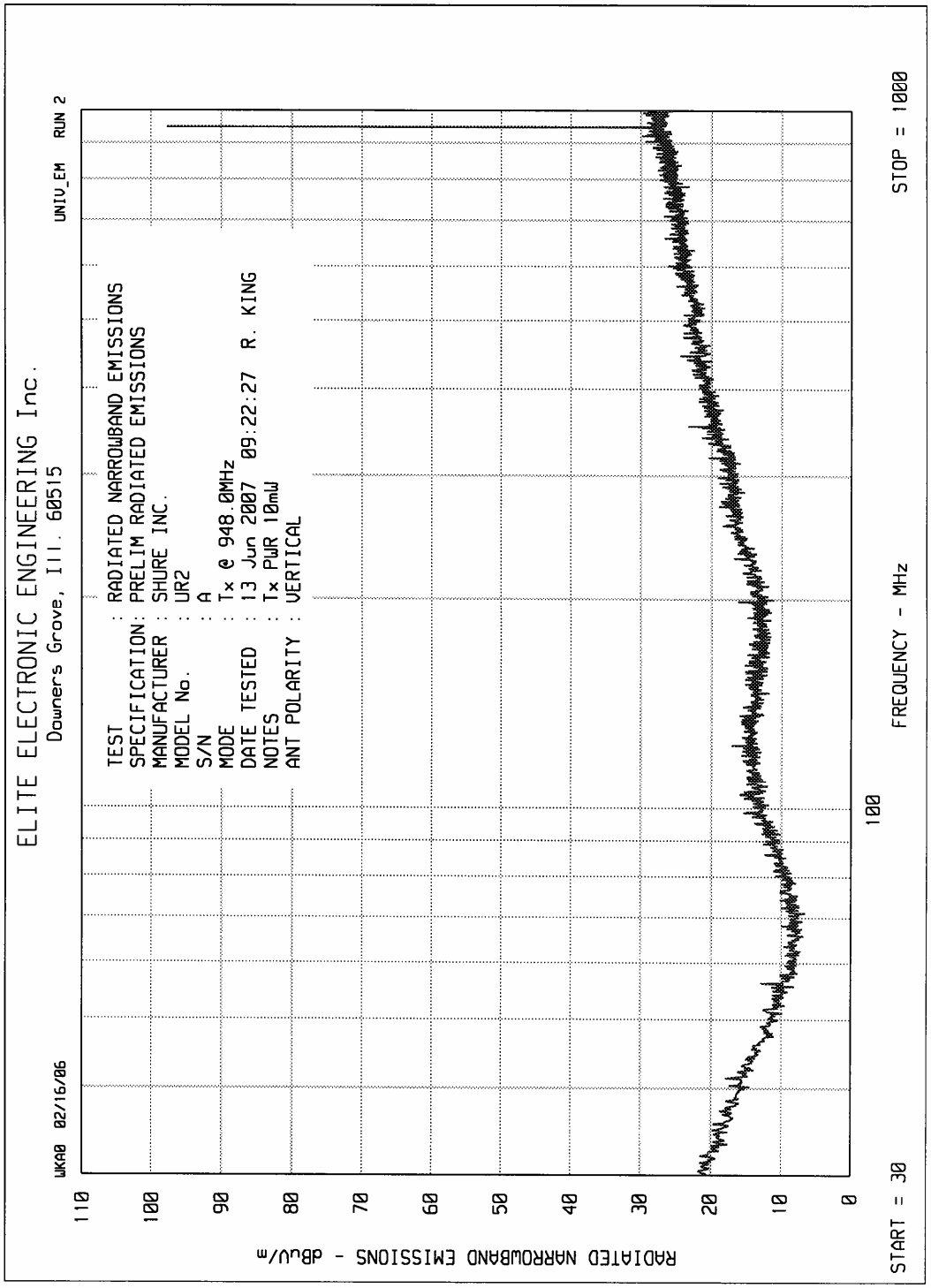
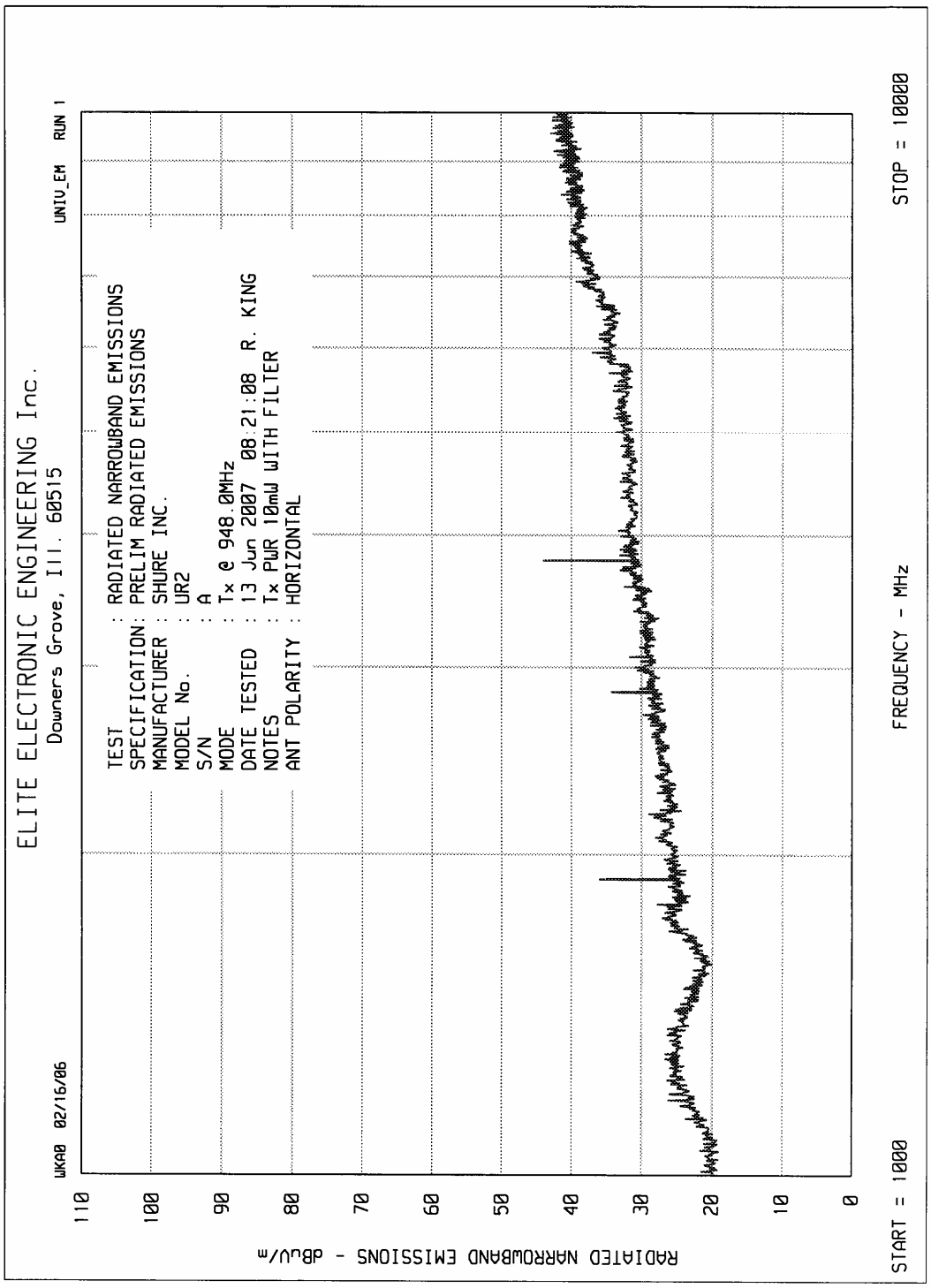
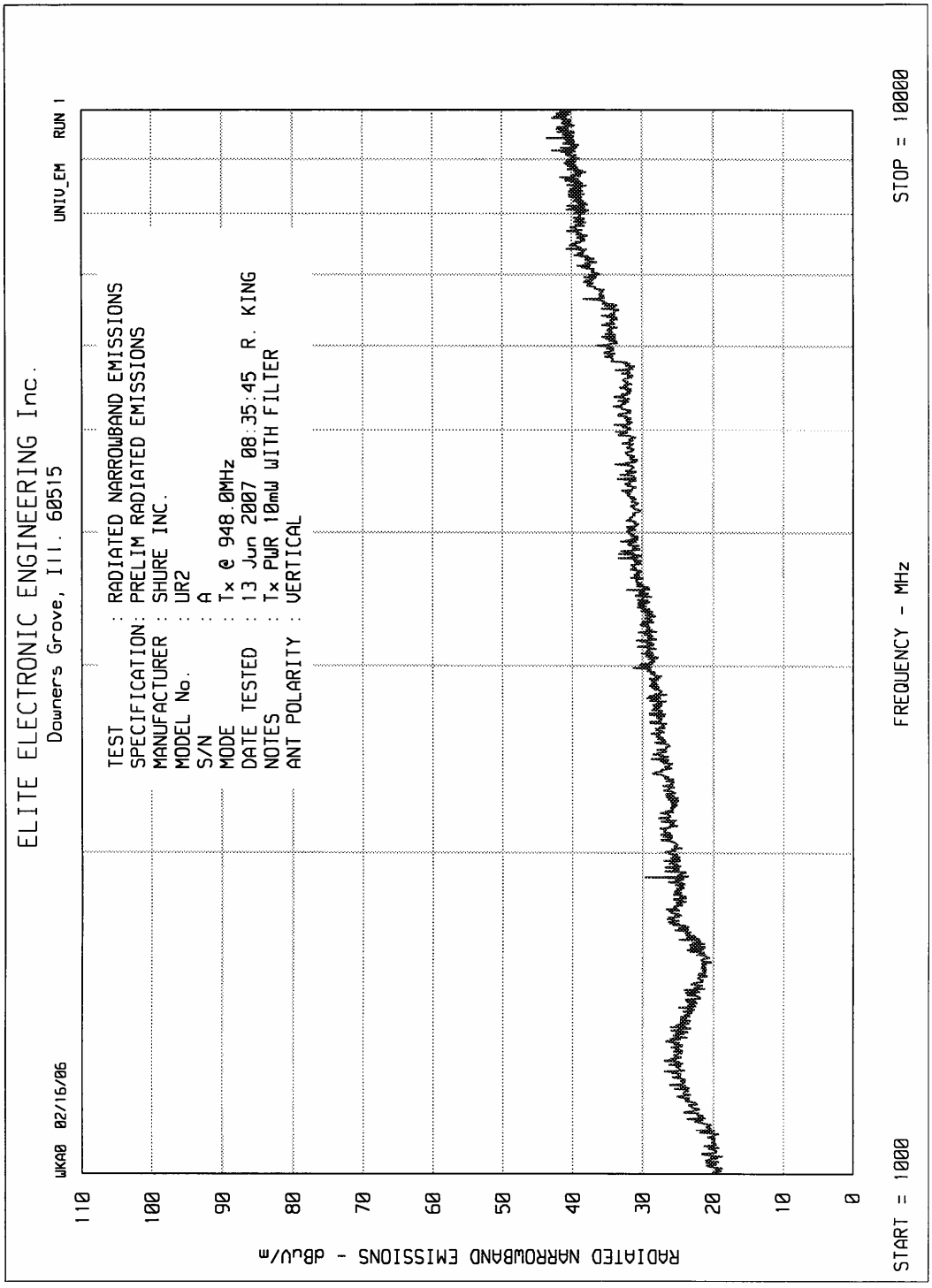
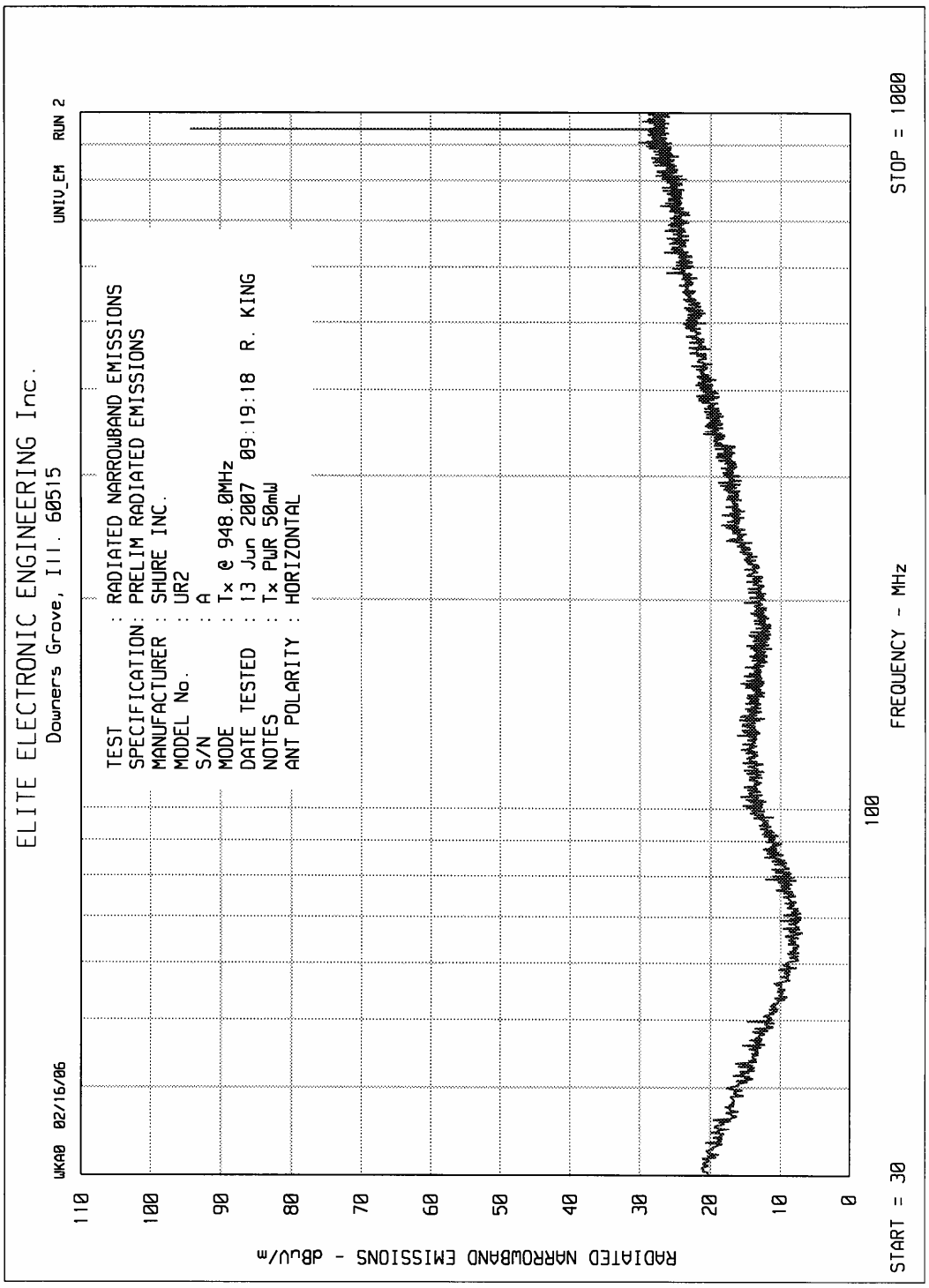
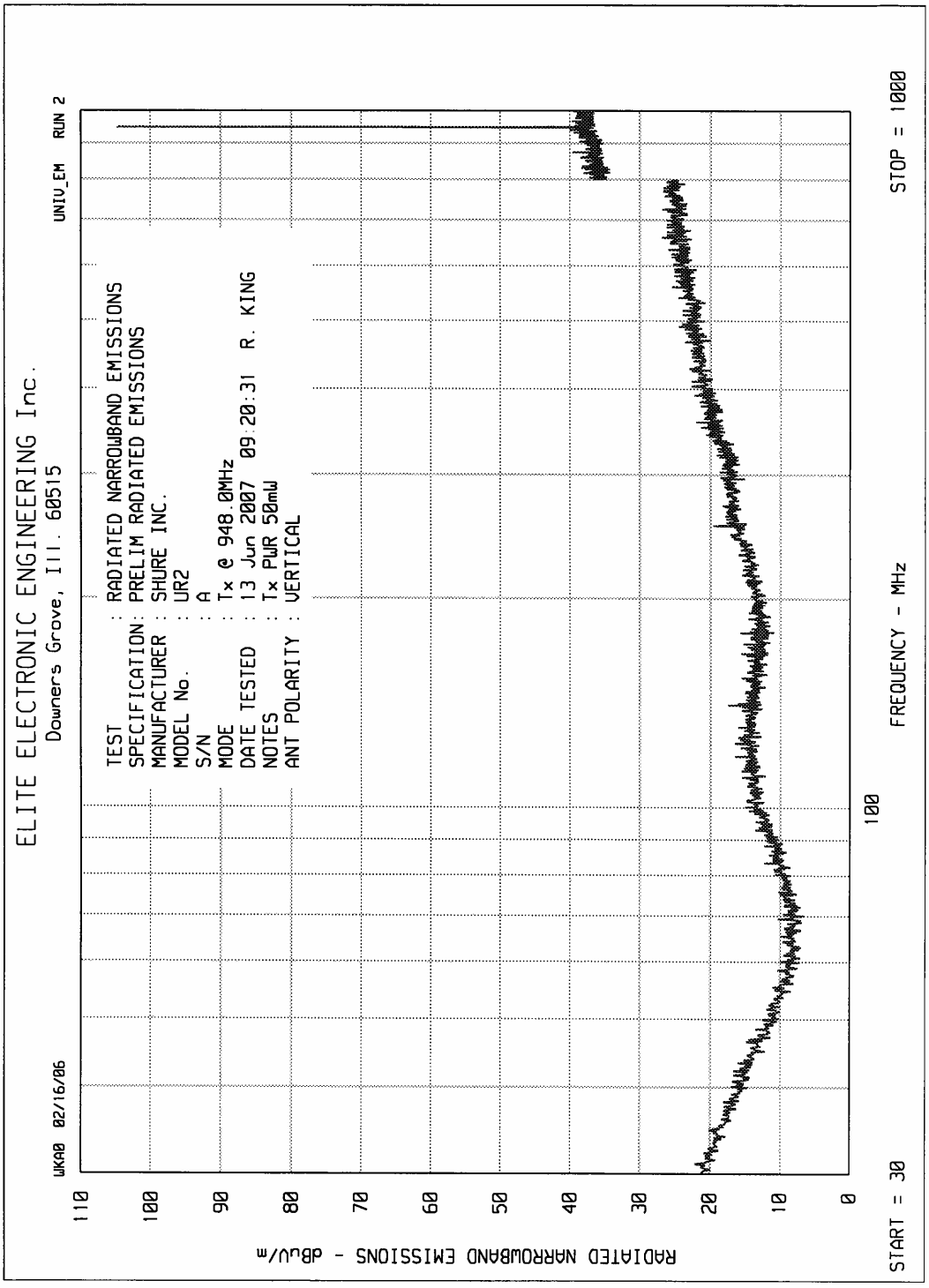

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 2
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: PRELIM RADIATED EMISSIONS
MANUFACTURER : SHURE INC.
MODEL No. : UR2
S/N : A
MODE : Tx @ 948.0MHz
DATE TESTED : 13 Jun 2007 09:23:47 R. KING
NOTES : Tx PWR 10mW
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
FREQUENCY - MHz
STOP = 1000

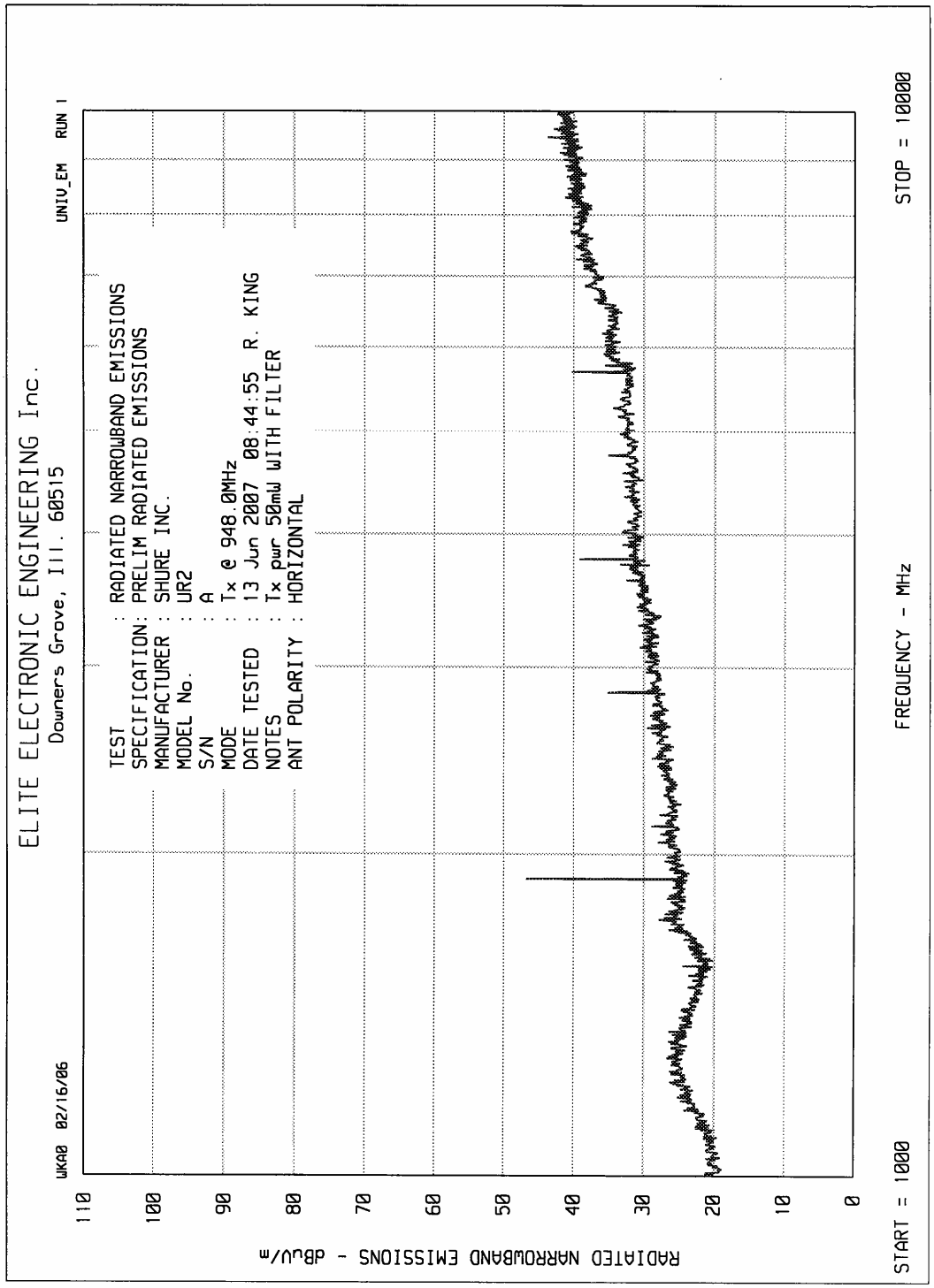

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 2
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: PRELIM RADIATED EMISSIONS
MANUFACTURER : SHURE INC.
MODEL No. : UR2
S/N : A
MODE : Tx @ 948.0MHz
DATE TESTED : 13 Jun 2007 09:22:27 R. KING
NOTES : Tx PWR 10mW
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
FREQUENCY - MHz
STOP = 1000

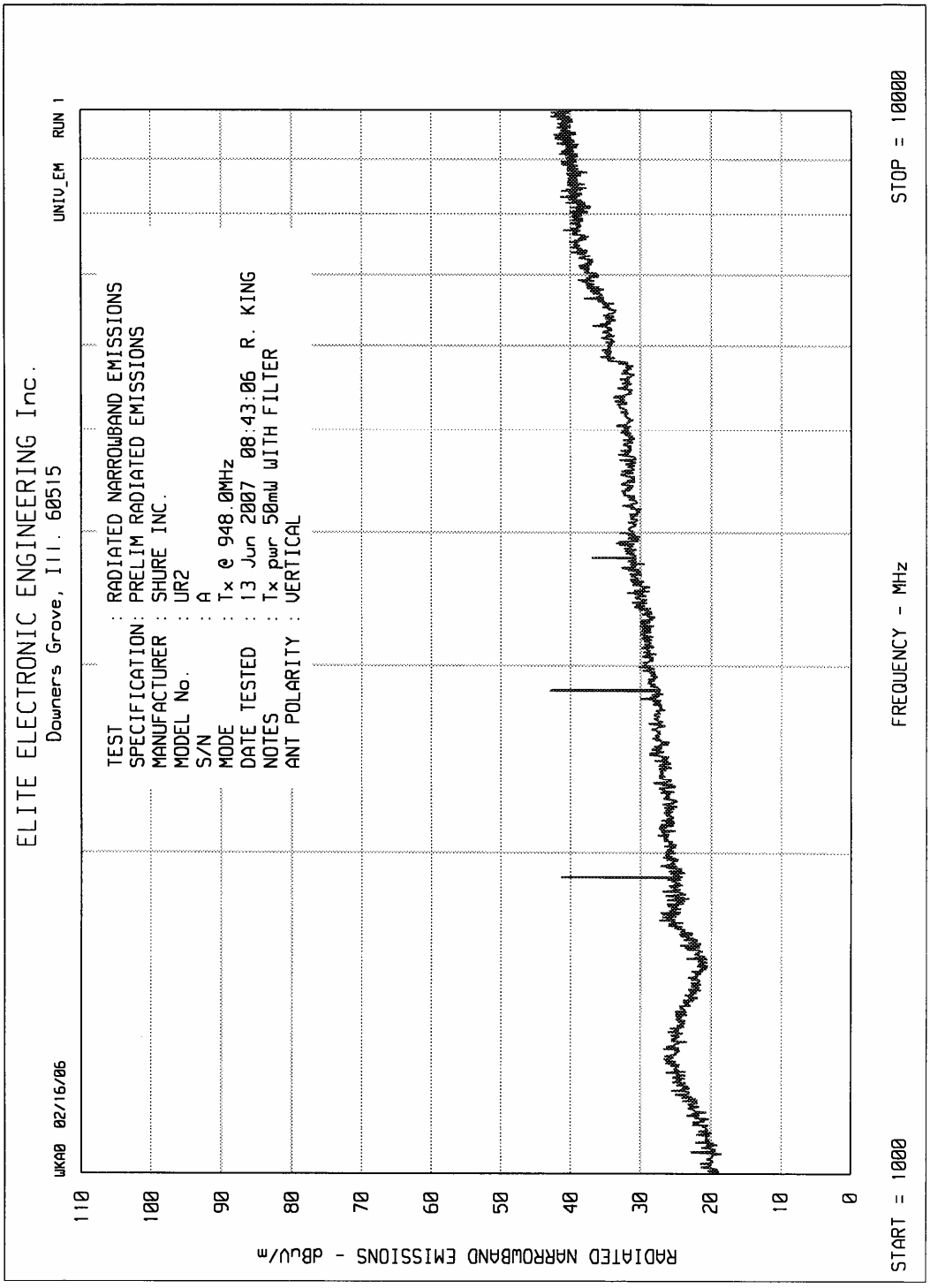

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: PRELIM RADIATED EMISSIONS
MANUFACTURER : SHURE INC.
MODEL No. : UR2
S/N : A
MODE : Tx @ 948.0MHz
DATE TESTED : 13 Jun 2007 08:21:08 R. KING
NOTES : Tx PWR 10mW WITH FILTER
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 10000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 1
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: PRELIM RADIATED EMISSIONS
MANUFACTURER : SHURE INC.
MODEL No. : UR2
S/N : A
MODE : Tx @ 948.0MHz
DATE TESTED : 13 Jun 2007 08:35:45 R. KING
NOTES : Tx PWR 10mW WITH FILTER
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 10000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 2
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: PRELIM RADIATED EMISSIONS
MANUFACTURER : SHURE INC.
MODEL No. : UR2
S/N : A
MODE : Tx @ 948.0MHz
DATE TESTED : 13 Jun 2007 09:19:18 R. KING
NOTES : Tx PWR 50mW
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
FREQUENCY - MHz
STOP = 1000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV_EM RUN 2
WKA0 02/16/06
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: PRELIM RADIATED EMISSIONS
MANUFACTURER : SHURE INC.
MODEL No. : UR2
S/N : A
MODE : Tx @ 948.0MHz
DATE TESTED : 13 Jun 2007 09:20:31 R. KING
NOTES : Tx PWR 50mW
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 30
100
FREQUENCY - MHz
STOP = 1000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA0 02/16/06
UNIV_EM RUN 1
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: PRELIM RADIATED EMISSIONS
MANUFACTURER : SHURE INC.
MODEL No. : UR2
S/N : A
MODE : Tx @ 948.0MHz
DATE TESTED : 13 Jun 2007 08:44:55 R. KING
NOTES : Tx pwr 50mW WITH FILTER
ANT POLARITY : HORIZONTAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 10000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
WKA0 02/16/06
UNIV_EM RUN 1
TEST : RADIATED NARROWBAND EMISSIONS
SPECIFICATION: PRELIM RADIATED EMISSIONS
MANUFACTURER : SHURE INC.
MODEL No. : UR2
S/N : A
MODE : Tx @ 948.0MHz
DATE TESTED : 13 Jun 2007 08:43:06 R. KING
NOTES : Tx pwr 50mW WITH FILTER
ANT POLARITY : VERTICAL
RADIATED NARROWBAND EMISSIONS - dBuV/m
110
100
90
80
70
60
50
40
30
20
10
0
START = 1000
FREQUENCY - MHz
STOP = 10000

Data Page

MANUFACTURER : Shure Inc.
MODEL NO. : UR2A 10 mW
SERIAL NO. : A
SPECIFICATION : FCC-74 Spurious Radiated Emissions
DATE : June 13, 2007
NOTES : Test Distance is 3 Meters

Freq. (MHz)	Ant Pol	Meter Reading (dBuV)	Amb.	Matched Sig Gen (dBm)	Antenna Gain (dB)	Cable Factor (dB)	ERP Total (dBm)	Min. Atten. (dB)	Atten. (dB)
1896.0	H	45.9		-60.3	5.2	3.8	-58.9	68.9	23.0
1896.0	V	48.0		-51.5	5.2	5.1	-51.4	61.4	23.0
2844.0	H	39.5	*	-57.3	5.3	5.1	-57.1	67.1	23.0
2844.0	V	45.6		-51.2	5.3	6.0	-51.9	61.9	23.0
3792.0	H	53.8		-42.1	6.9	6.0	-41.2	51.2	23.0
3792.0	V	41.3		-55.6	6.9	7.1	-55.8	65.8	23.0
4740.0	H	39.1	*	-60.5	8.1	7.1	-59.5	69.5	23.0
4740.0	V	40.1	*	-60.3	8.1	8.0	-60.2	70.2	23.0
5688.0	H	38.3	*	-57.6	7.5	8.0	-58.1	68.1	23.0
5688.0	V	36.9	*	-54.8	7.5	9.1	-56.4	66.4	23.0
6636.0	H	40.2	*	-51.6	8.0	9.1	-52.7	62.7	23.0
6636.0	V	42.0		-59.9	8.0	10.3	-62.1	72.1	23.0
7584.0	H	39.7	*	-54.2	7.6	10.3	-56.9	66.9	23.0
7584.0	V	39.2	*	-52.2	7.6	11.6	-56.2	66.2	23.0
8532.0	H	40.5	*	-55.2	8.8	11.6	-58.1	68.1	23.0
8532.0	V	40.8	*	-55.2	8.8	12.5	-58.9	68.9	23.0
9480.0	H	40.8	*	-60.8	9.2	12.5	-64.1	74.1	23.0
9480.0	V	40.2	*	-60.8	9.2	12.5	-64.1	74.1	23.0

Checked BY : Richard E. King

Richard E. King

Data Page

MANUFACTURER : Shure Inc.
MODEL NO. : UR2A 50 mW
SERIAL NO. : A
SPECIFICATION : FCC-74 Spurious Radiated Emissions
DATE : June 13, 2007
NOTES : Test Distance is 3 Meters

Freq. (MHz)	Ant Pol	Meter Reading (dBuV)	Ambient	Matched Sig Gen (dBm)	Antenna Gain (dB)	Cable Factor (dB)	ERP Total (dBm)	Atten. (dB)	Min. Atten. (dB)
1896.0	H	54.8		-48.5	5.2	3.8	-47.1	64.1	30.0
1896.0	V	50.8		-49.5	5.2	5.1	-49.4	66.4	30.0
2844.0	H	46.1		-51.3	5.3	5.1	-51.1	68.1	30.0
2844.0	V	47.0		-48.1	5.3	6.0	-48.8	65.8	30.0
3792.0	H	55.0		-40.9	6.9	6.0	-40.0	57.0	30.0
3792.0	V	42.9		-51.9	6.9	7.1	-52.1	69.1	30.0
4740.0	H	41.9		-45.6	8.1	7.1	-44.6	61.6	30.0
4740.0	V	41.6		-56.4	8.1	8.0	-56.3	73.3	30.0
5688.0	H	38.6	*	-45.5	7.5	8.0	-46.0	63.0	30.0
5688.0	V	40.6		-38.5	7.5	9.1	-40.1	57.1	30.0
6636.0	H	41.6	*	-44.8	8.0	9.1	-45.9	62.9	30.0
6636.0	V	40.5	*	-41.7	8.0	10.3	-43.9	60.9	30.0
7584.0	H	40.0	*	-54.2	7.6	10.3	-56.9	73.9	30.0
7584.0	V	40.8	*	-59.5	7.6	11.6	-63.5	80.5	30.0
8532.0	H	40.5	*	-43.7	8.8	11.6	-46.6	63.6	30.0
8532.0	V	40.0	*	-47.0	8.8	12.5	-50.7	67.7	30.0
9480.0	H	40.3	*	-42.8	9.2	12.5	-46.1	63.1	30.0
9480.0	V	40.1	*	-45.6	9.2	12.5	-48.9	65.9	30.0

Checked BY : Richard E. King

Richard E. King