11.0 FIELD STRENGTH OF SPURIOUS EMISSION MEASUREMENTS PART 2.1053

Radiated measurements were performed at a 1 or 3 meter test distance automatically scanning the frequency range from 200 MHz to 10000 MHz, depending upon the fundamental frequency.

For the UHF Wireless System, the highest fundamental frequency is 782 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 774-782 MHz bands for UHF Wireless System 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+10Log10 (mean output power in watts) dB.

11.0 FIELD STRENGTH OF SPURIOUS EMISSION MEASUREMENTS (CON'T)
PART 2.1053

To determine the **LIMIT** for Spurious Emissions the following method was used:

Mean output power in watts:

Manufacturer's rated wattage **0.012 (See Paragraph 6.0, page 8)**

Free Space Formula

Convert to 3 meter test distance using the Free Space Formula

$$\frac{\sqrt{49.2 * \text{rated wattage}}}{\text{Distance}} = \frac{(49.2*0.012)^{.5}}{3} = 0.256124970610477 \text{ volts/meter}$$

0.256124970610477v/m = 256124.97 uV/m

20*Log(256124.97) = 108.17dBuV/m

So, the Fundamental at three meters equals **108.17**

The emissions must be reduced by:

43 + 10*LOG10(0.012) = 23.79 dB

Therefore, the **LIMIT** at three meters equals:

108.17 dBuV/m extrapolated level for 0.012 watts
-23.79 dB required reduction below the unmodulated fundamental
84.38 dBuV/M maximum spurious emissions allowed

RADIATED DATA TAKEN FOR FIELD STRENGTH

SPURIOUS EMISSION MEASUREMENTS

PART 2.1053

SUMMARY DATA SHEET OF **RADIATED** EMISSIONS <**1000 MHz**

TEST DATE:---------- December 6, 1999
MANUFACTURER:---------- Shure
MODEL NO:---------- UT2C
S/N:---------- NA
CONFIGURATION:---------- **774.4 MHz**
RATED POWER:---------- 0.012

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

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

TEST EQUIPMENT: Spectrum Analyzer ------- HP 8566B
Quasi Peak Adapter ----- HP 85650A

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

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	CABLE LOSSES dB	ANTENNA FACTOR dBuV	TOTAL dBuV	LIMIT dB	MARGIN dB
796.00	32.90	7.04	21.19	61.13	84.46	23.33

SUMMARY DATA SHEET OF **RADIATED** EMISSIONS <**1000 MHz**

TEST DATE:---------- December 6, 1999
MANUFACTURER:---------- Shure
MODEL NO:---------- UT2C
S/N:---------- NA
CONFIGURATION:---------- **774.4 MHz**
RATED POWER:---------- 0.012

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

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

TEST EQUIPMENT: Spectrum Analyzer ------- HP 8566B
Quasi Peak Adapter ----- HP 85650A

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

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	CABLE LOSSES dB	ANTENNA FACTOR dBuV	TOTAL dBuV	LIMIT dB	MARGIN dB
796.00	31.30	7.04	21.19	59.53	84.46	24.93

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

TEST DATE:---------- December 6, 1999
MANUFACTURER:--------- Shure
MODEL NO:---------- UT2C
S/N:---------- NA
CONFIGURATION:--------- **774.4 MHz**
RATED POWER:---------- 0.0120

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

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

TEST EQUIPMENT: Spectrum Analyzer ------- HP 8566B
Quasi Peak Adapter ----- HP 85650A

TYPE OF TEST: RADIATED EMISSIONS USING **VERTICAL** POLARIZATION

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	ANTENNA PLUS CABLE	PRE-AMP GAIN dB	TOTAL dBuV	ANTENNA DISTANCE IN METERS	LIMIT dBuV	MARGIN dB
1549.03	39.76	29.30	0.00	69.06	3	84.46	15.40
2844.01	38.52	33.28	0.00	71.80	1	94.00	22.20
3099.90	42.70	34.30	0.00	77.00	1	94.00	17.00
3357.32	34.75	35.85	0.00	70.60	1	94.00	23.40
5418.31	31.52	41.28	0.00	72.80	1	94.00	21.20

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

TEST DATE:---------- December 6, 1999
MANUFACTURER:--------- Shure
MODEL NO:---------- UT2C
S/N:---------- NA
CONFIGURATION:--------- **774.4 MHz**
RATED POWER:---------- 0.0120

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

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

TEST EQUIPMENT: Spectrum Analyzer ------- HP 8566B
Quasi Peak Adapter ----- HP 85650A

TYPE OF TEST: RADIATED EMISSIONS USING **HORIZONTAL** POLARIZATION

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	ANTENNA PLUS CABLE	PRE-AMP GAIN dB	TOTAL dBuV	ANTENNA DISTANCE IN METERS	LIMIT dBuV	MARGIN dB
1550.11	38.66	29.30	0.00	67.96	3	84.46	16.50
2067.05	37.10	29.70	0.00	66.80	1	94.00	27.20
2326.08	38.41	30.89	0.00	69.30	1	94.00	24.70
2844.01	41.72	33.28	0.00	75.00	1	94.00	19.00
3099.90	45.20	34.30	0.00	79.50	1	94.00	14.50

SUMMARY DATA SHEET OF **RADIATED** EMISSIONS **<1000 MHz**

TEST DATE:---------- December 6, 1999
MANUFACTURER:---------- Shure
MODEL NO:---------- UT2C
S/N:---------- NA
CONFIGURATION:---------- **781.775 MHz**
RATED POWER:---------- 0.012

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

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

TEST EQUIPMENT: Spectrum Analyzer ------- HP 8566B
Quasi Peak Adapter ----- HP 85650A

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

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	CABLE LOSSES dB	ANTENNA FACTOR dBuV	TOTAL dBuV	LIMIT dB	MARGIN dB
803.00	33.10	6.79	21.25	61.14	84.46	23.32

SUMMARY DATA SHEET OF **RADIATED** EMISSIONS **<1000 MHz**

TEST DATE:---------- December 6, 1999
MANUFACTURER:---------- Shure
MODEL NO:---------- UT2C
S/N:---------- NA
CONFIGURATION:---------- **781.775 MHz**
RATED POWER:---------- 0.012

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

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

TEST EQUIPMENT: Spectrum Analyzer ------- HP 8566B
Quasi Peak Adapter ----- HP 85650A

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

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	CABLE LOSSES dB	ANTENNA FACTOR dBuV	TOTAL dBuV	LIMIT dB	MARGIN dB
803.50	34.50	6.79	21.25	62.54	84.46	21.92

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

TEST DATE:---------- December 6, 1999
MANUFACTURER:--------- Shure
MODEL NO:---------- UT2C
S/N:---------- NA
CONFIGURATION:--------- **774.4 MHz**
RATED POWER:---------- 0.0120

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

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

TEST EQUIPMENT: Spectrum Analyzer ------- HP 8566B
Quasi Peak Adapter ----- HP 85650A

TYPE OF TEST: RADIATED EMISSIONS USING **VERTICAL** POLARIZATION

THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

FREQ IN MHz.	METER READING dBuV	ANTENNA PLUS CABLE	PRE-AMP GAIN dB	TOTAL dBuV	ANTENNA DISTANCE IN METERS	LIMIT dBuV	MARGIN dB
1549.03	39.76	29.30	0.00	69.06	3	84.46	15.40
2844.01	38.52	33.28	0.00	71.80	1	94.00	22.20
3099.90	42.70	34.30	0.00	77.00	1	94.00	17.00
3357.32	34.75	35.85	0.00	70.60	1	94.00	23.40
5418.31	31.52	41.28	0.00	72.80	1	94.00	21.20

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

TEST DATE:---------- December 6, 1999
MANUFACTURER:--------- Shure
MODEL NO:---------- UT2C
S/N:---------- NA
CONFIGURATION:--------- **774.4 MHz**
RATED POWER:---------- 0.0120

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

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

TEST EQUIPMENT: Spectrum Analyzer ------- HP 8566B
Quasi Peak Adapter ----- HP 85650A

TYPE OF TEST: RADIATED EMISSIONS USING **HORIZONTAL** POLARIZATION

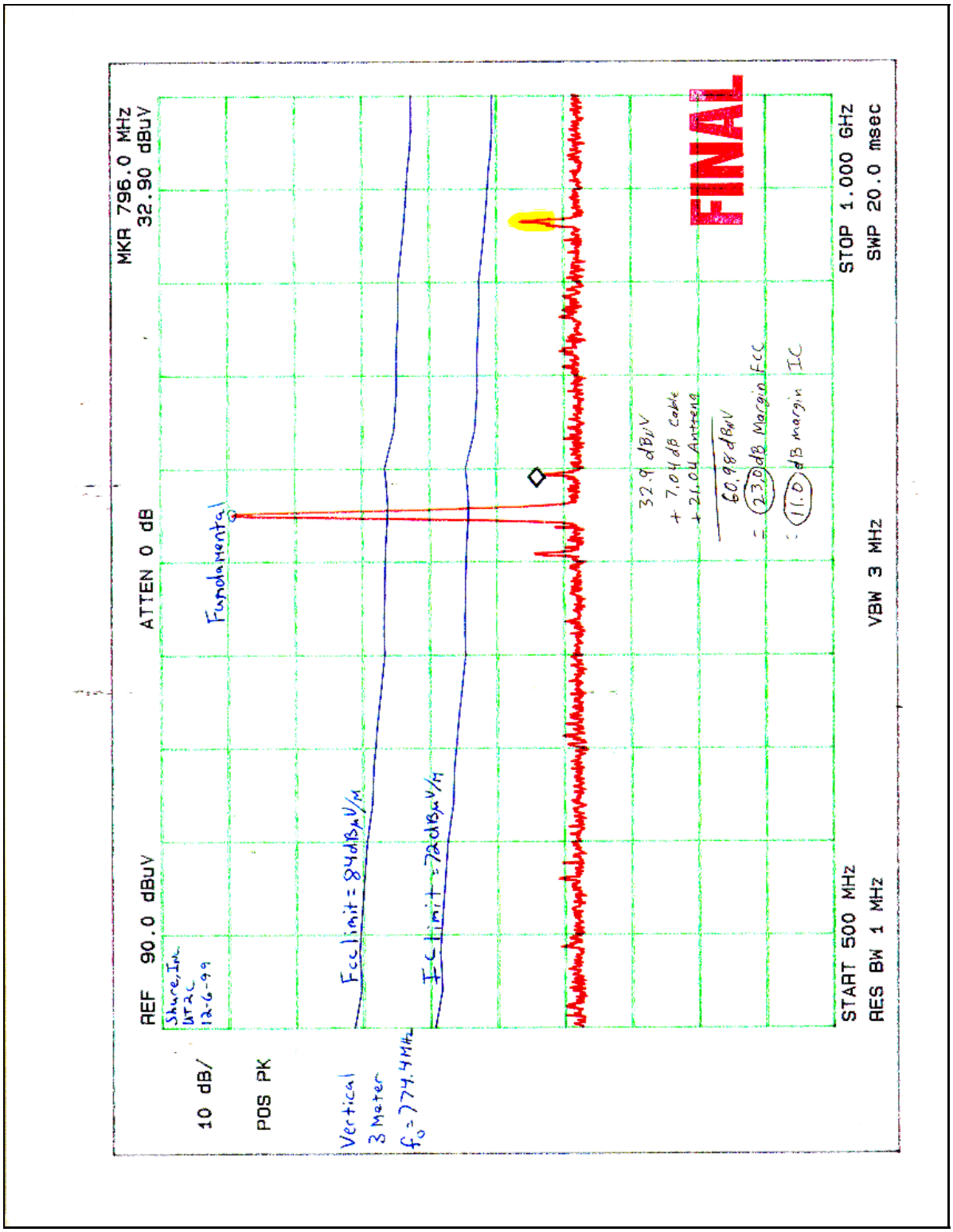
THE FOLLOWING ARE SIGNIFICANT RADIATED LEVELS FOUND:

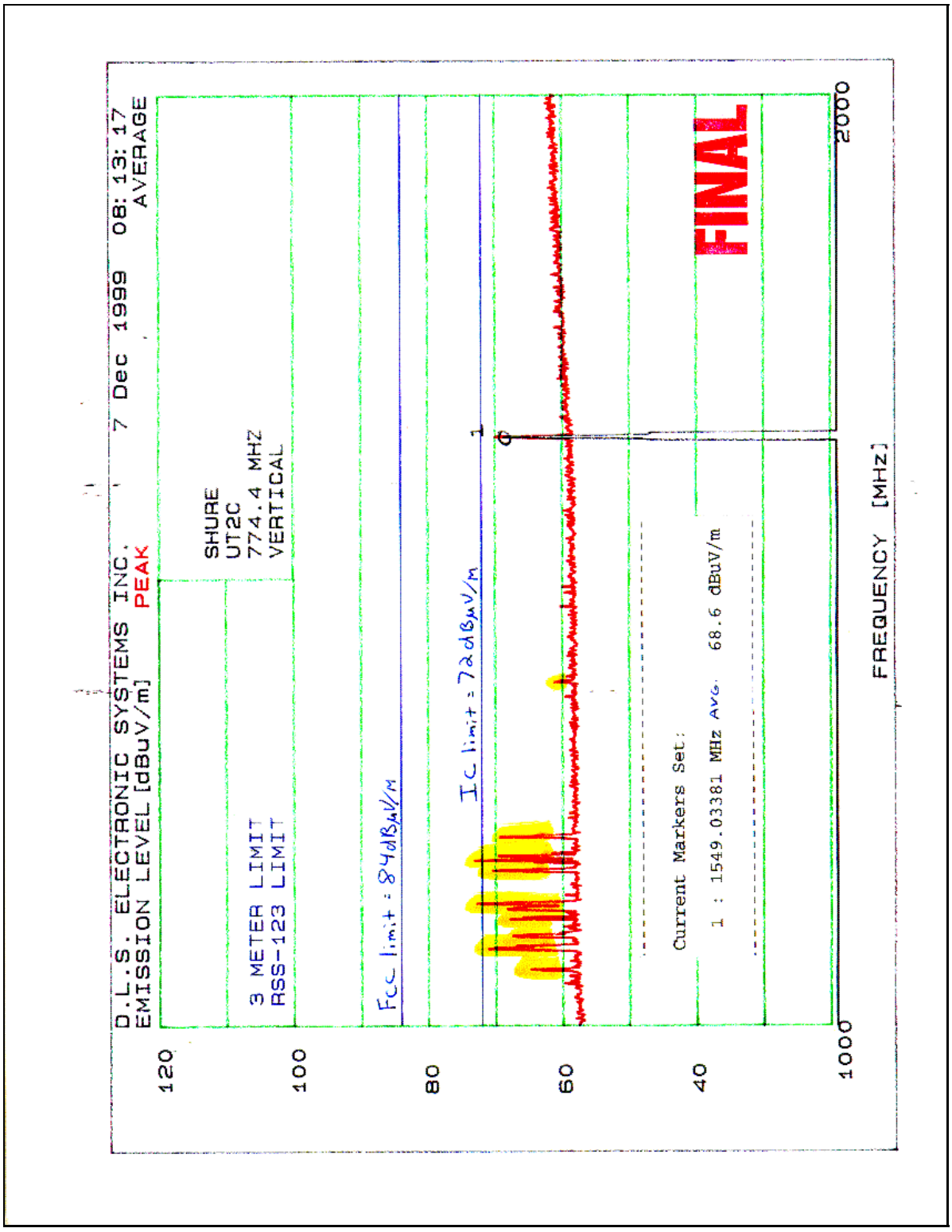
FREQ IN MHz.	METER READING dBuV	ANTENNA PLUS CABLE	PRE-AMP GAIN dB	TOTAL dBuV	ANTENNA DISTANCE IN METERS	LIMIT dBuV	MARGIN dB
1550.11	38.66	29.30	0.00	67.96	3	84.46	16.50
2067.05	37.10	29.70	0.00	66.80	1	94.00	27.20
2326.08	38.41	30.89	0.00	69.30	1	94.00	24.70
2844.01	41.72	33.28	0.00	75.00	1	94.00	19.00
3099.90	45.20	34.30	0.00	79.50	1	94.00	14.50

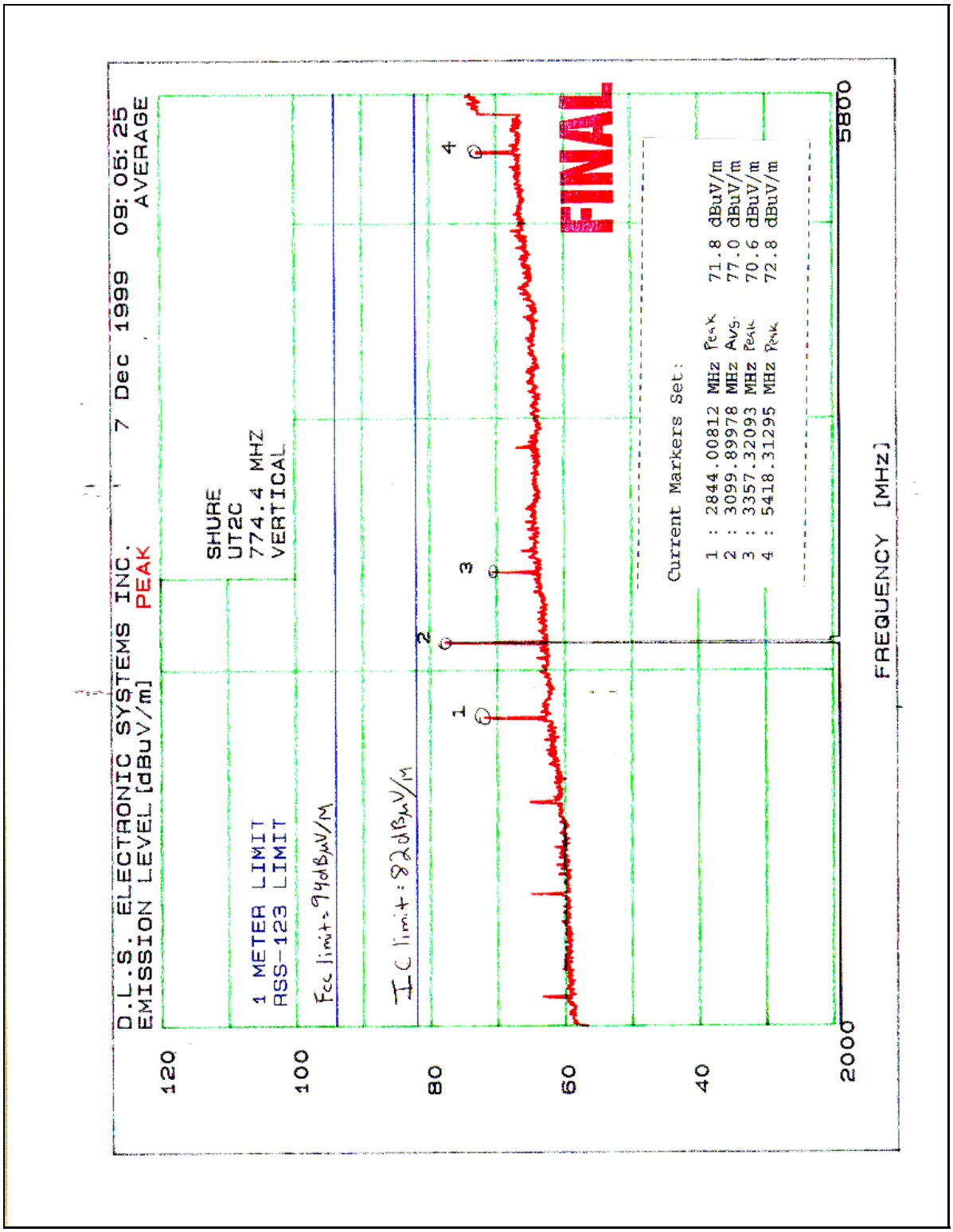
RADIATED GRAPHS TAKEN FOR FIELD STRENGTH

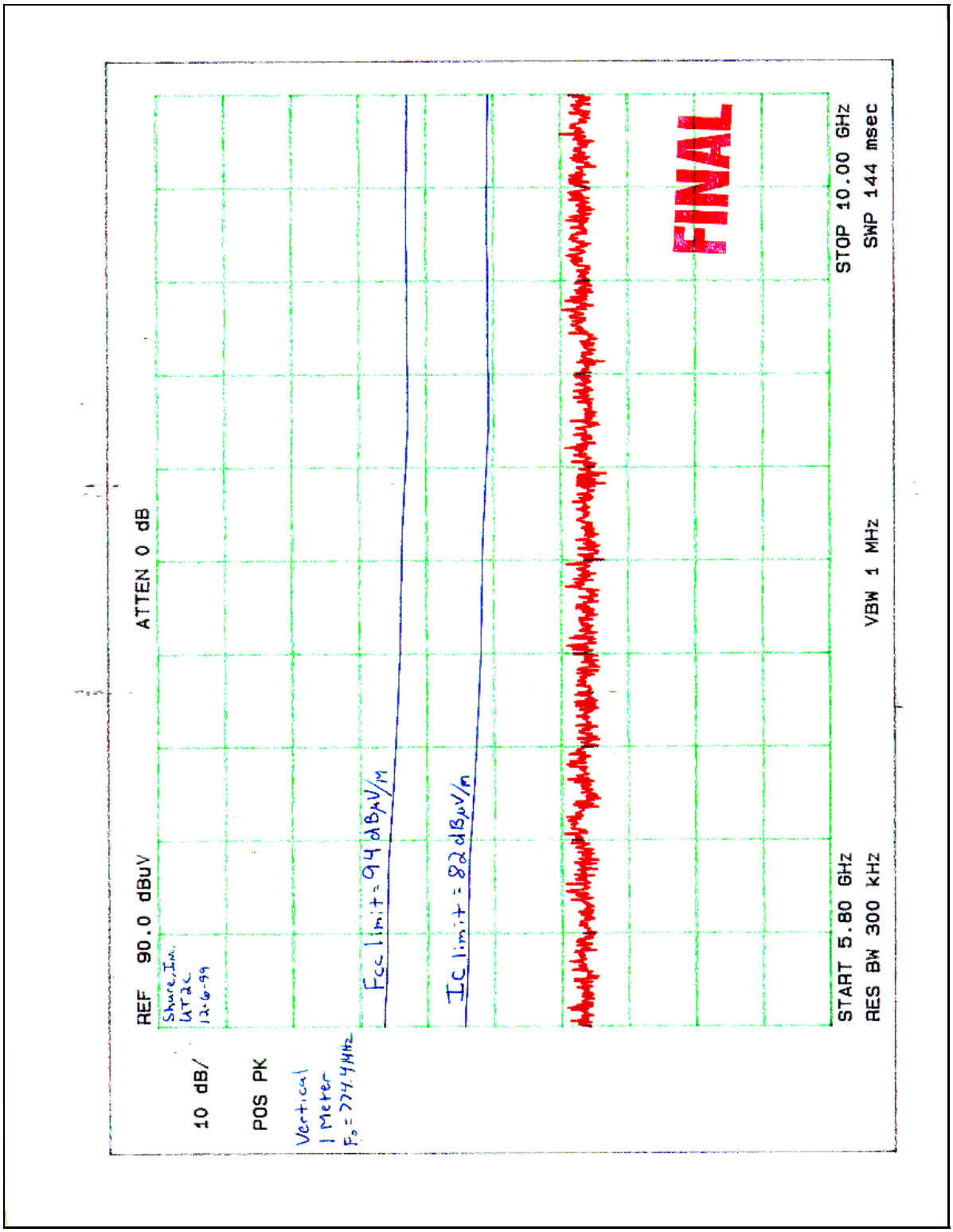
SPURIOUS EMISSION MEASUREMENTS

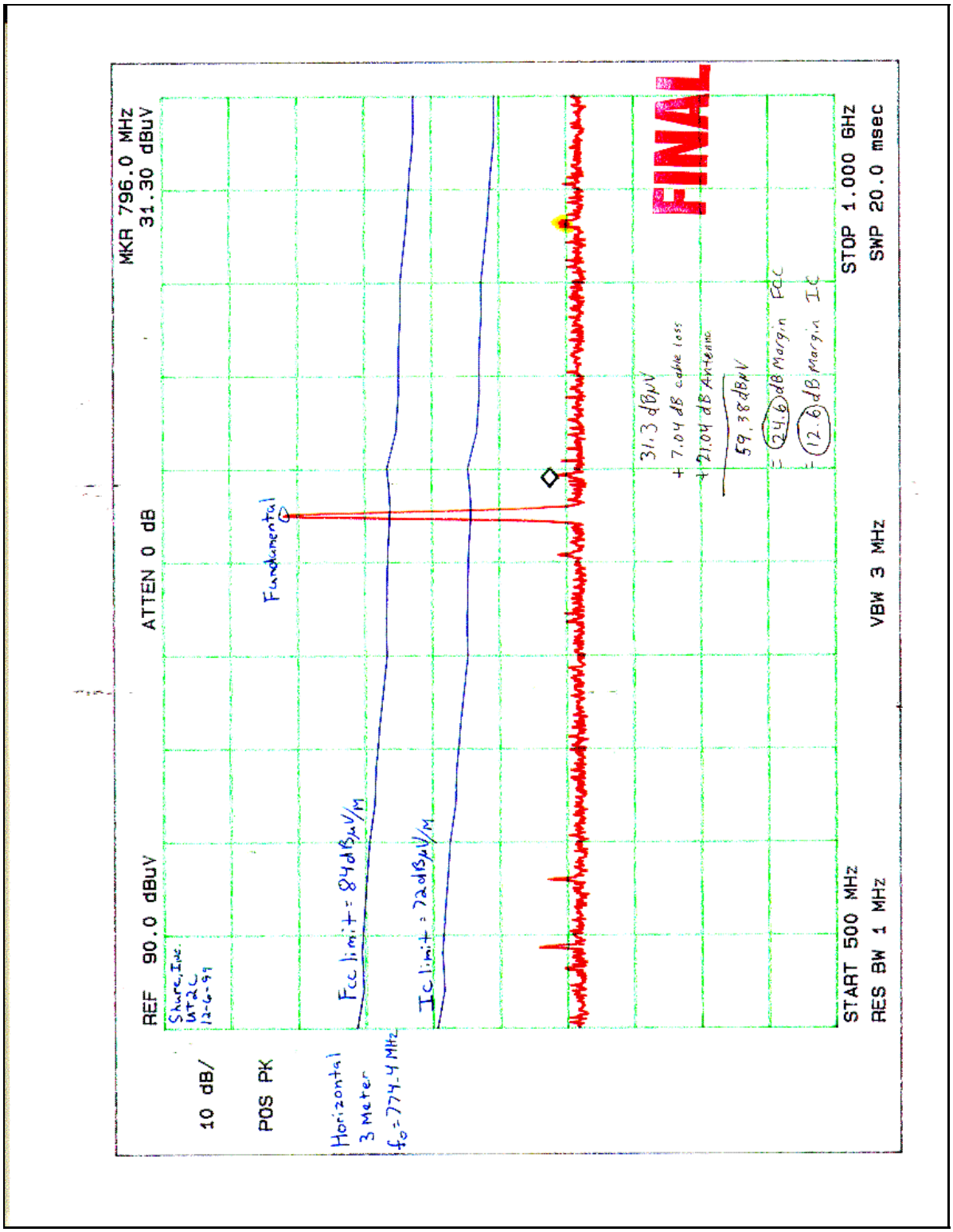
PART 2.1053

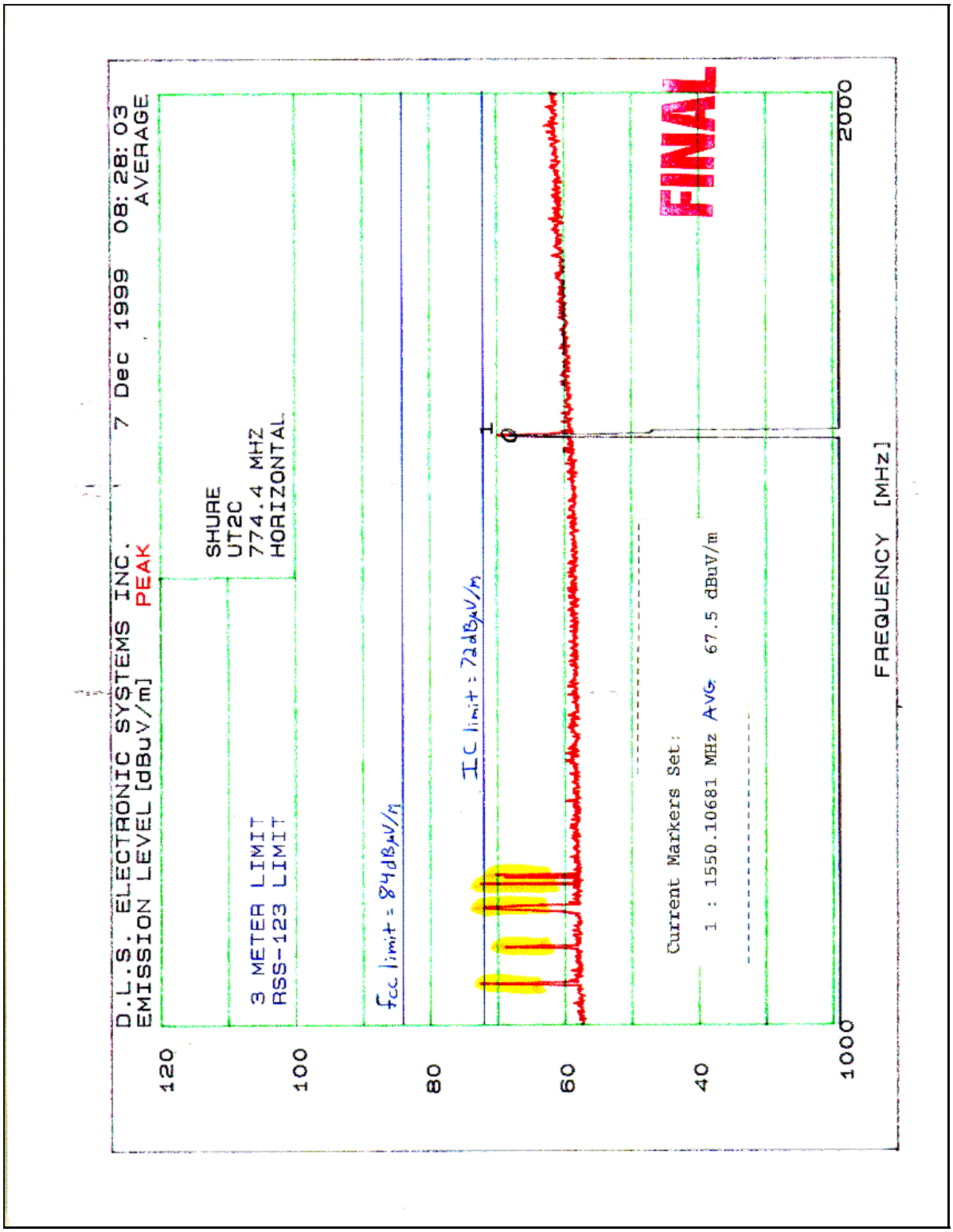

MKR 796.0 MHz
32.90 dBuV
REF 90.0 dBuV
ATTEN 0 dB
10 dB/
POS PK
Shure, Inc.
WRC
12-6-99
Fundamental
Fc limit = 84dBuV/M
Fc limit = 72dBuV/M
Vertical
3 Meter
fo = 774.4 MHz
32.9 dBuV
+ 7.04 dB Cable
+ 21.04 Antenna
60.98 dBuV
- 23.0 dB Margin FCC
- 11.0 dB margin IC
FINAL
START 500 MHz
RES BW 1 MHz
VBW 3 MHz
STOP 1.000 GHz
SWP 20.0 msec

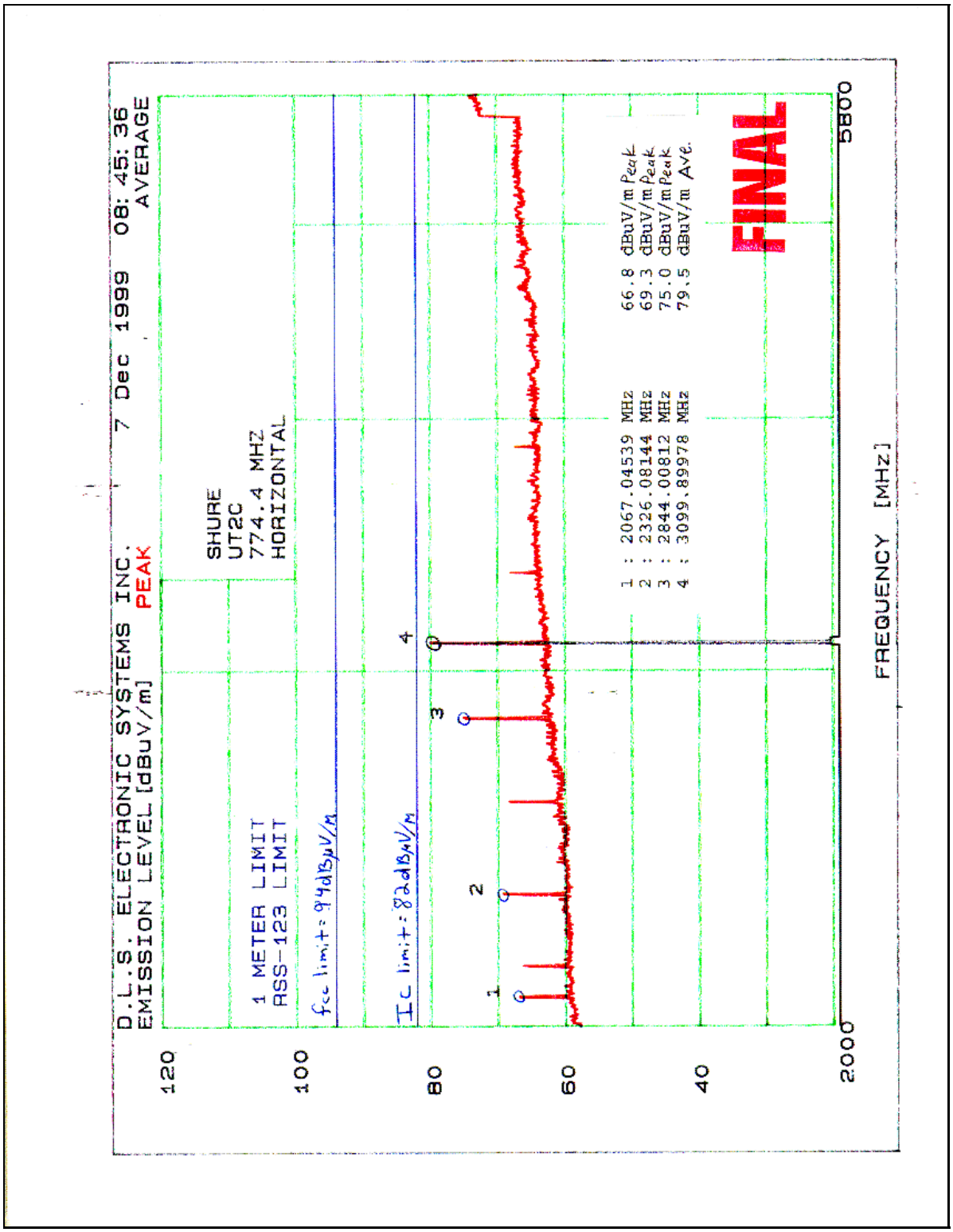

D.L.S. ELECTRONIC SYSTEMS INC.
EMISSION LEVEL [dBuV/m]
7 Dec 1999 08: 13: 17
PEAK
AVERAGE
SHURE
UT2C
774.4 MHZ
VERTICAL
3 METER LIMIT
RSS-123 LIMIT
Fcc limit = 84dBuV/m
Ic limit = 74dBuV/m
FINAL
Current Markers Set:
1 : 1549.03381 MHz Avg. 68.6 dBuV/m
120
100
80
60
40
1000
2000
FREQUENCY [MHz]

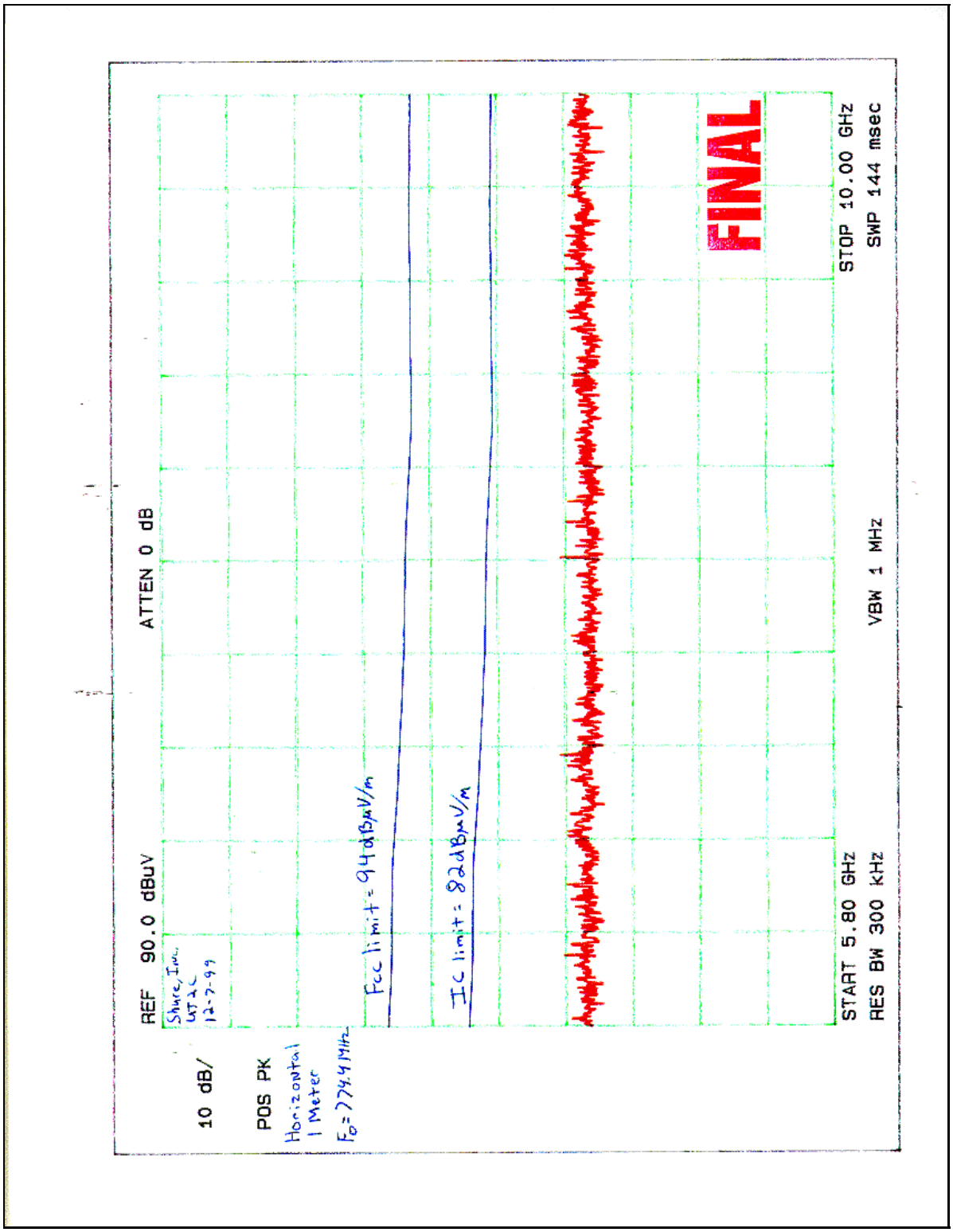

D.L.S. ELECTRONIC SYSTEMS INC.
EMISSION LEVEL [dBuV/m]
7 Dec 1999 09: 05: 25
PEAK
AVERAGE
SHURE
UT2C
774.4 MHZ
VERTICAL
1 METER LIMIT
RSS-123 LIMIT
Fcc limit: 94dBuV/M
IC limit: 82dBuV/M
FINAL
Current Markers Set:
1 : 2844.00812 MHz Peak 71.8 dBuV/m
2 : 3099.89978 MHz Avg 77.0 dBuV/m
3 : 3357.32093 MHz Peak 70.6 dBuV/m
4 : 5418.31295 MHz Peak 72.8 dBuV/m
120
100
80
60
40
2000
5800
FREQUENCY [MHz]

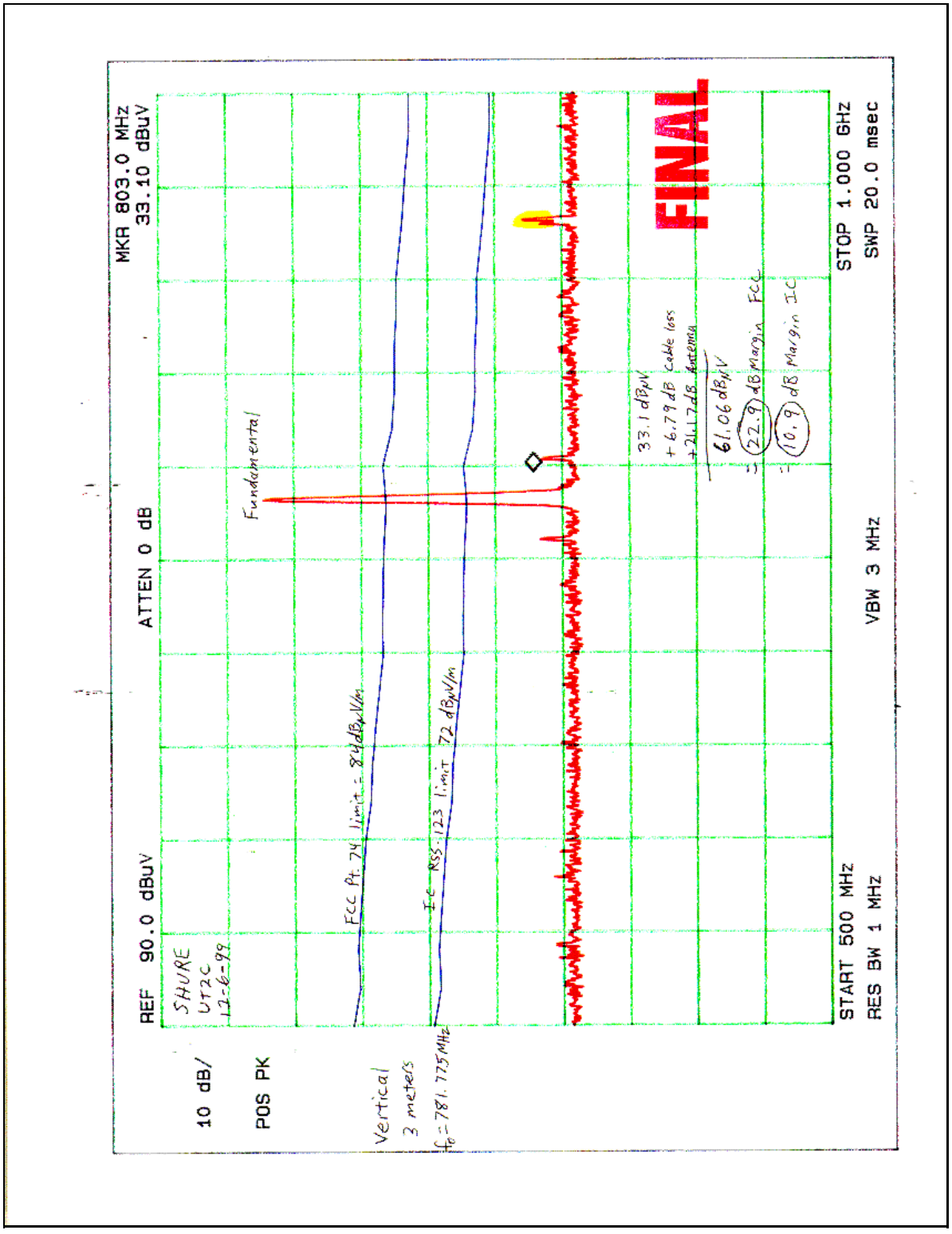

REF 90.0 dBuV
ATTEN 0 dB
10 dB/
POS PK
Share, Inc.
UTAC
12-6-99
Vertical
1 Meter
Fs = 774.4MHz
Fcc limit = 94 dBuV/m
Ic limit = 82 dBuV/m
FINAL
START 5.80 GHz
RES BW 300 kHz
VBW 1 MHz
STOP 10.00 GHz
SWP 144 msec

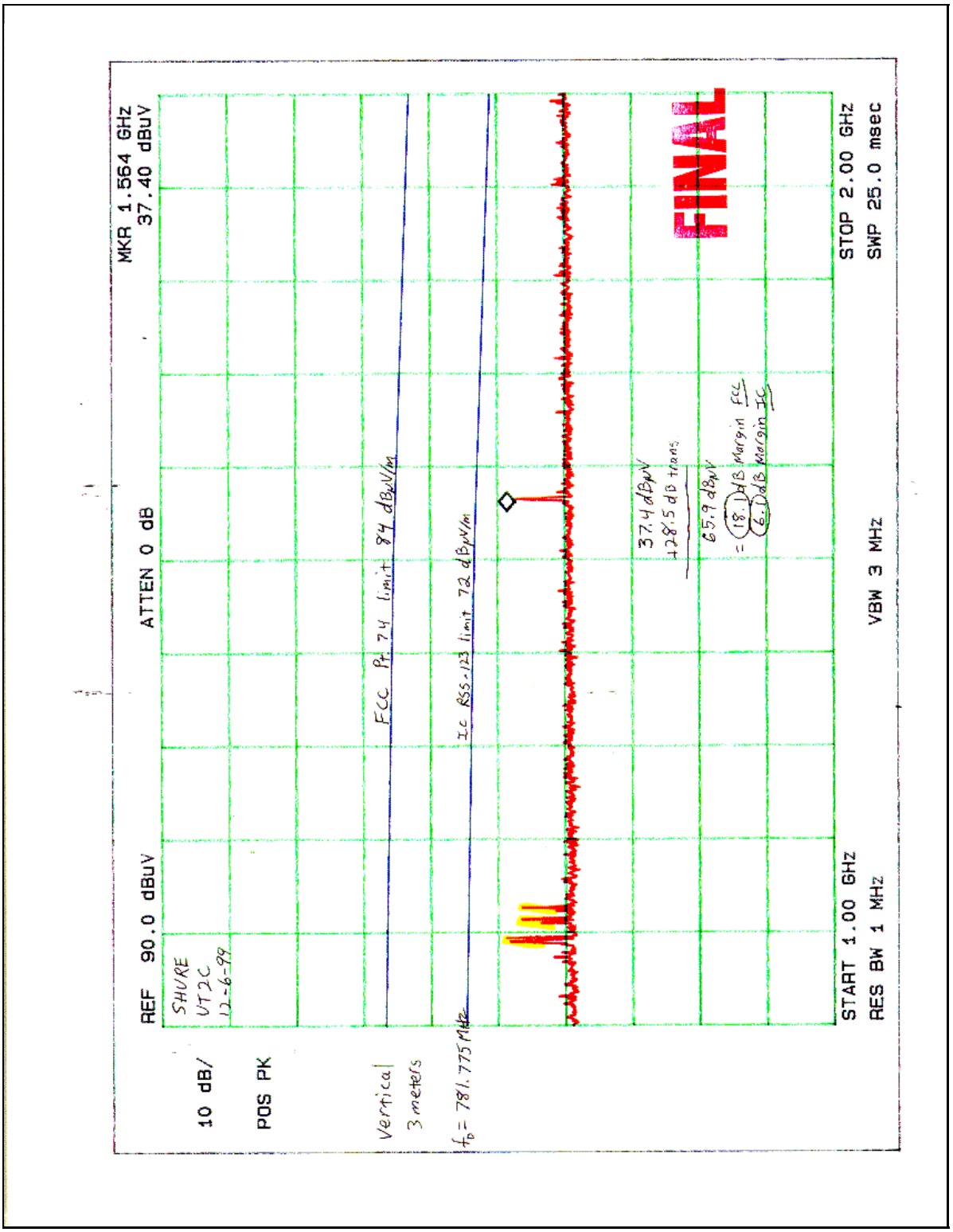

MKR 796.0 MHz
31.30 dBuV
REF 90.0 dBuV
ATTEN 0 dB
10 dB/
POS PK
Shure, Inc.
WTAC
12-6-99
Fundamental
Fcc limit = 84dBµV/M
Ic limit = 74dBµV/M
Horizontal
3 Meter
fo = 774.4 MHz
FINAL
31.3 dBµV
+ 7.04 dB cable loss
+ 21.04 dB Antenna
59.38dBµV
- (24.6) dB Margin FCC
- (12.6) dB Margin IC
START 500 MHz
RES BW 1 MHz
VBW 3 MHz
STOP 1.000 GHz
SWP 20.0 msec

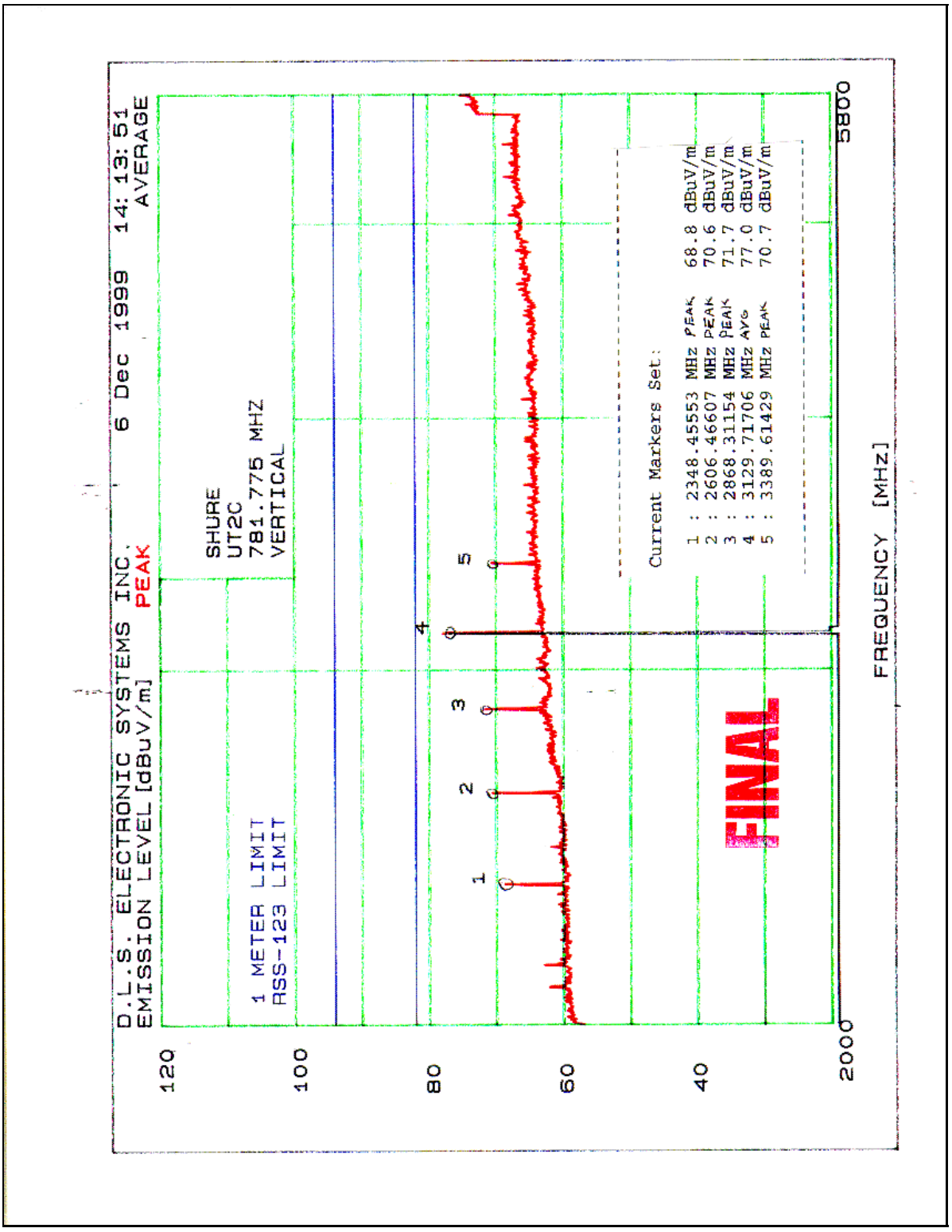

D.L.S. ELECTRONIC SYSTEMS INC.
EMISSION LEVEL [dBuV/m]
7 Dec 1999 08:28:03
PEAK
AVERAGE
SHURE
UT2C
774.4 MHZ
HORIZONTAL
3 METER LIMIT
RSS-123 LIMIT
Fcc limit = 84dBuV/m
IC limit = 74dBuV/m
FINAL
Current Markers Set:
1 : 1550.10681 MHz Avg 67.5 dBuV/m
120
100
80
60
40
1000
2000
FREQUENCY [MHz]

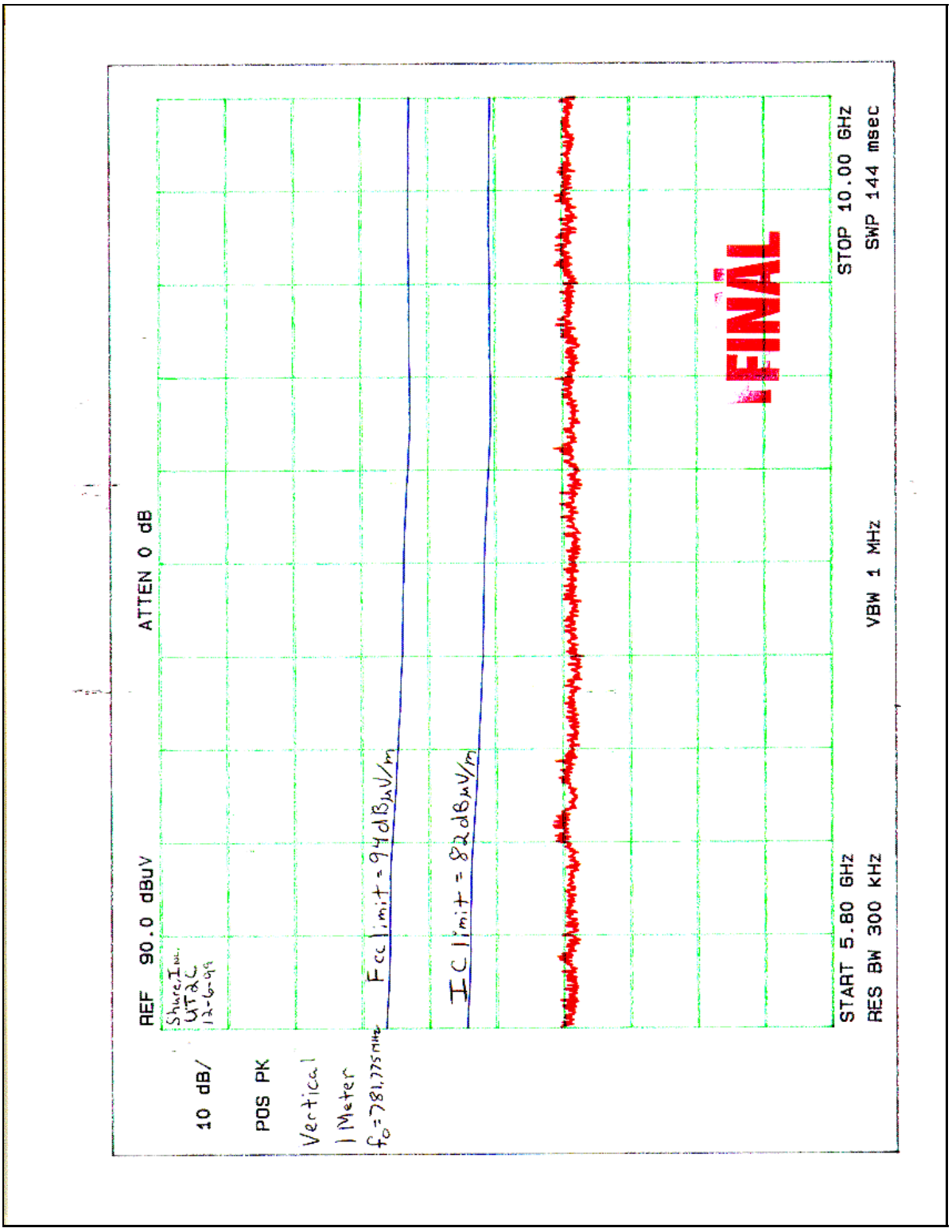

D.L.S. ELECTRONIC SYSTEMS INC.
EMISSION LEVEL [dBuV/m]
7 Dec 1999 08: 45: 36
PEAK
AVERAGE
SHURE
UT2C
774.4 MHZ
HORIZONTAL
1 METER LIMIT
RSS-123 LIMIT
fcc limit: 94dBuV/m
Ic limit: 82dBuV/m
1 : 2067.04539 MHz 66.8 dBuV/m Peak
2 : 2326.08144 MHz 69.3 dBuV/m Peak
3 : 2844.00812 MHz 75.0 dBuV/m Peak
4 : 3099.89978 MHz 79.5 dBuV/m Ave.
FINAL
120
100
80
60
40
2000
5800
FREQUENCY [MHz]

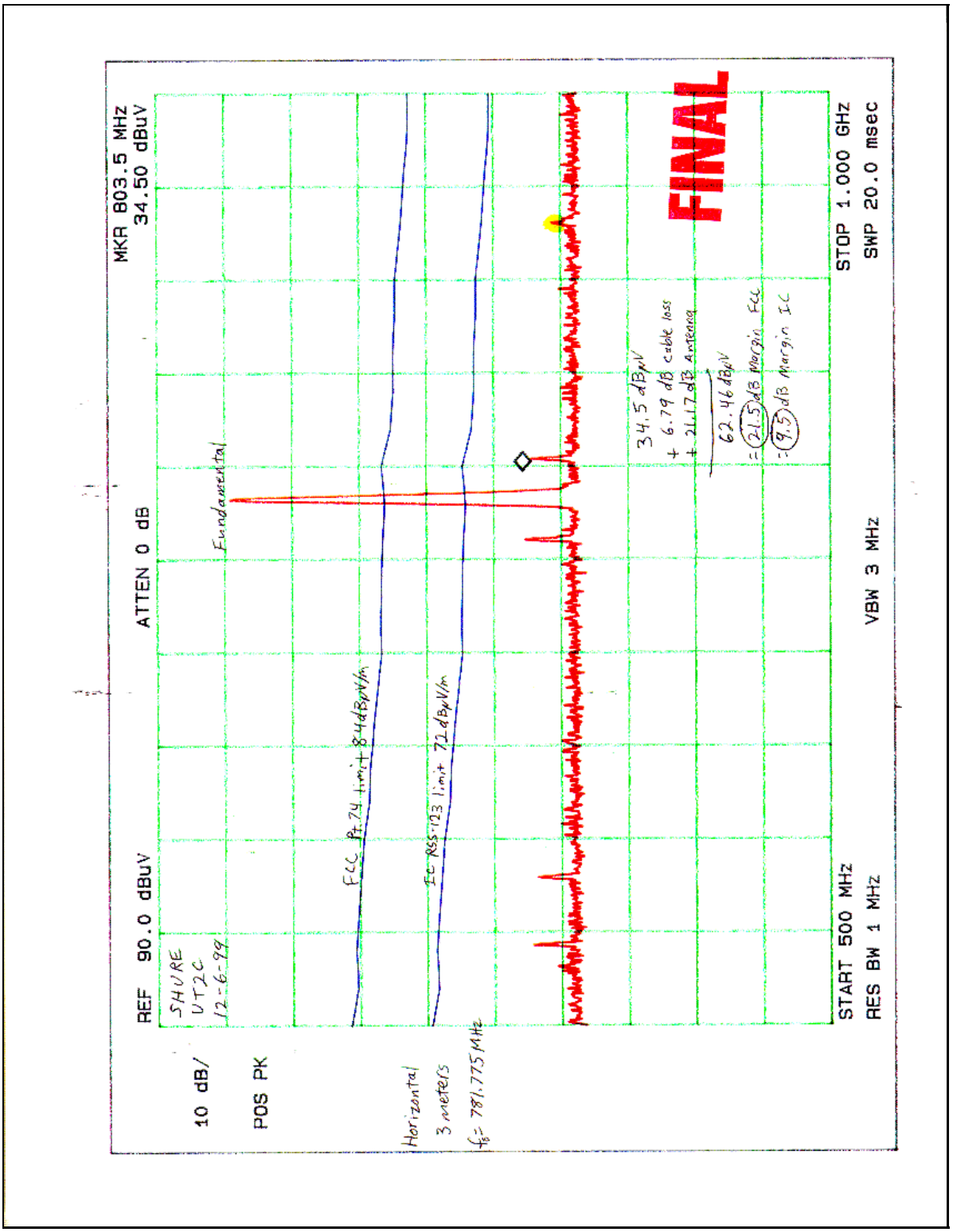

REF 90.0 dBuV
ATTEN 0 dB
10 dB/
POS PK
Shure, Inc.
WTAC
12-7-99
Horizontal
1 Meter
Fo= 774.4 MHz
Fcc limit = 94 dBuV/m
IC limit = 82 dBuV/m
FINAL
START 5.80 GHz
RES BW 300 kHz
VBW 1 MHz
STOP 10.00 GHz
SWP 144 msec

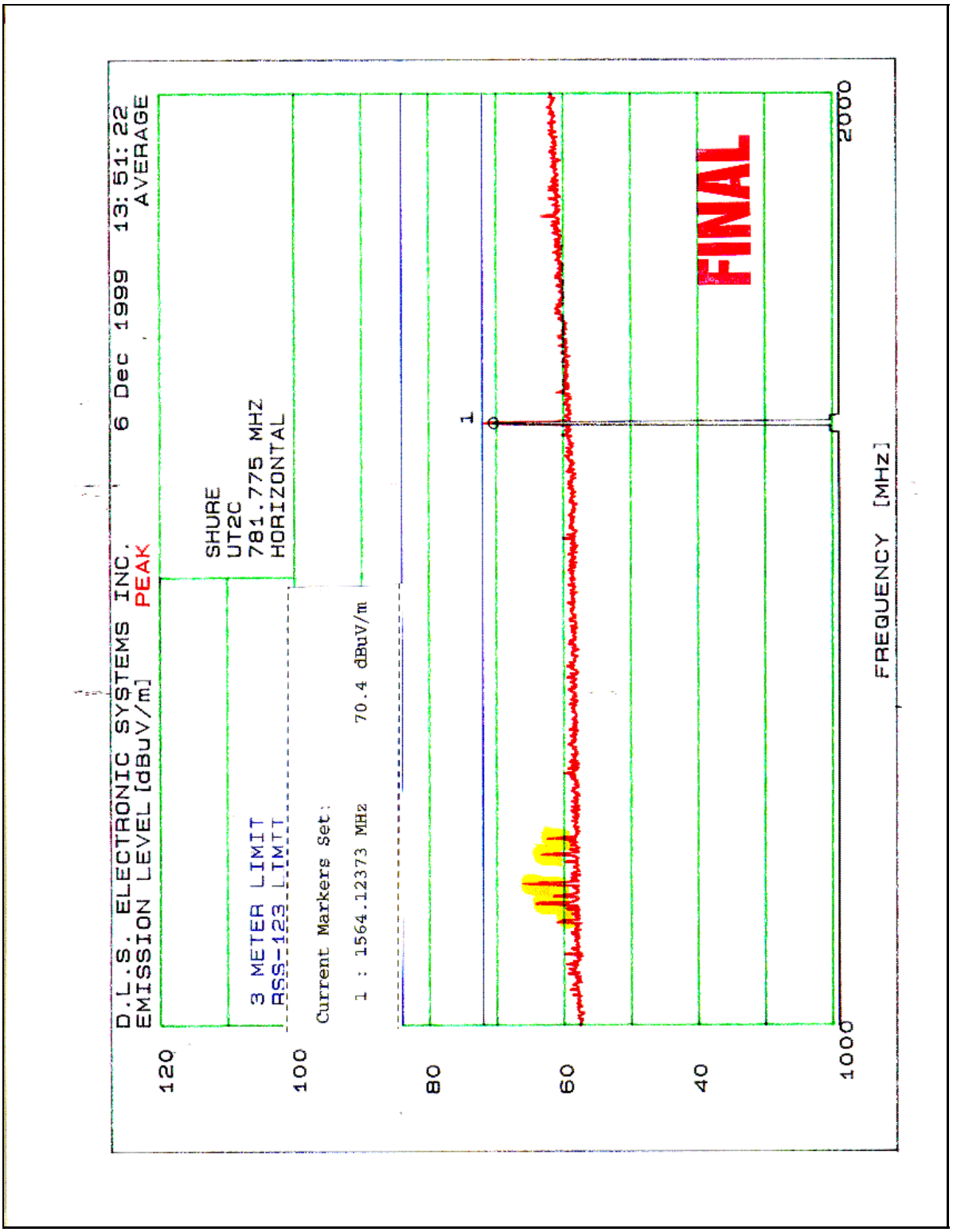

MKR 803.0 MHz
33.10 dBuV
REF 90.0 dBuV
ATTEN 0 dB
10 dB/
POS PK
SHURE
UT2C
12-6-99
Fundamental
FCC Pt. 74 limit = 84dBuV/m
Fc RSS-123 limit 72 dBuV/m
Vertical
3 meters
Fo = 781.775MHz
33.1 dBuV
+ 6.79 dB Cable loss
+ 21.17 dB Antenna
61.06 dBuV
= (22.9) dB Margin FCC
= (10.9) dB Margin IC
FINAL
START 500 MHz
RES BW 1 MHz
VBW 3 MHz
STOP 1.000 GHz
SWP 20.0 msec

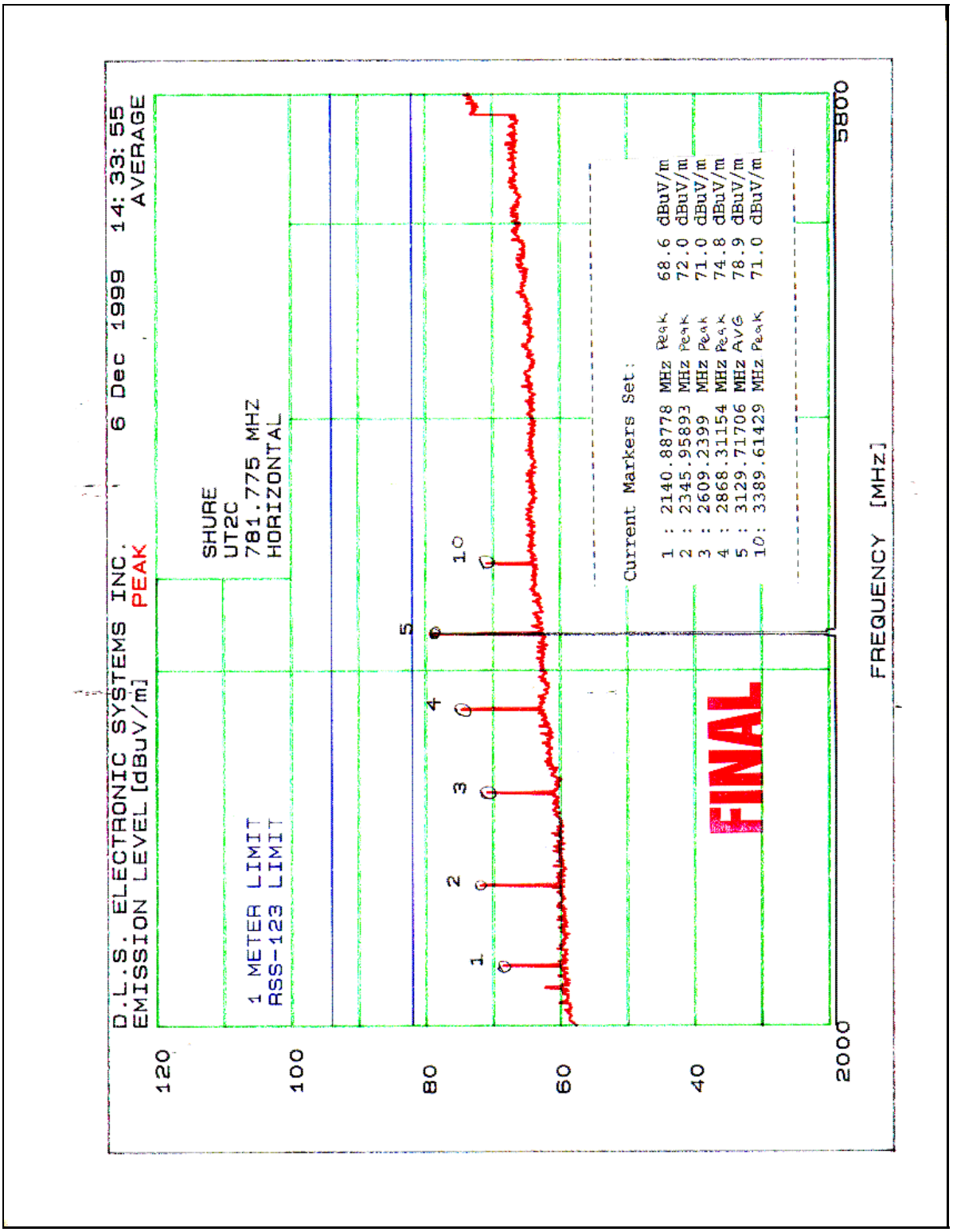

REF 90.0 dBuV
ATTEN 0 dB
MKR 1.564 GHz
37.40 dBuV
10 dB/
POS PK
SHURE
UT2C
12-6-99
Vertical
3 meters
f_o = 781.775 MHz
FCC Pt 74 limit 84 dBuV/m
Ic RSS-123 limit 72 dBuV/m
FINAL
37.4 dBuV
+28.5 dB trans
65.9 dBuV
= (18.1 dB margin FCC)
(6.1 dB margin IC)
START 1.00 GHz
RES BW 1 MHz
VBW 3 MHz
STOP 2.00 GHz
SWP 25.0 msec

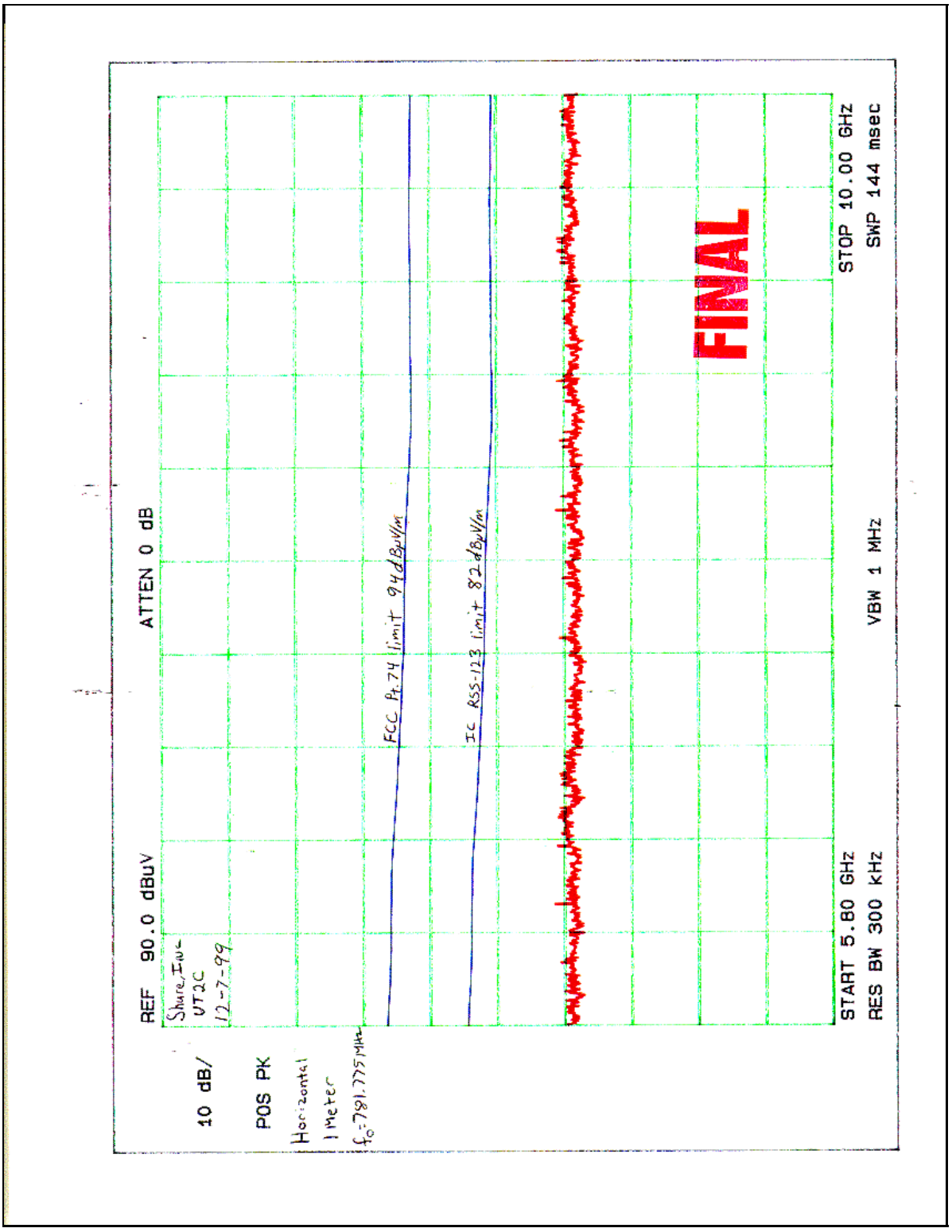

D.L.S. ELECTRONIC SYSTEMS INC.
EMISSION LEVEL [dBuV/m]
6 Dec 1999 14:13:51
PEAK
AVERAGE
SHURE
UT2C
781.775 MHZ
VERTICAL
1 METER LIMIT
RSS-123 LIMIT
Current Markers Set:
1 : 2348.45553 MHz PEAK 68.8 dBuV/m
2 : 2606.46607 MHz PEAK 70.6 dBuV/m
3 : 2868.31154 MHz PEAK 71.7 dBuV/m
4 : 3129.71706 MHz AVG 77.0 dBuV/m
5 : 3389.61429 MHz PEAK 70.7 dBuV/m
FINAL
120
100
80
60
40
2000
5800
FREQUENCY [MHz]


REF 90.0 dBuV
ATTEN 0 dB
10 dB/
POS PK
Vertical
1 Meter
Shure, Inc.
UTAC
12-6-99
FCC Limit = 94 dBuV/m
FCC Limit = 82 dBuV/m
FINAL
START 5.80 GHz
RES BW 300 kHz
VBW 1 MHz
STOP 10.00 GHz
SWP 144 msec


MKR 803.5 MHz
34.50 dBuV
REF 90.0 dBuV
ATTEN 0 dB
10 dB/
POS PK
SHURE
UT2C
12-6-99
Fundamental
FCC Part 15 Limit 84 dBuV/m
FCC RSS-123 Limit 72 dBuV/m
Horizontal
3 meters
fc= 781.775 MHz
FINAL
34.5 dBuV
+ 6.79 dB cable loss
+ 21.17 dB Antenna
62.46 dBuV
=(21.5) dB Margin FCC
=(9.5) dB Margin IC
START 500 MHz
RES BW 1 MHz
VBW 3 MHz
STOP 1.000 GHz
SWP 20.0 msec


D.L.S. ELECTRONIC SYSTEMS INC.
EMISSION LEVEL [dBuV/m]
PEAK
6 Dec 1999 13:51:22
AVERAGE
SHURE
UT2C
781.775 MHZ
HORIZONTAL
3 METER LIMIT
RSS-123 LIMIT
Current Markers Set:
1 : 1564.12373 MHz 70.4 dBuV/m
FINAL
FREQUENCY [MHz]
120
100
80
60
40
1000
2000


D.L.S. ELECTRONIC SYSTEMS INC.
EMISSION LEVEL [dBuV/m]
6 Dec 1999 14:33:55
PEAK
AVERAGE
SHURE
UT2C
781.775 MHZ
HORIZONTAL
1 METER LIMIT
RSS-123 LIMIT
Current Markers Set:
1 : 2140.88778 MHz Peak 68.6 dBuV/m
2 : 2345.95893 MHz Peak 72.0 dBuV/m
3 : 2609.2399 MHz Peak 71.0 dBuV/m
4 : 2868.31154 MHz Peak 74.8 dBuV/m
5 : 3129.71706 MHz AVG 78.9 dBuV/m
10: 3389.61429 MHz Peak 71.0 dBuV/m
FINAL
120
100
80
60
40
2000
5800
FREQUENCY [MHz]


REF 90.0 dBuV
ATTEN 0 dB
10 dB/
POS PK
Share, Inc
VT2C
12-7-99
Horizontal
1 Meter
fo: 7991.775 MHz
FCC Pt.74 limit 94dBuV/m
IC RSS-123 limit 82dBuV/m
FINAL
START 5.80 GHz
RES BW 300 kHz
VBW 1 MHz
STOP 10.00 GHz
SWP 144 msec

12.0 FREQUENCY STABILITY - PART 2.1055a **(Temperature)**

The frequency stability was measured from -30° to +50° 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 UHF Wireless System oscillator circuitry to stabilize. The following information was taken:

FREQUENCY STABILITY FOR TEMPERATURE VARIATION IN MHz:

-30°	781.79854
-20°	781.795
-10°	781.79778
0°	781.79272
+10°	781.78404
+20°	781.77656
+30°	781.76676
+40°	781.75902
+50°	781.74996

Worst Case Variance from Ambient:

27080 Hz

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

Frequency Tolerance: = **0.005%**

Ambient Frequency: = **781.77146**

781.77146 * 0.005% = **39088.57 Hz**

This is well within the specified limits.

GRAPHS TAKEN FOR FREQUENCY

STABILITY WHEN VARYING THE TEMPERATURE

PART 2.1055A

NOTE:

Charts are available upon request.

13.0 FREQUENCY STABILITY - PART 2.1055d **(Voltage)**

The frequency stability of UHF Wireless System 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%	0
100%	0
115%	0

This test was not run because the EUT is a handheld device.

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 **774400750 Hz**
Frequency #2 **774400000 Hz**
Frequency #3 **774399250 Hz**
Frequency #4 **781775500 Hz**
Frequency #5 **781775000 Hz**
Frequency #6 **781774500 Hz**

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

Frequency Tolerance: 0.005%

Limit: 39088.57 Hz

This is well within the specified limits.

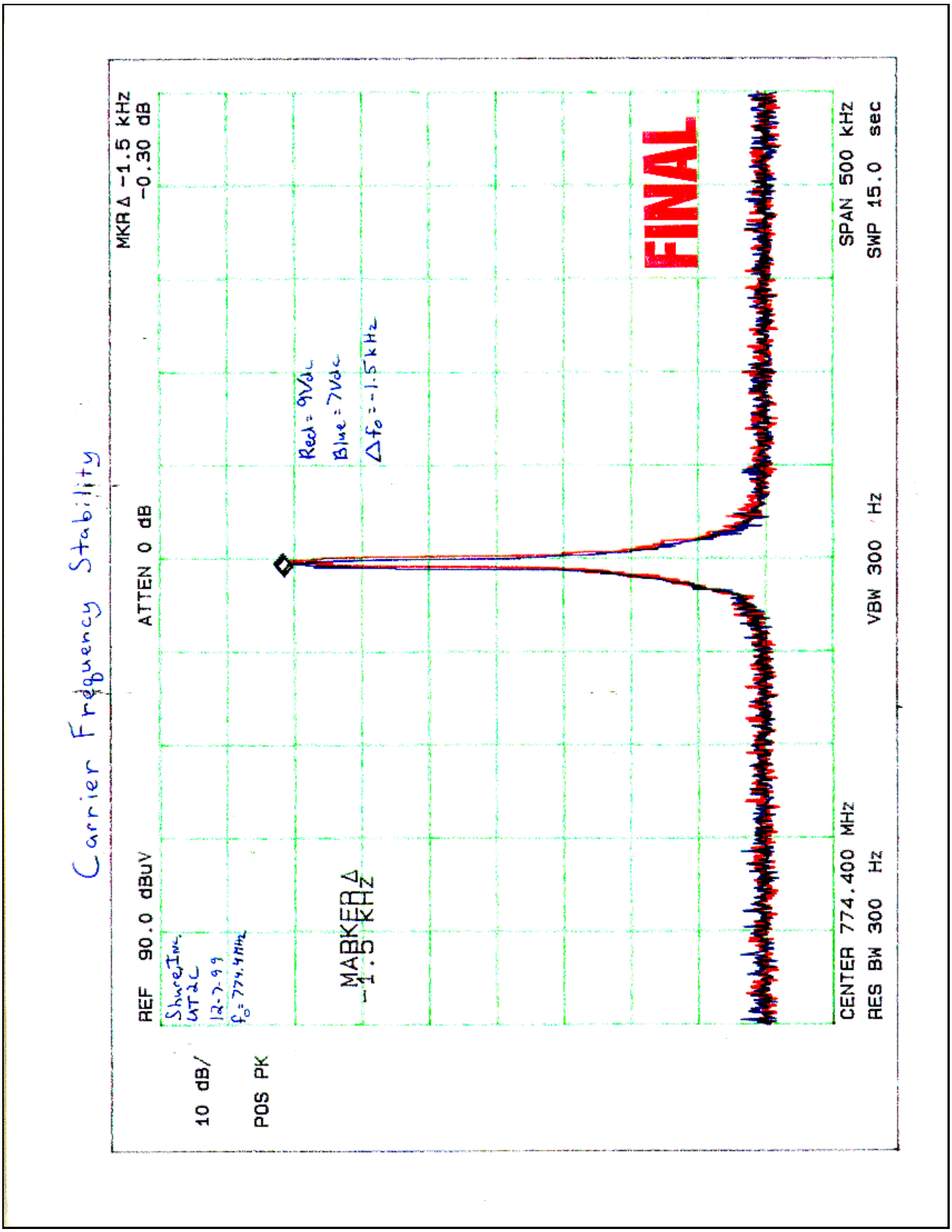
GRAPHS TAKEN FOR FREQUENCY

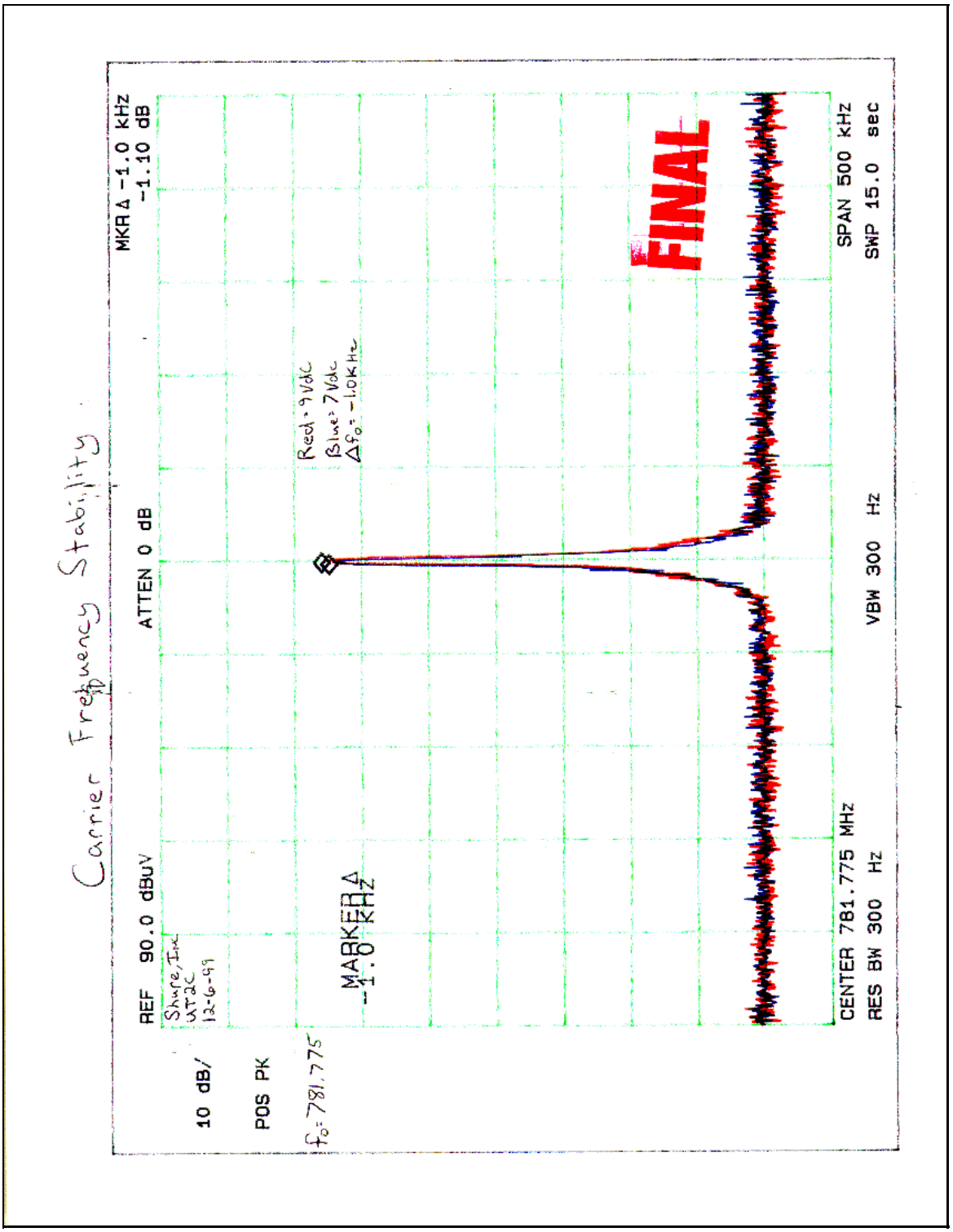
STABILITY WHEN VARYING THE

PRIMARY SUPPLY VOLTAGE

PART 2.1055d

This is well within the specified limits.


Carrier Frequency Stability
FINAL
REF 90.0 dBuV
ATTEN 0 dB
MKR Δ -1.5 kHz
-0.30 dB
10 dB/
POS PK
MARKER Δ
-1.5 kHz
Red = 9Vdc
Blue = 7Vdc
Δfo = -1.5 kHz
Shure Inc.
UT2C
12-7-99
fo: 774.4MHz
CENTER 774.400 MHz
RES BW 300 Hz
VBW 300 Hz
SPAN 500 kHz
SWP 15.0 sec


Carrier Frequency Stability
MKR Δ -1.0 kHz
-1.10 dB
REF 90.0 dBuV
ATTEN 0 dB
10 dB/
POS PK
Shure, Inc
WTAC
12-6-99
Red: 9 Vdc
Blue: 7 Vdc
Δfo: -1.0K Hz
MARKER Δ
-1.0 KHz
fo: 781.775
FINAL
CENTER 781.775 MHz
RES BW 300 Hz
VBW 300 Hz
SPAN 500 kHz
SWP 15.0 sec

14.0 PHOTO INFORMATION AND TEST SET-UP

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

Item 0 UHF Wireless System
FCC ID#: DD4UT2C SN: NA

Item 1 Shielded Belden 9273 RF Cable with Metal Shells. 1m

Item 2 Hewlett-Packard 3312A Function Generator.

Item 3

Item 4

Item 5

Item 6

Item 7

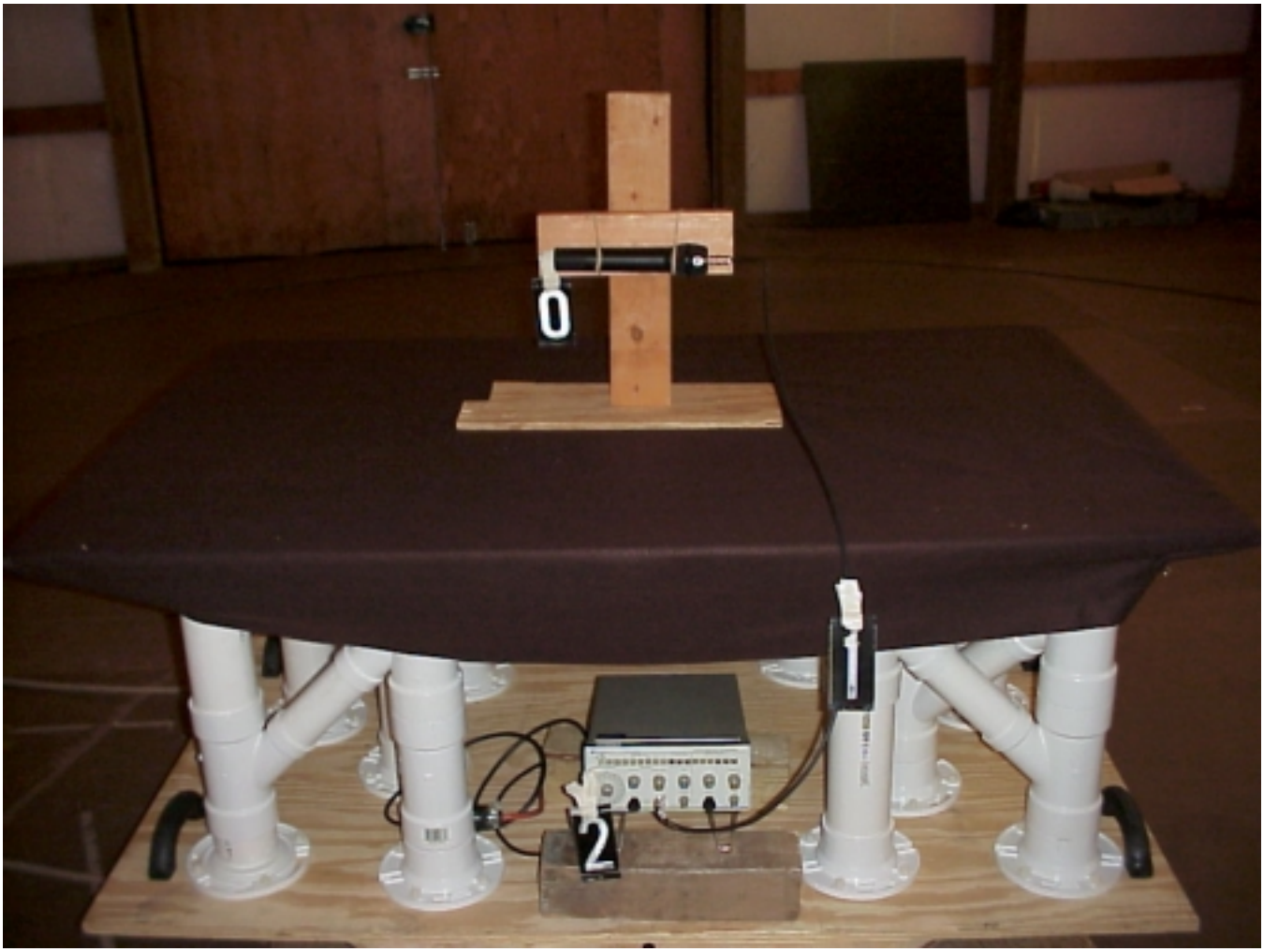
Item 8

Item 9

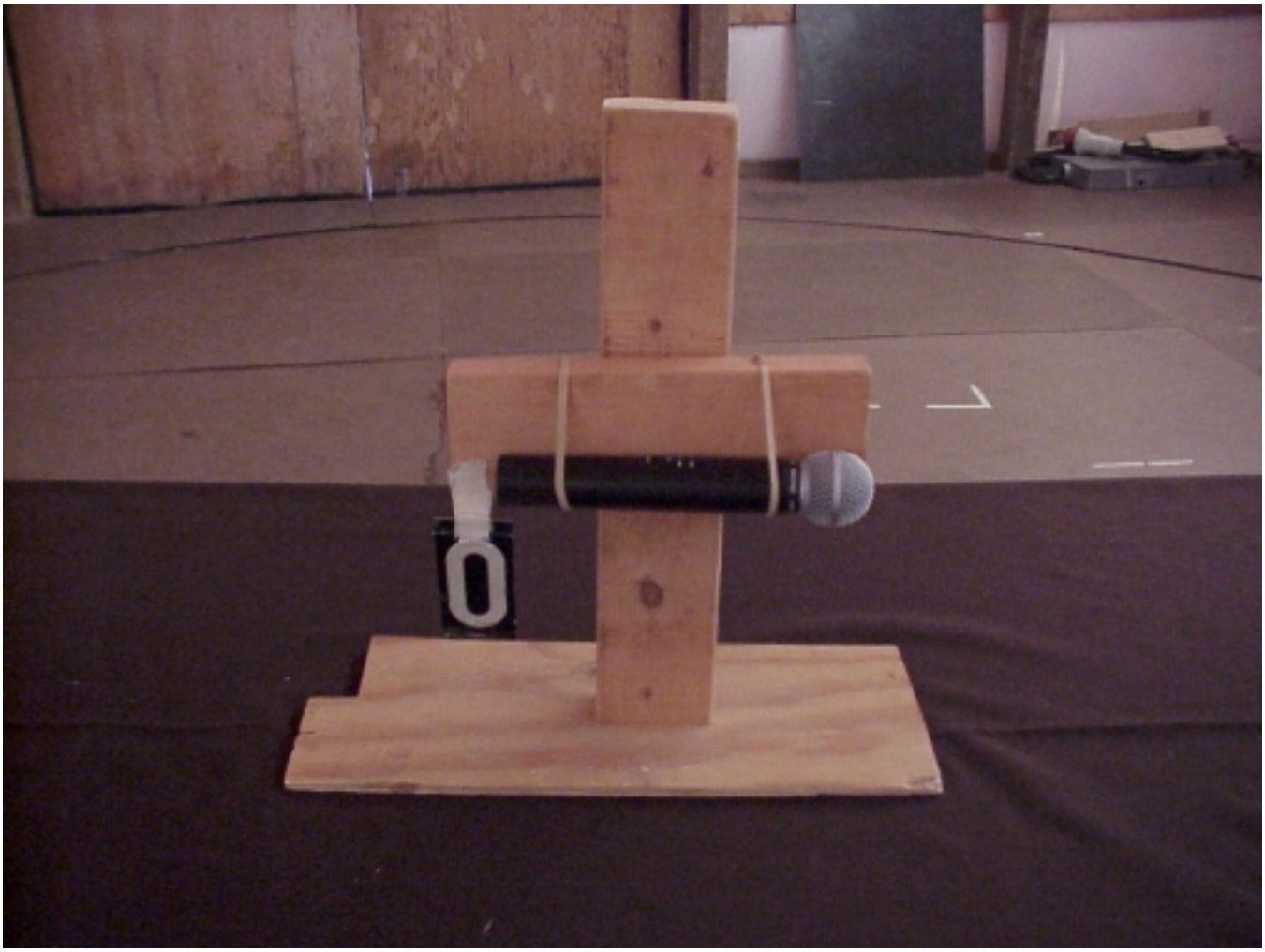
Item 10

15.0 RADIATED PHOTOS TAKEN DURING TESTING.

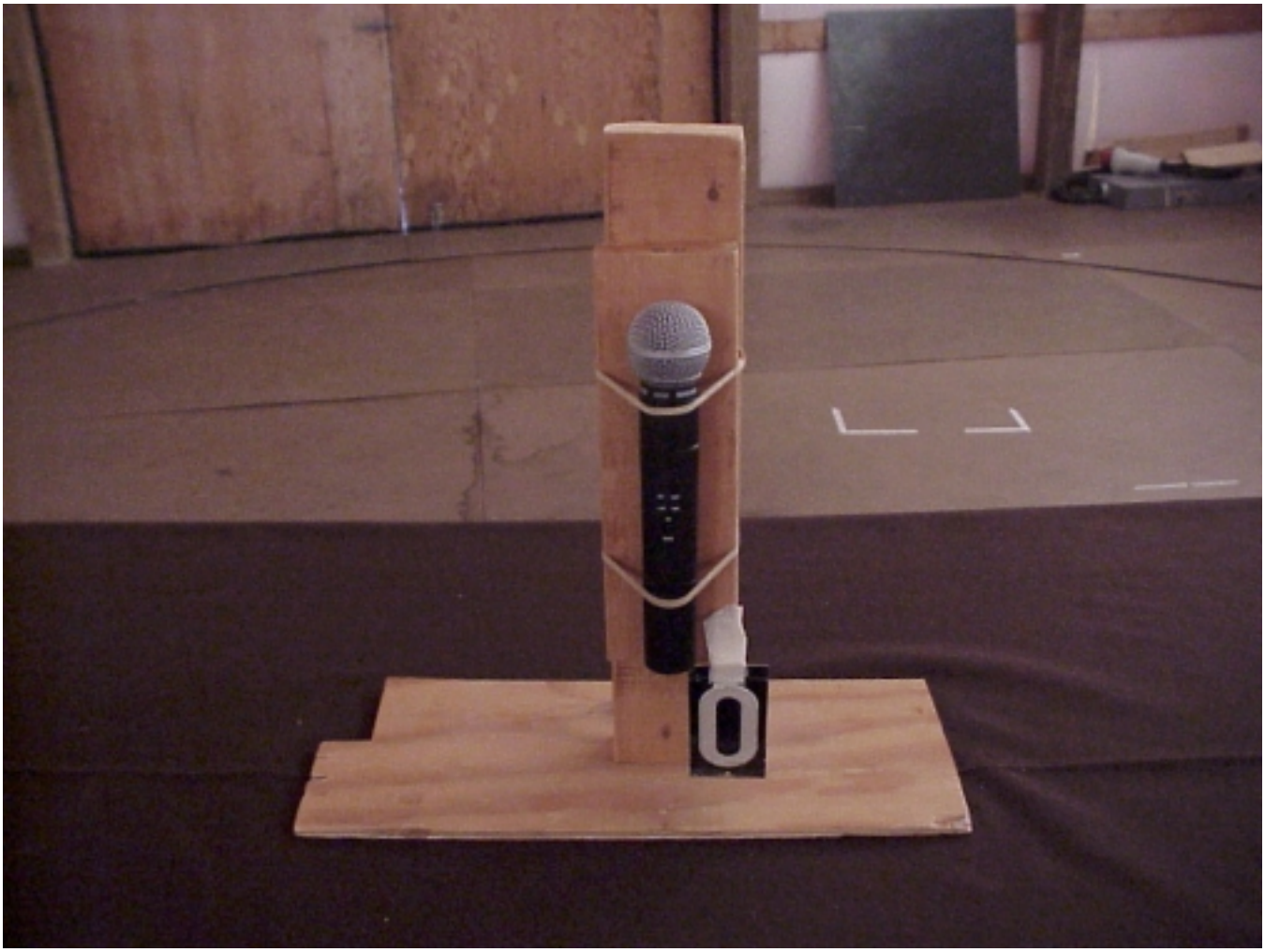
15.0 RADIATED PHOTOS TAKEN DURING TESTING



15.0 RADIATED PHOTOS TAKEN DURING TESTING



15.0 RADIATED 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 ensure compliance.

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

Change 2.

Change 3.

Change 4.

Change 5.

16.0 CHANGE INFORMATION (CON'T)

Change 6.

Change 7.

Change 8.

Change 9.

Change 10.

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

by _____ _____
Signature Title

for _____ _____
Company Name 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 that were verified during the test.

18.0 CONCLUSION

It was found that the Wireless Transmitter, Model Number UT2C, S/N 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 774-782 MHz Frequency Band. This test report relates only to the items tested.

This report contains the following number of pages.

Text:	39 pages
Data Summary:	8 pages
Charts:	34 pages

TABLE 1 - EQUIPMENT LIST

Test Equipment	Manufacturer/ Description	Model Number	Serial Number	Frequency Range	Cal Due Date
*Spectrum Analyzer	Hewlett/ Packard	8566B	2240A 02041	25 Hz –22 GHz	11/00
Quasi-Peak Adapter	Hewlett/ Packard	85650A	2043A 00121	10 kHz – 1 GHz	11/00
***Spectrum Analyzer	Hewlett/ Packard	8591A	3009A 00700	9 kHz- 1.8 GHz	3/00
Receiver	Electrometrics	EMC-25 Mark-III	772	.01-1000 MHz	9/00
Meter Module	Electrometrics	CRM-25	162	.01-1000 MHz	9/00
Receiver	Electrometrics	EMC-25 Mark-III	804	.01-1000 MHz	10/00
Meter Module	Electrometrics	CRM-25	138	.01-1000 MHz	10/00
Receiver	Electrometrics	EMC-25 Mark-III	645	.01-1000 MHz	9/00
Meter Module	Electrometrics	CRM-25	116	.01-1000 MHz	9/00
Receiver	Electrometrics	EMC-30 Mark-III	44168	.01-1000 MHz	7/00
Antenna	Electrometrics	BIA-25	2453	20 - 200 MHz	4/00
Antenna	Electrometrics	LPA-25	1114	200 - 1000 MHz	4/00
Antenna	Electrometrics	BIA-25	2614	20 - 200 MHz	4/00
Antenna	Electrometrics	LPA-25	1205	200 - 1000 MHz	4/00
Antenna	Electrometrics	BIA-25	4785	20 - 200 MHz	4/00
Antenna	Electrometrics	LPA-25	4895	200 - 1000 MHz	4/00
Antenna	EMCO	3115	2479	1 – 18 GHz	4/00

*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