




Electromagnetic Compatibility Tests on a VIVA FP3 Adaptor Transmitter, Part No. FP3

For : Shure Inc.
5800 West Touhy Avenue
Niles, IL 60714

P.O. No. : 4500211799; 211798
Dates Tested : December 7, 2011 through February 8, 2012
Test Personnel : Craig M. Dinsmore,
Specification : FCC "Code of Federal Regulations" Title 47 Part 74
Industry Canada RSS-123

Test Report By : 
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REPORT REVISION HISTORY

Revision	Date	Description
--	February 24, 2012	Initial release

Electromagnetic Compatibility Tests on VIVA FP3 Adaptor Transmitter, Part No. FP3

1. INTRODUCTION

1.1 Scope of Tests

This document presents the results of a series of electromagnetic compatibility (EMC) tests performed on a VIVA FP3 Adaptor Transmitter, Model No. FP3, (hereinafter referred to as the Equipment Under Test (EUT)). The EUT contained a transmitter that was designed to transmit in the following UHF frequency bands using an internal, non-removable antenna:

Band	Frequency (MHz)	Output Power (mW)
G4	470 – 494	30
G5	494 – 518	30
H5	518 – 542	30
J3	572 - 596	30
L4	638 – 662	30

For RF output power testing purposes only, a specially modified version of each transmitter band was provided by Shure, Inc. These units were modified with an SMA coaxial connector so that the RF output could be connected to an RF power meter. All other tests utilized an SM58 dynamic microphone.

The EUT was manufactured and submitted for testing by Shure Inc. located in Niles, IL.

1.2 Purpose

The test series was performed to determine if the EUT continues to comply with the requirements of the Code of Federal Regulations, Title 47, Part 74 for low power auxiliary station bands and Industry Canada RSS-123 Licensed Low-Power Radio Apparatus.

1.3 Deviations, Additions, and Exclusions

There were no deviations, additions to, or exclusions from the test specification during this test series.

1.4 EMC Laboratory Identification

The electromagnetic compatibility tests were performed by Elite Electronic Engineering Incorporated of Downers Grove, Illinois.

1.5 Laboratory Conditions

The temperature at the time of the test was 22°C and the relative humidity was 21%.

2. 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 2011
- Federal Communications Commission "Code of Federal Regulations", Title 47, Part 2, dated 1 October 2011



- RSS-123, "Radio Standards Specification Low Power Licensed Radio communication Devices" Issue 1, Rev. 2 November 6, 1999
- TIA-603-C-2004, "Land Mobile FM or PM Communications Equipment Measurement and Performance Standard"

3. TEST ITEM SETUP AND OPERATION

3.1 General Description

The test item is a VIVA FP3 Adaptor Transmitter, Model No. FP3. A block diagram of the test item setup is shown as Figure 1.

3.1.1 Power Input

The EUT was powered with 3VDC from two (2) each internal "AA" batteries.

3.1.2 Peripheral Equipment

The microphone port of the EUT was terminated with a Shure PG58 vocal microphone for all radiated emissions tests.

3.1.3 Signal Input/Output Leads

The EUT was submitted for testing with no signal input/output leads except for five (5) specially modified samples equipped with an antenna port and battery leads to accommodate the RF power output test.

3.1.4 Grounding

The test item was ungrounded during testing.

3.1.5 Frequency of Test Item

Per CFR Title 47, Section 2, part 1057, for spurious emissions measurements at the antenna terminal and for spurious radiated emissions measurements, the frequency spectrum shall be investigated up to at least the tenth harmonic of the highest fundamental frequency.

3.2 Operational Mode

All emissions tests were performed separately in the following modes:

Band	Frequency (MHz)	Output Power (mW)
G4	470.125	30
G4	481.75	30
G4	493.825	30
G5	494.125	30
G5	505.75	30
G5	517.5	30
H5	518.2	30



H5	530.5	30
H5	541.8	30
J3	572.2	30
J3	584.5	30
J3	595.8	30
L4	638.2	30
L4	650.5	30
L4	661.8	30

3.3 Test Item Modifications

No modifications were required for compliance.

4. TEST FACILITY AND TEST INSTRUMENTATION

4.1 Shielded Enclosure

All tests were performed in a 32ft. x 20ft. x 18ft. hybrid ferrite-tile/anechoic absorber lined test chamber. With the exception of the floor, the reflective surfaces of the shielded chamber are lined with ferrite tiles on the walls and ceiling. 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.

4.2 Test Instrumentation

The test instrumentation and auxiliary equipment used during the tests are listed in **Table 10-1**.

4.3 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).

4.4 Measurement Uncertainty

All measurements are an estimate of their true value. The measurement uncertainty characterizes, with a specified confidence level, the spread of values which may be possible for a given measurement system.

The measurement uncertainty for these tests is presented below:

Radiated Emission Measurements		
Combined Standard Uncertainty	2.26	-2.18
Expanded Uncertainty (95% confidence)	4.5	-4.4

5. TEST PROCEDURES

5.1 RF POWER OUTPUT MEASUREMENTS

5.1.1 Requirements

In accordance with paragraph 74.861(e)(1)(ii), for low power auxiliary stations operating in the bands allocated for TV broadcasting, the power of the measured unmodulated carrier power at the output of the transmitter power amplifier (antenna input power) may not exceed 250 milliwatts in the 470-608 and 614-806MHz bands. In accordance with paragraph 74.861(d)(1), for low power auxiliary stations operating in the bands other than those allocated for TV broadcasting, the maximum transmitter power which will be authorized is 1 watt.

For certification to paragraph 6.2 of the Industry Canada's RSS-123 requirement, the RF power output must not exceed 250 milliwatt average power as listed in Table 1.

5.1.2 Procedures

The output from the antenna port of the specially modified samples of the test item were connected to a spectrum analyzer through 40dB of attenuation. The output power of the test item was then measured.

5.1.3 Results

The output power measurements are presented on page 19. As can be seen from the data, the power output of each transmitter is within the requirements of Part 74.861 and RSS-123.

5.2 MODULATION CHARACTERISTICS

5.2.1 Requirements

In accordance with paragraph 74.861(e)(3) and paragraph 5.5 of RSS-123, for low power auxiliary stations operating in the bands allocated for TV broadcasting, any form of modulation may be used. A maximum deviation of $\pm 75\text{kHz}$ is permitted when frequency modulation is employed.

5.2.2 Procedures

The output of the antenna port of the specially modified test item was connected to a modulation analyzer. An audio signal generator was connected to the audio input port of the test item.

- a) The test item was modulated with a 1000 Hz modulating signal at 60% of the test items rated frequency deviation.
- b) With input level held constant the audio signal generator was varied from 20 Hz to 20 kHz.
- c) The positive and negative peak deviations were recorded and plotted.

The output of the antenna port of the test item was connected to a modulation analyzer. An audio signal generator was connected to the audio input port of the test item.

- a) The modulation response was measured separately for each of five frequencies (100Hz, 500Hz, 2500Hz, 10000Hz and 15000Hz).
- b) The input voltage of the audio signal generator was varied and frequency deviation was observed on the modulation analyzer.
- c) The frequency deviations were recorded and plotted.

5.2.3 Results

A plot of the combined modulation characteristics as measured by Shure, Inc. is presented on page 20.

5.3 FREQUENCY STABILITY

5.3.1 Requirements

In accordance with paragraph 74.861(e)(4) and paragraph 7 of RSS-123 Table 1, for low power auxiliary stations operating in the bands allocated for TV broadcasting, the frequency tolerance of the transmitter shall be 0.005 percent.

5.3.2 Procedures

The test item was placed near a frequency counter antenna. The transmit frequency was recorded. The test item was then placed in a temperature chamber.

- a) The nominal frequency of the transmitter was measured and recorded at nominal room temp (22°C).
- b) The temperature chamber was then set to -30°C.
- c) Once the temperature had reached -30°C the test item was allowed to soak for 30 minutes.
- d) After soaking at -30°C for thirty minutes the test item was turned on and the transmit frequency was measured and recorded.
- e) Steps (b) through (d) were repeated for each temperature in 10°C steps from -20°C to +50°C.

5.3.3 Results

The frequency stability measurements are presented on pages 21 through 32. As can be seen from the data the test frequency deviation was within the 0.005 percent limit. A photograph of the test setup is shown in Figure 2.

5.4 OCCUPIED BANDWIDTH MEASUREMENTS

5.4.1 Requirements

In accordance with paragraph 74.861(e)(5) and (6), for low power auxiliary stations operating in the bands allocated for TV broadcasting, the following technical requirements apply:

- a) The operating bandwidth shall not exceed 200 kHz.
- b) The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:
 - i. 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;
 - ii. 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;
 - iii. On any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least $43+10\log_{10}$ (mean output power in watts) dB.

For certification to the RSS-123 paragraph 6.3.1, the power of unwanted emissions shall be attenuated

below the mean transmitter power in accordance with the following schedule:

- a) On any frequency removed from the carrier frequency by more than 50% up to and including 100% of the authorized bandwidth: at least 25 dB.
- b) On any frequency removed from the carrier frequency by more than 100% up to and including 250% of the authorized bandwidth: at least 35 dB.
- c) On any frequency removed from the carrier frequency by more than 250% of the authorized bandwidth: at least $55 + 10 \log (P)$ dB.

5.4.2 Procedures

- a) The test item was connected to a spectrum analyzer through 30 dB of attenuation. The unmodulated carrier signal level was measured and recorded.
- b) 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.
- c) The test item was modulated with a 15 kHz sine wave at an input level necessary to produce 85% of the rated system deviation.
- d) Steps (a) through (c) were repeated separately for each of the remaining 2 transmitters. The bandwidth of the spectrum analyzer was set to 2kHz (1% of Authorized BW).

5.4.3 Results

The plots of the occupied bandwidth measured are presented on pages 34 through 63. The limits, shown on the plots, are referenced to the power measured from the un-modulated carrier, the power when modulated with a 2500 Hz sine wave at an input 16dB greater than that necessary to produce 50% of the rated deviation and a 15 kHz sine wave at 85% of the maximum deviation.

The operating bandwidth was determined using Carson's rule:

$B_n = 2M + 2DK$ where B_n = bandwidth, M = Maximum modulating frequency and D = Peak Deviation. With $K = 1$, $M = 12.5\text{kHz}$ and $D = 47\text{kHz}$ resulting in an operating bandwidth of 119kHz.

The maximum Industry Canada 99% bandwidth measurement was 126.25kHz.

As can be seen from the data, the test items met all occupied bandwidth requirements. . A photograph of the test setup is shown in Figure 2.

5.5 SPURIOUS EMISSIONS

5.5.1 Requirements

In accordance with paragraph 74.861 of CFR 47, the power of any emission on any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth shall be attenuated by at least $43 + 10 \log (P)$ dB.

In accordance with RSS-123 paragraph 6.3.1, the power of any emission on any frequency removed from the carrier frequency by more than 250% of the authorized bandwidth shall be attenuated by at least $55 + 10 \log (P)$ dB.

5.5.2 Procedures

All 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 powerlines and signal lines entering the enclosure pass through filters on the enclosure wall. The powerline filters prevent extraneous signals from entering the enclosure on these leads.

1. Preliminary radiated measurements were performed to determine the frequencies where the significant emissions might be found. With the test item at one set position and the measurement antenna at a set height (i.e. without maximizing), the radiated emissions were measured using a peak detector and automatically plotted. The broadband measuring antenna was positioned at a 3 meter distance from the test item. This data was then automatically plotted. All preliminary tests were performed separately with the test item operating in the modes listed in Para. 3.2.
2. All significant broadband and narrowband signals found in the preliminary sweeps were then measured using a peak detector at a test distance of 3 meters. The measurements were made with a bilog antenna over the frequency range of 30MHz to 1GHz, and a double ridged waveguide antenna was used for frequencies above 1GHz.
3. To ensure that maximum emission levels were measured, the following steps were taken:
 - a. The test item was rotated so that all of its sides were exposed to the receiving antenna.
 - b. Since the measuring antennas are linearly polarized, both horizontal and vertical field components were measured.
 - c. The measuring antenna was raised and lowered from 1 to 4 meters for each antenna polarization to maximize the readings.

The equivalent power was determined from the field intensity levels measured at 3 meters using the substitution method. To determine the emission power, another antenna was set in place of the test item and connected to a calibrated signal generator. (A tuned dipole was used for all measurements below 1GHz and a double ridged waveguide antenna was used for all measurements above 1GHz.) 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 for frequencies above 1GHz, increased by the gain of the waveguide.

5.5.3 Results

The preliminary plots peak levels are presented on pages 64 through 123. 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 using the substitution method.

The final radiated levels are presented on pages 124 through 143. The radiated emissions were measured through the 10th harmonic. All emissions measured from the test item were within the specification limits. Photographs of the test setup are shown in Figure 3 and Figure 4.

6. OTHER TEST CONDITIONS

6.1 Test Personnel and Witnesses

All EMC tests were performed by qualified personnel from Elite Electronic Engineering Incorporated. The test series was partially witnessed by Shure Inc. personnel.



6.2 Disposition of the Test Item

The test item and all associated equipment were returned to Shure Inc. upon completion of the tests.

7. CONCLUSION

It was found that the Shure Inc., model FP3 VIVA FP3 Adaptor Transmitter, did comply with the RF power output, the occupied bandwidth, the frequency stability, the spurious emissions at antenna terminal, and the field strength of spurious emissions requirements of FCC Part 74 for low power auxiliary station bands and Industry Canada RSS-123 Low Power Licensed Radio communication Devices.

8. 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. 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.

9. ENDORSEMENT DISCLAIMER

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



10. EQUIPMENT LIST

Table 10-1

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
ACU0	RF AMPLIFIER-500W (DCC-MA	AMPLIFIER RESEARCH	500W1000M7	17157	80-1000MHZ	NOTE 1	
ADG0	AMPLIFIER	AMPLIFIER RESEARCH	120S1G3	301350	1-3GHZ	NOTE 1	
ADH0	TWT BROADBAND MICROWAVE	AMPLIFIER RESEARCH	500T1G2	313225	1-2.5GHZ	NOTE 1	
CDX6	COMPUTER	ELITE	WORKSTATION			N/A	
ETH2	TEMPERATURE/HUMIDITY CH	THERMOTRON	SE-600-10-10	36821	---	2/9/2012	2/9/2013
GBR2	SIGNAL GENERATOR	HEWLETT PACKARD	8648D	3847U00488	0.009-4000MHZ	3/17/2011	3/17/2012
GBR7	SIGNAL GENERATOR	HEWLETT PACKARD	8648D	3847M00602	9KHZ-4000MHZ	3/25/2011	3/25/2012
GRE0	SIGNAL GENERATOR	AGILENT TECHNOLOG	E4438C	MY 42083127	250KHZ-6GHZ	3/31/2011	3/31/2012
GWF9	15MHZ FUNCTION/ARB WAVE	HEWLETT PACKARD	33120A	US36020624	.1HZ-15MHZ	8/22/2011	8/22/2012
MDBA	MULTIMETER (C. DINSMORE)	FLUKE CORPORATION	177	81380271	I,VAC,VDC,R	9/8/2011	9/8/2012
MFC0	MICROWAVE FREQ. COUNTI	HEWLETT PACKARD	5343A	2133A00591	10HZ-26GHZ	8/30/2011	8/30/2012
MPC1	DUAL POWER METER	HEWLETT PACKARD	EPM-442A	US37480258	0.1MHZ-50GHZ	2/17/2012	2/17/2013
MPC1	POWER SENSOR	HEWLETT PACKARD	8482A	US3318A27650	0.1-4200MHZ	9/26/2011	9/26/2012
NDQ0	TUNED DIPOLE ANTENNA	EMCO	3121C-DB4	311	400-1000MHZ	4/5/2011	4/5/2012
NSA7	LOG PERIODIC ANTENNA	AMPLIFIER RESEARCH	AT1080	14239	20-1000MHZ	NOTE 1	
NTA0	BILOG ANTENNA	CHASE EMC LTD.	BILOG CBL6112	2057	0.03-2GHZ	6/16/2011	6/16/2012
NWF0	RIDGED WAVE GUIDE	EMCO	3105	2035	1-12.4GHZ	1/28/2012	1/28/2013
PCN0	CURRENT PROBE	TEGAM INC.	94111-1	12582	1-1000MHZ	2/28/2011	2/28/2012
RBA0	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB26	100145	20HZ-26.5GHZ	3/9/2011	3/9/2012
RBD0	EMI TEST RECIEVER	ROHDE & SCHWARZ	ESU40	100010	20Hz-40GHZ	3/31/2011	3/31/2012
RSA0	AUDIO ANALYZER	HEWLETT PACKARD	8903B	3413A4471	---	6/6/2011	6/6/2012
RYE0	MODULATION ANALYZER	HEWLETT PACKARD	8901B	3104A03410	0.15-1300MHZ	8/31/2011	8/31/2012
T2D7	20DB, 25W ATTENUATOR	WEINSCHEL	46-20-43	AY9246	DC-18GHZ	8/4/2011	8/4/2012
T2DJ	20DB, 25W ATTENUATOR	WEINSCHEL	46-20-34	BS0923	DC-18GHZ	8/4/2011	8/4/2012
TCMD	30dB VARRIABLE ATTENUATO	ELITE	CMD30	001	---	NOTE 1	
XDN0	50DB,1500W BIDIR. COUPLER	AMPLIFIER RESEARCH	DC6580	26081	80-1000MHZ	5/5/2011	5/5/2012
XDS6	50DB, 400W BIDIRECTIONAL (AMPLIFIER RESEARCH	DC7154A	0325108	.8-4.2GHZ	9/9/2011	9/9/2012
XLQH	5W, 50 OHM TERMINATION	JFW INDUSTRIES	50T-052	54	DC-2GHZ	8/4/2011	8/4/2012
XLZ6	50 OHM TERMINATION	PASTERNAK	PE6009	004	DC-18GHZ	8/4/2011	8/4/2012

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.

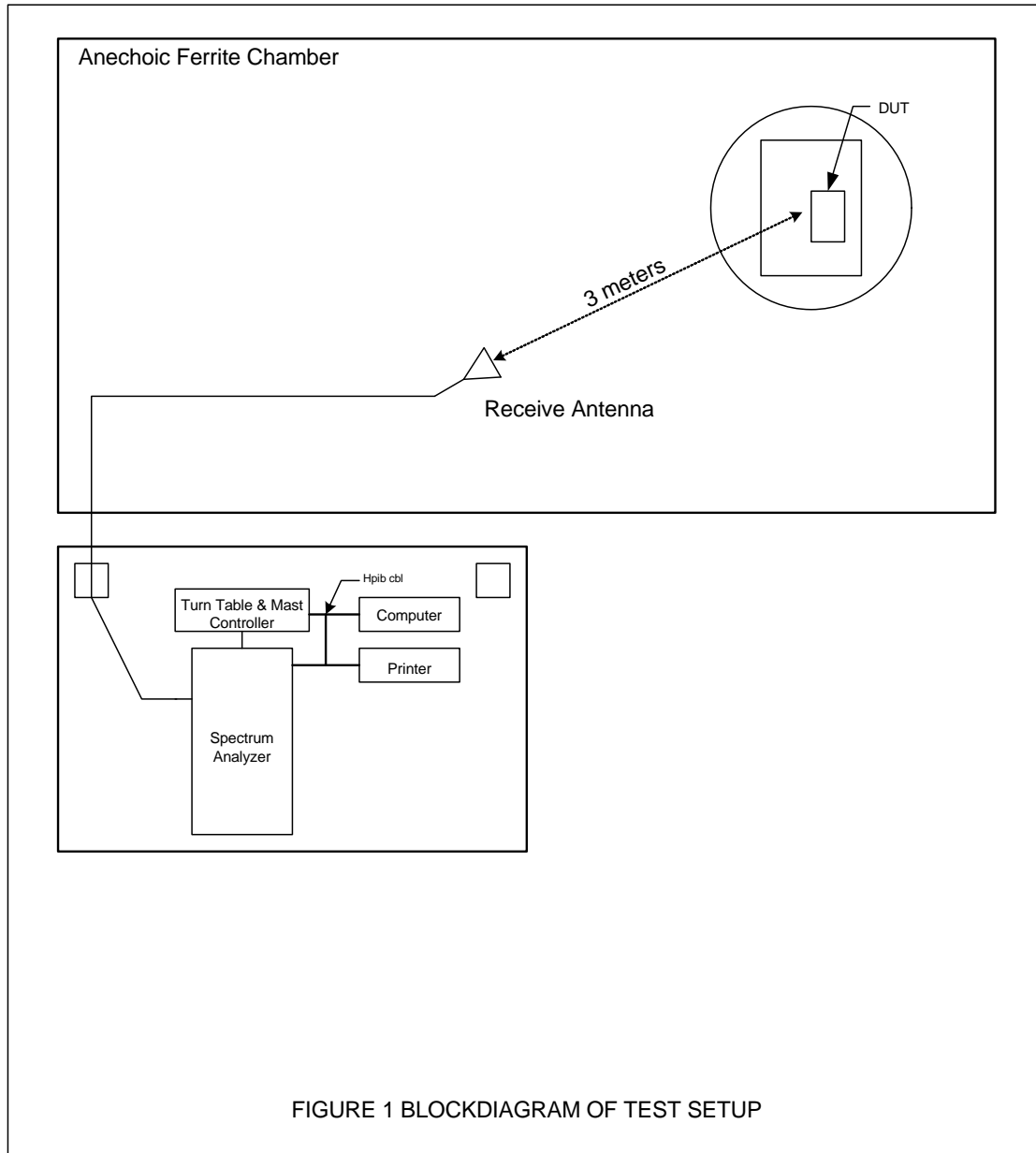
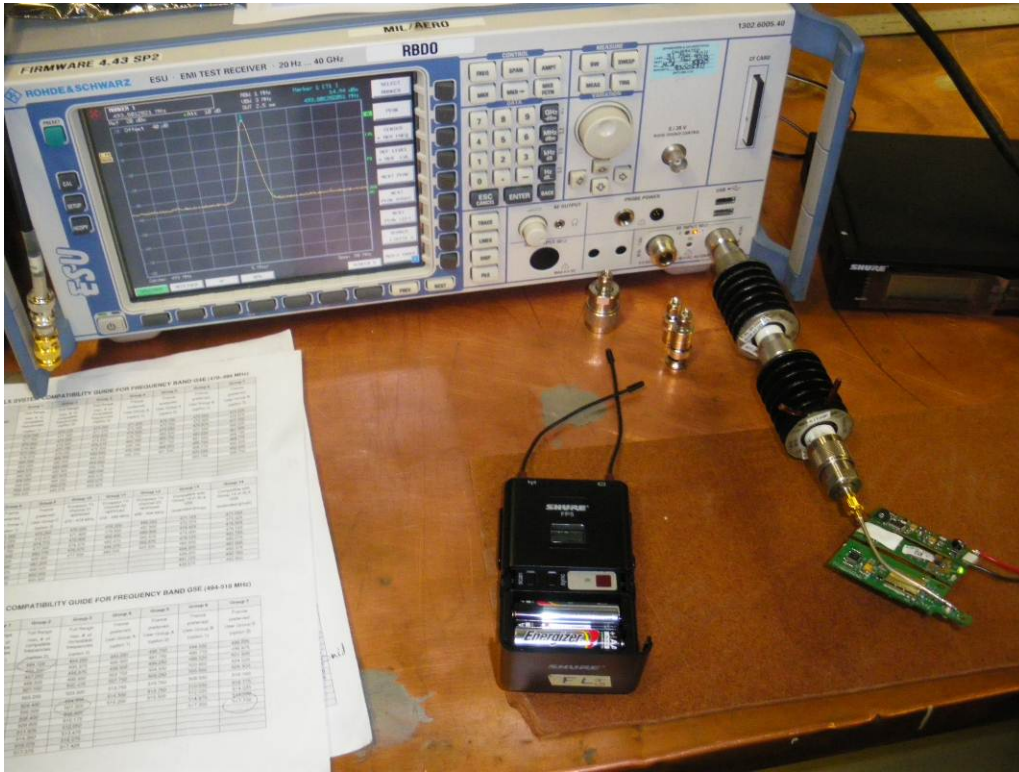


FIGURE 1 BLOCKDIAGRAM OF TEST SETUP



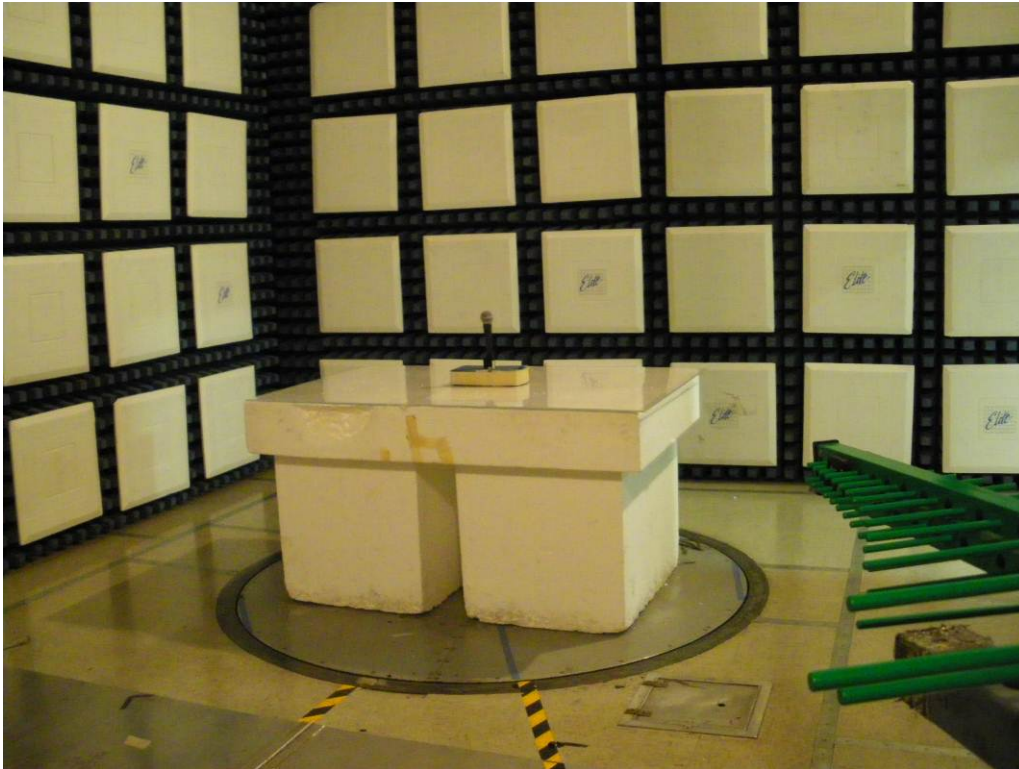
Test Setup for Power Output Test



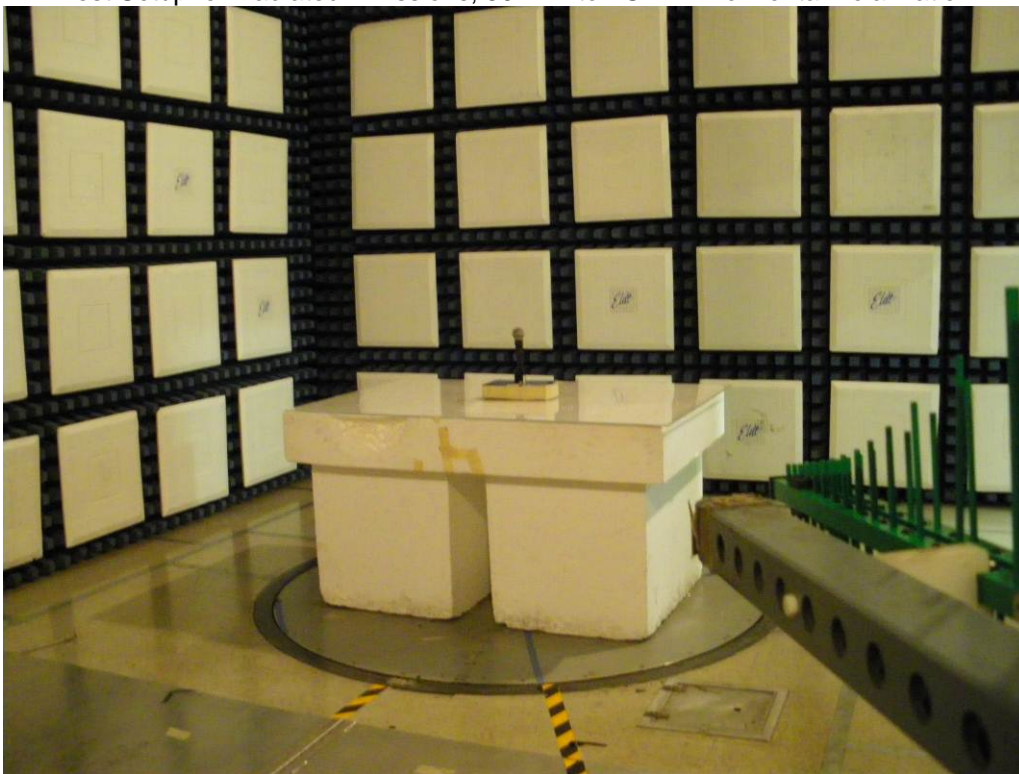
Test Setup for Frequency Stability over Temperature Test



Test Setup for Occupied Bandwidth Test



Test Setup for Radiated Emissions, 30MHz to 1GHz – Horizontal Polarization



Test Setup for Radiated Emissions, 30MHz to 1GHz – Vertical Polarization



Test Setup for Radiated Emissions, Above 1GHz – Horizontal Polarization



Test Setup for Radiated Emissions, Above 1GHz – Vertical Polarization



MANUFACTURER : Shure Inc.
MODEL : FP33 VIVA FP3 Adaptor Transmitter
SERIAL NO. : See below
SPECIFICATION : FCC-74 and RSS-123 RF Power Output – Antenna Conducted
DATE : February 3, 2012
MODE : Transmit
BAND : See below
EQUIPMENT USED : RBD0, T2D5, T2S6

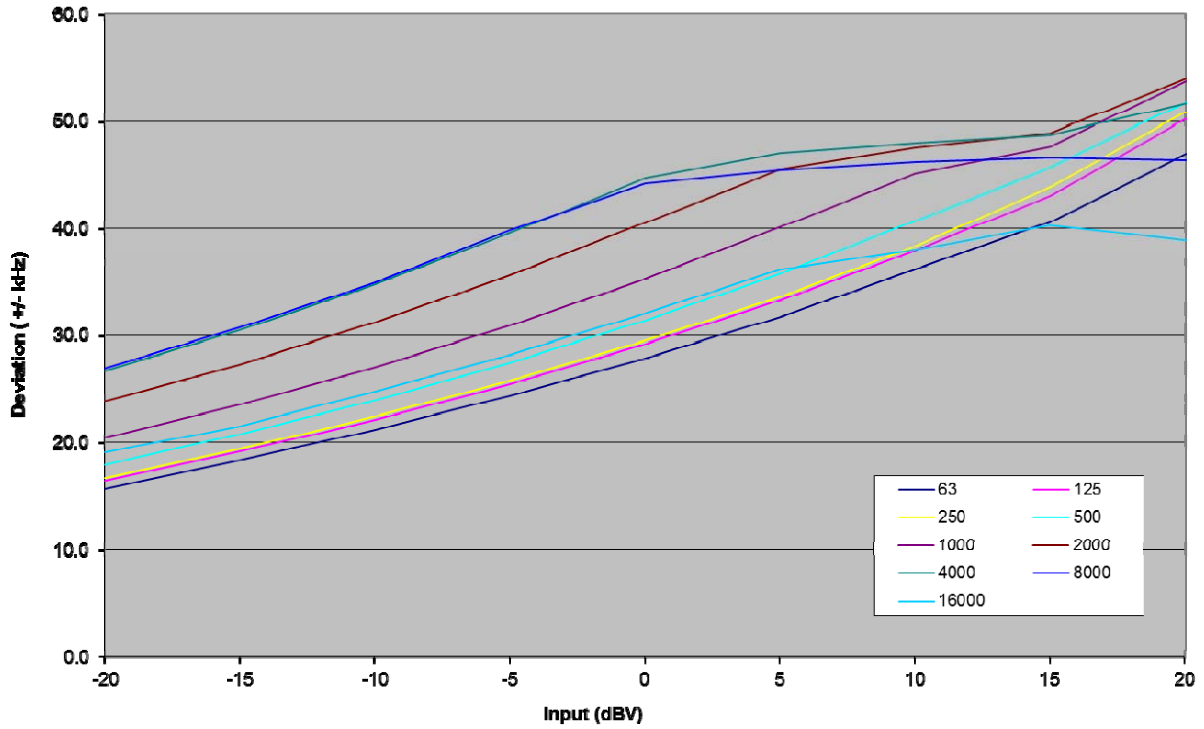
Band	Frequency MHz	Serial Number	Nominal Power mW	Nominal Power dBm	Measured Power dBm	Measured Power mW	FCC-74 Limit mW	RSS-123 Limit mW
G4	470.125	4111510154	30	14.8	15.7	37.1	250	250
G4	481.75	4111510154	30	14.8	15.4	34.7	250	250
G4	493.825	4111510154	30	14.8	14.9	30.9	250	250
G5	494.125	4111510155	30	14.8	16.3	42.7	250	250
G5	505.75	4111510155	30	14.8	15.8	38.0	250	250
G5	517.75	4111510155	30	14.8	14.9	30.9	250	250
H5	518.2	4111510042	30	14.8	16.1	40.7	250	250
H5	530.5	4111510042	30	14.8	15.4	34.7	250	250
H5	541.8	4111510042	30	14.8	14.8	30.2	250	250
J3	572.2	4111510054	30	14.8	15.7	37.1	250	250
J3	584.5	4111510054	30	14.8	15.6	36.3	250	250
J3	595.8	4111510054	30	14.8	15.4	34.7	250	250
L4	638.2	4111510079	30	14.8	15.4	34.7	250	250
L4	650.5	4111510079	30	14.8	15.3	33.9	250	250
L4	661.8	4111510079	30	14.8	15.2	33.1	250	250

Checked By: 
Craig M. Dinsmore



MANUFACTURER : Shure Inc.
MODEL : FP3 VIVA FP3 Adaptor Transmitter
SERIAL NO. : None Assigned
SPECIFICATION : FCC-74 and RSS-123 Modulation Characteristics
DATE :
EQUIPMENT USED : Test data from Shure, Inc.

Deviation vs. Input (4 units averaged)





DATA SHEET

MANUFACTURER Shure, Inc.
EUT Wireless Microphone Transmitter
MODEL NO. FP3
SERIAL NO. 41115101150
SPECIFICATION FCC 74.861
TEST Frequency Stability over Temperature range
TEST EQUIPMENT ETH2, MFC0
MODE Transmit
BAND G4
DATE TESTED February 1, 2012
NOTES Results: Pass

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	481.750000	481.752499	0.0005187	0.005	2499.000000	24087.5
-20	481.750000	481.752489	0.0005167	0.005	2489.000000	24087.5
-10	481.750000	481.752493	0.0005175	0.005	2493.000000	24087.5
0	481.750000	481.752535	0.0005262	0.005	2535.000000	24087.5
10	481.750000	481.752108	0.0004376	0.005	2108.000000	24087.5
20	481.750000	481.750780	0.0001619	0.005	780.000000	24087.5
30	481.750000	481.749706	-0.0000610	0.005	-294.000000	24087.5
40	481.750000	481.748841	-0.0002406	0.005	-1159.000000	24087.5
50	481.750000	481.747952	-0.0004251	0.005	-2048.000000	24087.5

Checked By:

Craig M. Dinsmore



DATA SHEET

MANUFACTURER Shure, Inc.
 EUT Wireless Microphone Transmitter
 MODEL NO. FP3
 SERIAL NO. 41115101166
 SPECIFICATION FCC 74.861
 TEST Frequency Stability over Temperature range
 TEST EQUIPMENT ETH2, MFC0
 MODE Transmit
 BAND G5
 DATE TESTED February 1, 2012
 NOTES Results: Pass

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	505.750000	505.749663	-0.0000666	0.005	-337.000000	25287.5
-20	505.750000	505.751740	0.0003440	0.005	1740.000000	25287.5
-10	505.750000	505.751936	0.0003828	0.005	1936.000000	25287.5
0	505.750000	505.752117	0.0004186	0.005	2117.000000	25287.5
10	505.750000	505.751887	0.0003731	0.005	1887.000000	25287.5
20	505.750000	505.750889	0.0001758	0.005	889.000000	25287.5
30	505.750000	505.749966	-0.0000067	0.005	-34.000000	25287.5
40	505.750000	505.749260	-0.0001463	0.005	-740.000000	25287.5
50	505.750000	505.748536	-0.0002895	0.005	-1464.000000	25287.5

Checked By:

Craig M. Dinsmore



DATA SHEET

MANUFACTURER Shure, Inc.
 EUT Wireless Microphone Transmitter
 MODEL NO. FP3
 SERIAL NO. 41115101030
 SPECIFICATION FCC 74.861
 TEST Frequency Stability over Temperature range
 TEST EQUIPMENT ETH2, MFC0
 MODE Transmit
 BAND H5
 DATE TESTED February 1, 2012
 NOTES Results: Pass

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	530.500000	530.501198	0.0002258	0.005	1198.000000	26525
-20	530.500000	530.501183	0.0002230	0.005	1183.000000	26525
-10	530.500000	530.501801	0.0003395	0.005	1801.000000	26525
0	530.500000	530.501828	0.0003446	0.005	1828.000000	26525
10	530.500000	530.501440	0.0002714	0.005	1440.000000	26525
20	530.500000	530.500017	0.0000032	0.005	17.000000	26525
30	530.500000	530.498906	-0.0002062	0.005	-1094.000000	26525
40	530.500000	530.497938	-0.0003887	0.005	-2062.000000	26525
50	530.500000	530.497072	-0.0005519	0.005	-2928.000000	26525

Checked By:

Craig M. Dinsmore



DATA SHEET

MANUFACTURER Shure, Inc.
EUT Wireless Microphone Transmitter
MODEL NO. FP3
SERIAL NO. 41115101060
SPECIFICATION FCC 74.861
TEST Frequency Stability over Temperature range
TEST EQUIPMENT ETH2, MFC0
MODE Transmit
BAND J3
DATE TESTED February 1, 2012
NOTES Results: Pass

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	584.500000	584.497933	-0.0003536	0.005	-2067.000000	29225
-20	584.500000	584.499933	-0.0000115	0.005	-67.000000	29225
-10	584.500000	584.500942	0.0001612	0.005	942.000000	29225
0	584.500000	584.501298	0.0002221	0.005	1298.000000	29225
10	584.500000	584.501092	0.0001868	0.005	1092.000000	29225
20	584.500000	584.499907	-0.0000159	0.005	-93.000000	29225
30	584.500000	584.499005	-0.0001702	0.005	-995.000000	29225
40	584.500000	584.498154	-0.0003158	0.005	-1846.000000	29225
50	584.500000	584.497481	-0.0004310	0.005	-2519.000000	29225

Checked By:

Craig M. Dinsmore



DATA SHEET

MANUFACTURER Shure, Inc.
 EUT Wireless Microphone Transmitter
 MODEL NO. FP3
 SERIAL NO. 41115101069
 SPECIFICATION FCC 74.861
 TEST Frequency Stability over Temperature range
 TEST EQUIPMENT ETH2, MFC0
 MODE Transmit
 BAND L4
 DATE TESTED February 1, 2012
 NOTES Results: Pass

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	650.500000	650.495416	-0.0007047	0.005	-4584.000000	32525
-20	650.500000	650.500567	0.0000872	0.005	567.000000	32525
-10	650.500000	650.501307	0.0002009	0.005	1307.000000	32525
0	650.500000	650.501840	0.0002829	0.005	1840.000000	32525
10	650.500000	650.501696	0.0002607	0.005	1696.000000	32525
20	650.500000	650.500379	0.0000583	0.005	379.000000	32525
30	650.500000	650.499358	-0.0000987	0.005	-642.000000	32525
40	650.500000	650.498144	-0.0002853	0.005	-1856.000000	32525
50	650.500000	650.497427	-0.0003955	0.005	-2573.000000	32525

Checked By:

Craig M. Dinsmore



DATA SHEET

MANUFACTURER Shure, Inc.
 EUT Wireless Microphone Transmitter
 MODEL NO. FP3
 SERIAL NO. 41115101150
 SPECIFICATION Industry Canada RSS-123
 TEST Frequency Stability over Temperature range
 TEST EQUIPMENT ETH2, MFC0
 MODE Transmit
 BAND G4
 DATE TESTED February 1, 2012
 NOTES Results: Pass

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	470.125000	470.127518	0.0005356	0.005	2518.000000	23506.25
-20	470.125000	470.127601	0.0005533	0.005	2601.000000	23506.25
-10	470.125000	470.127419	0.0005145	0.005	2419.000000	23506.25
0	470.125000	470.127464	0.0005241	0.005	2464.000000	23506.25
10	470.125000	470.125690	0.0001468	0.005	690.000000	23506.25
20	470.125000	470.125544	0.0001157	0.005	544.000000	23506.25
30	470.125000	470.125743	0.0001580	0.005	743.000000	23506.25
40	470.125000	470.123833	-0.0002482	0.005	-1167.000000	23506.25
50	470.125000	470.123035	-0.0004180	0.005	-1965.000000	23506.25

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	493.825000	493.825826	0.0001673	0.005	826.000000	24691.25
-20	493.825000	493.826290	0.0002612	0.005	1290.000000	24691.25
-10	493.825000	493.827570	0.0005204	0.005	2570.000000	24691.25
0	493.825000	493.827611	0.0005287	0.005	2611.000000	24691.25
10	493.825000	493.827128	0.0004309	0.005	2128.000000	24691.25
20	493.825000	493.825915	0.0001853	0.005	915.000000	24691.25
30	493.825000	493.824683	-0.0000642	0.005	-317.000000	24691.25
40	493.825000	493.823875	-0.0002278	0.005	-1125.000000	24691.25
50	493.825000	493.822881	-0.0004291	0.005	-2119.000000	24691.25

Checked By:

Craig M. Dinsmore



DATA SHEET

MANUFACTURER Shure, Inc.
 EUT Wireless Microphone Transmitter
 MODEL NO. FP3
 SERIAL NO. 41115101166
 SPECIFICATION Industry Canada RSS-123
 TEST Frequency Stability over Temperature range
 TEST EQUIPMENT ETH2, MFC0
 MODE Transmit
 BAND G5
 DATE TESTED February 1, 2012
 NOTES Results: Pass

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	494.125000	494.127418	0.0004893	0.005	2418.000000	24706.25
-20	494.125000	494.126812	0.0003667	0.005	1812.000000	24706.25
-10	494.125000	494.126810	0.0003663	0.005	1810.000000	24706.25
0	494.125000	494.127066	0.0004181	0.005	2066.000000	24706.25
10	494.125000	494.126924	0.0003894	0.005	1924.000000	24706.25
20	494.125000	494.125794	0.0001607	0.005	794.000000	24706.25
30	494.125000	494.125062	0.0000125	0.005	62.000000	24706.25
40	494.125000	494.124218	-0.0001583	0.005	-782.000000	24706.25
50	494.125000	494.123596	-0.0002841	0.005	-1404.000000	24706.25

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	517.750000	517.749700	-0.0000579	0.005	-300.000000	25887.5
-20	517.750000	517.750100	0.0000193	0.005	100.000000	25887.5
-10	517.750000	517.752012	0.0003886	0.005	2012.000000	25887.5
0	517.750000	517.752166	0.0004183	0.005	2166.000000	25887.5
10	517.750000	517.751890	0.0003650	0.005	1890.000000	25887.5
20	517.750000	517.751016	0.0001962	0.005	1016.000000	25887.5
30	517.750000	517.749917	-0.0000160	0.005	-83.000000	25887.5
40	517.750000	517.749336	-0.0001282	0.005	-664.000000	25887.5
50	517.750000	517.748486	-0.0002924	0.005	-1514.000000	25887.5

Checked By:

Craig M. Dinsmore



DATA SHEET

MANUFACTURER Shure, Inc.
 EUT Wireless Microphone Transmitter
 MODEL NO. FP3
 SERIAL NO. 41115101030
 SPECIFICATION Industry Canada RSS-123
 TEST Frequency Stability over Temperature range
 TEST EQUIPMENT ETH2, MFC0
 MODE Transmit
 BAND H5
 DATE TESTED February 1, 2012
 NOTES Results: Pass

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	518.200000	518.200585	0.0001129	0.005	585.000000	25910
-20	518.200000	518.205122	0.0009884	0.005	5122.000000	25910
-10	518.200000	518.201736	0.0003350	0.005	1736.000000	25910
0	518.200000	518.201766	0.0003408	0.005	1766.000000	25910
10	518.200000	518.201513	0.0002920	0.005	1513.000000	25910
20	518.200000	518.199952	-0.0000093	0.005	-48.000000	25910
30	518.200000	518.199030	-0.0001872	0.005	-970.000000	25910
40	518.200000	518.197929	-0.0003997	0.005	-2071.000000	25910
50	518.200000	518.197174	-0.0005454	0.005	-2826.000000	25910

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	541.800000	541.801376	0.0002540	0.005	1376.000000	27090
-20	541.800000	541.801115	0.0002058	0.005	1115.000000	27090
-10	541.800000	541.801835	0.0003387	0.005	1835.000000	27090
0	541.800000	541.801898	0.0003503	0.005	1898.000000	27090
10	541.800000	541.801426	0.0002632	0.005	1426.000000	27090
20	541.800000	541.800107	0.0000197	0.005	107.000000	27090
30	541.800000	541.798846	-0.0002130	0.005	-1154.000000	27090
40	541.800000	541.798983	-0.0001877	0.005	-1017.000000	27090
50	541.800000	541.796984	-0.0005567	0.005	-3016.000000	27090

Checked By:

Craig M. Dinsmore





DATA SHEET

MANUFACTURER Shure, Inc.
 EUT Wireless Microphone Transmitter
 MODEL NO. FP3
 SERIAL NO. 41115101060
 SPECIFICATION Industry Canada RSS-123
 TEST Frequency Stability over Temperature range
 TEST EQUIPMENT ETH2, MFC0
 MODE Transmit
 BAND J3
 DATE TESTED February 1, 2012
 NOTES Results: Pass

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	572.200000	572.197345	-0.0004640	0.005	-2655.000000	28610
-20	572.200000	572.200049	0.0000086	0.005	49.000000	28610
-10	572.200000	572.200820	0.0001433	0.005	820.000000	28610
0	572.200000	572.201265	0.0002211	0.005	1265.000000	28610
10	572.200000	572.201116	0.0001950	0.005	1116.000000	28610
20	572.200000	572.199878	-0.0000213	0.005	-122.000000	28610
30	572.200000	572.199085	-0.0001599	0.005	-915.000000	28610
40	572.200000	572.198177	-0.0003186	0.005	-1823.000000	28610
50	572.200000	572.197550	-0.0004282	0.005	-2450.000000	28610

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	595.800000	595.798080	-0.0003223	0.005	-1920.000000	29790
-20	595.800000	595.799692	-0.0000517	0.005	-308.000000	29790
-10	595.800000	595.801011	0.0001697	0.005	1011.000000	29790
0	595.800000	595.801329	0.0002231	0.005	1329.000000	29790
10	595.800000	595.801082	0.0001816	0.005	1082.000000	29790
20	595.800000	595.799970	-0.0000050	0.005	-30.000000	29790
30	595.800000	595.798958	-0.0001749	0.005	-1042.000000	29790
40	595.800000	595.798150	-0.0003105	0.005	-1850.000000	29790
50	595.800000	595.797424	-0.0004324	0.005	-2576.000000	29790

Checked By:

Craig M. Dinsmore





DATA SHEET

MANUFACTURER Shure, Inc.
 EUT Wireless Microphone Transmitter
 MODEL NO. FP3
 SERIAL NO. 41115101069
 SPECIFICATION Industry Canada RSS-123
 TEST Frequency Stability over Temperature range
 TEST EQUIPMENT ETH2, MFC0
 MODE Transmit
 BAND L4
 DATE TESTED February 1, 2012
 NOTES Results: Pass

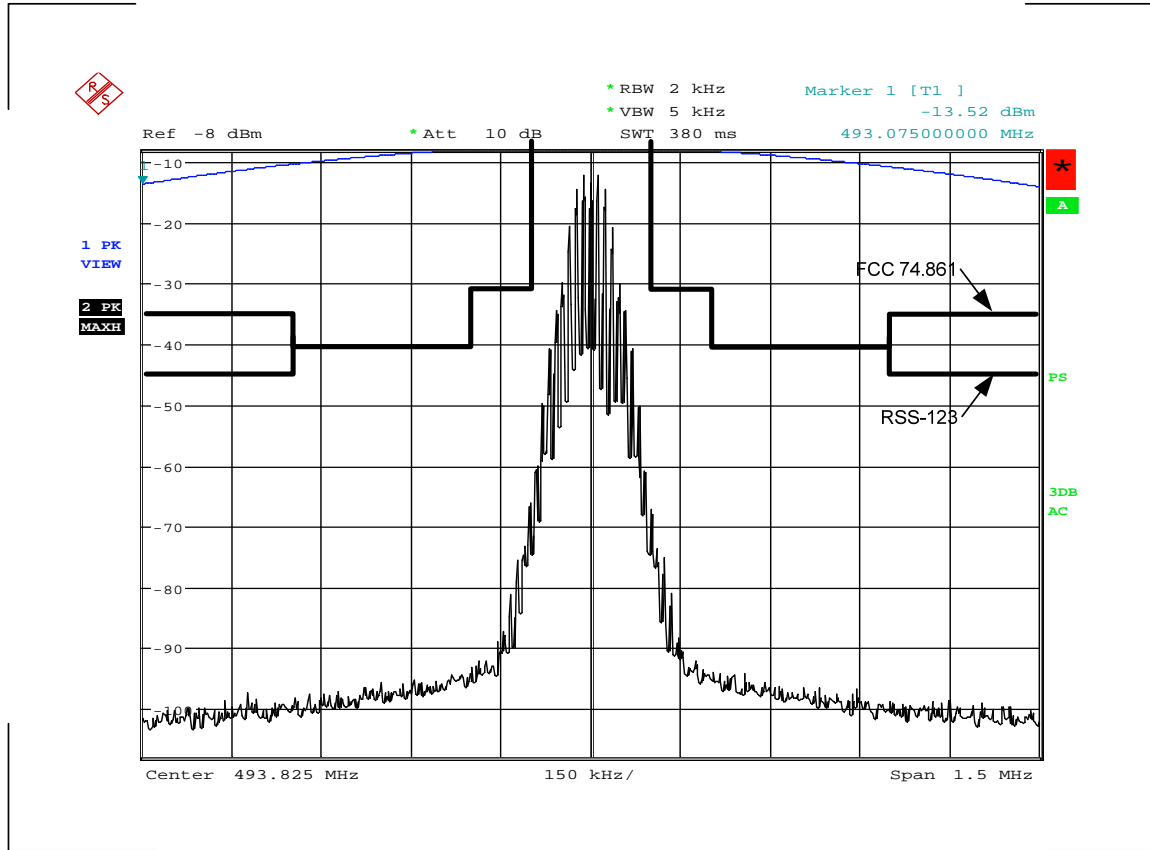
Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	638.200000	638.195712	-0.0006719	0.005	-4288.000000	31910
-20	638.200000	638.200657	0.0001029	0.005	657.000000	31910
-10	638.200000	638.201239	0.0001941	0.005	1239.000000	31910
0	638.200000	638.201789	0.0002803	0.005	1789.000000	31910
10	638.200000	638.201717	0.0002690	0.005	1717.000000	31910
20	638.200000	638.200337	0.0000528	0.005	337.000000	31910
30	638.200000	638.199450	-0.0000862	0.005	-550.000000	31910
40	638.200000	638.198177	-0.0002856	0.005	-1823.000000	31910
50	638.200000	638.197534	-0.0003864	0.005	-2466.000000	31910

Temp °C	Nominal Frequency MHz	Measured Frequency MHz	Deviation %	Max Allowed Deviation %	Deviation Hz	Max allowed Deviation Hz
-30	661.800000	661.796850	-0.0004760	0.005	-3150.000000	33090
-20	661.800000	661.800203	0.0000307	0.005	203.000000	33090
-10	661.800000	661.801373	0.0002075	0.005	1373.000000	33090
0	661.800000	661.801883	0.0002845	0.005	1883.000000	33090
10	661.800000	661.801686	0.0002548	0.005	1686.000000	33090
20	661.800000	661.800500	0.0000756	0.005	500.000000	33090
30	661.800000	661.799309	-0.0001044	0.005	-691.000000	33090
40	661.800000	661.789882	-0.0015289	0.005	-10118.200000	33090
50	661.800000	661.797327	-0.0004039	0.005	-2673.000000	33090

Checked By:

Craig M. Dinsmore



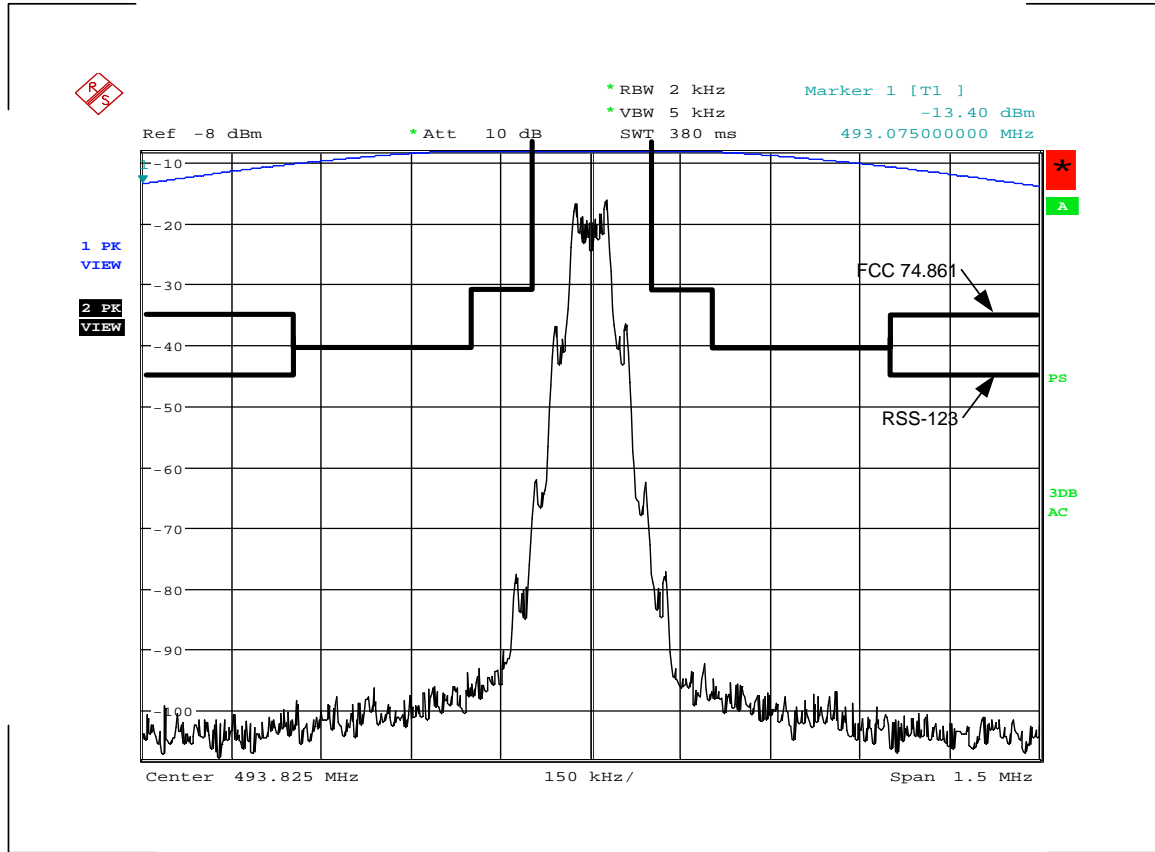


Date: 3.FEB.2012 16:16:08

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band G4 s/n 4111510150
 TEST MODE : Tx at 493.825MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

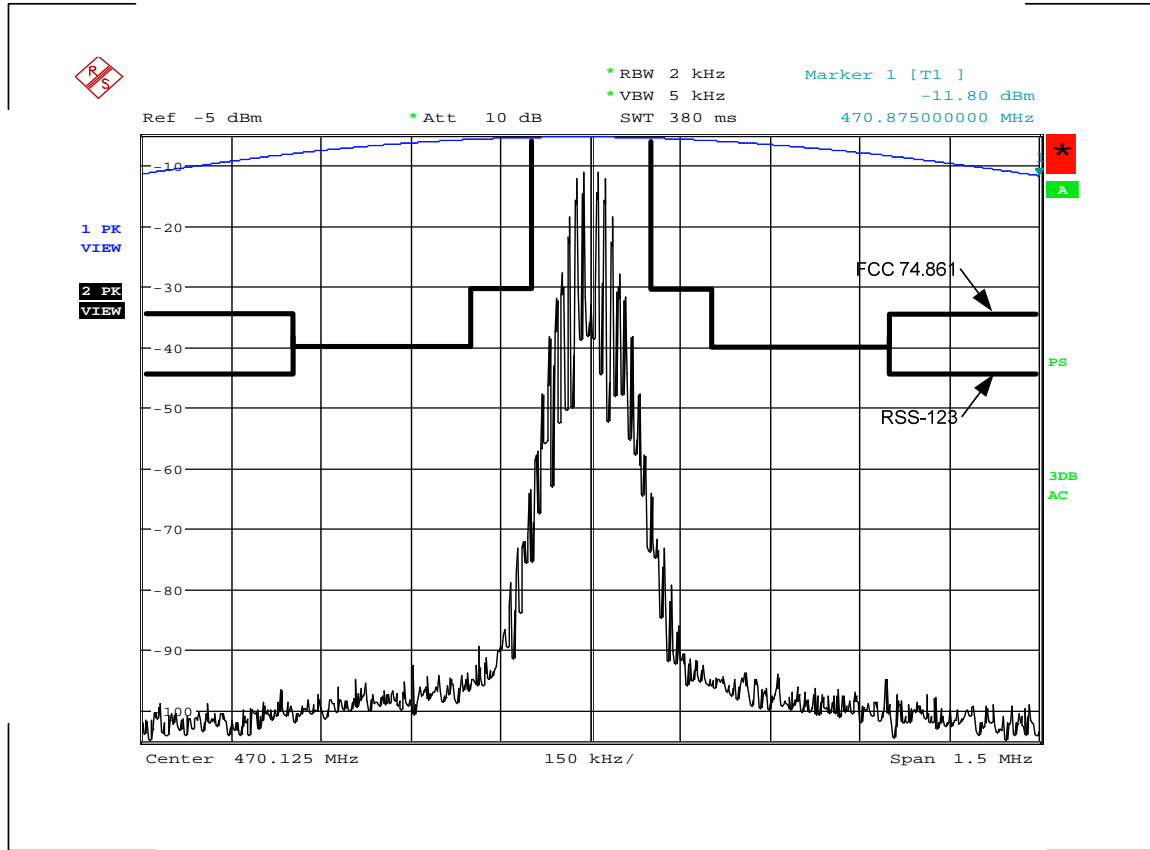


Date: 3.FEB.2012 16:13:35

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band G4 s/n 4111510150
 TEST MODE : Tx at 493.825MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

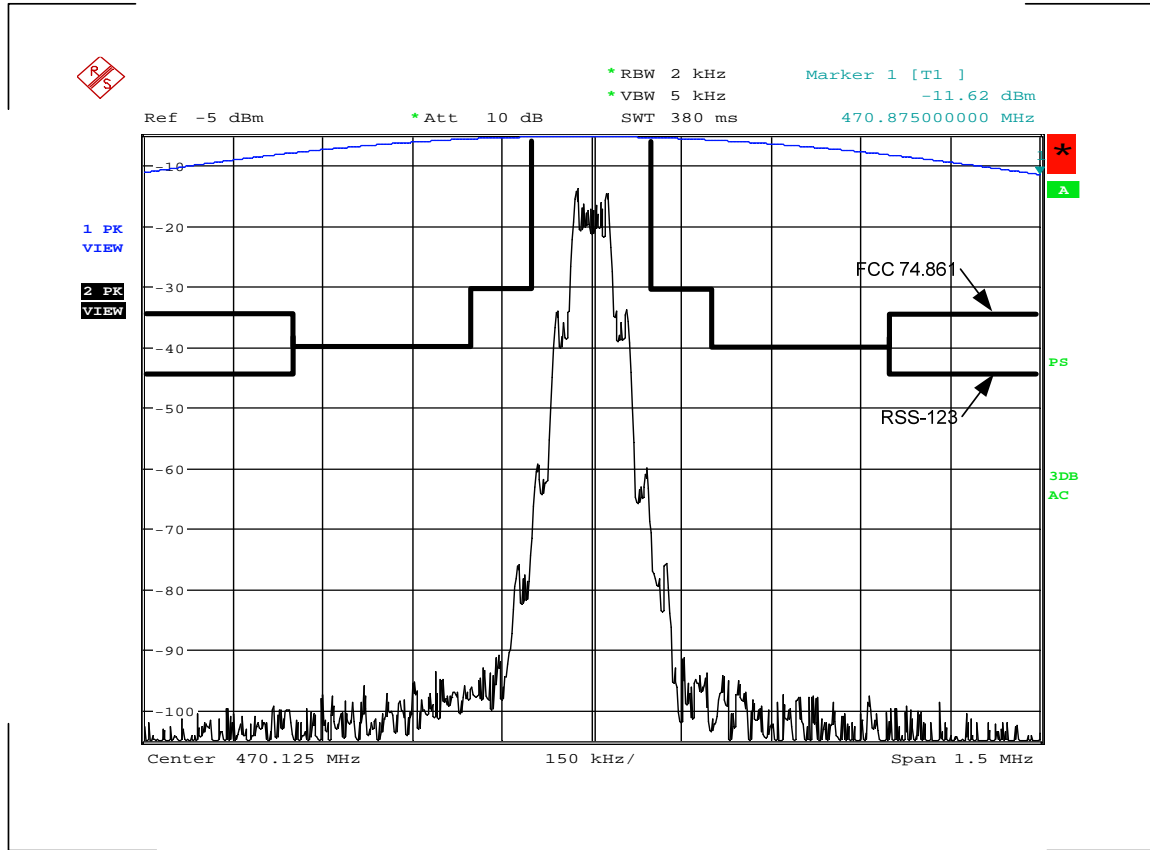


Date: 3.FEB.2012 16:03:52

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band G4 s/n 4111510150
 TEST MODE : Tx at 470.125MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

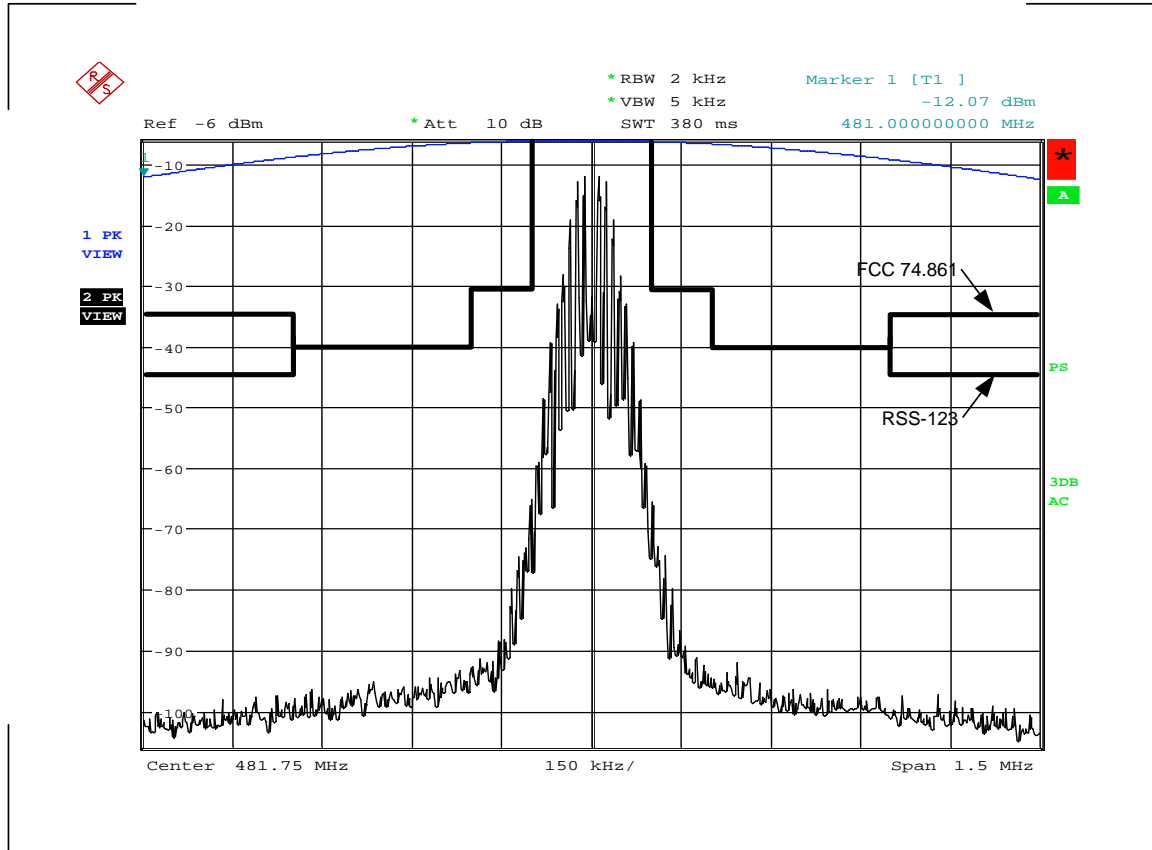


Date: 3.FEB.2012 16:01:00

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band G4 s/n 4111510150
 TEST MODE : Tx at 470.125MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

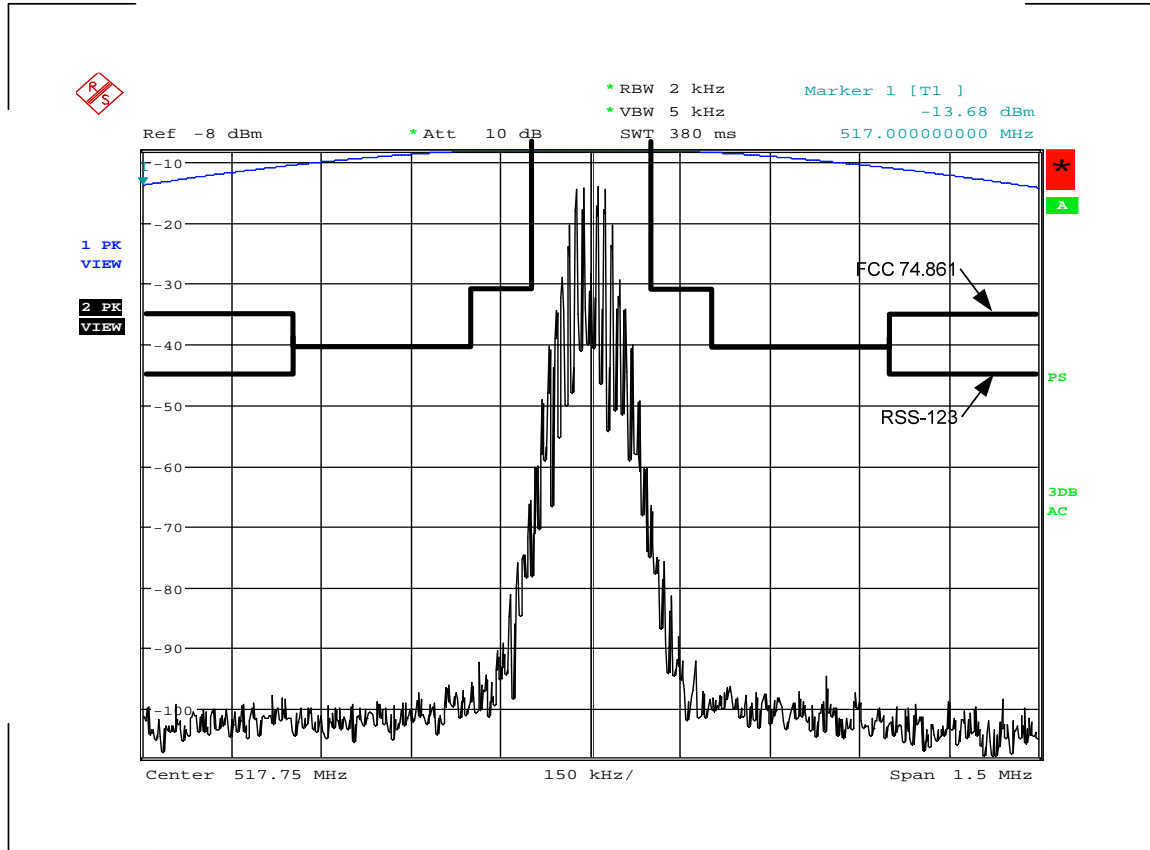


Date: 3.FEB.2012 16:06:47

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band G4 s/n 4111510150
 TEST MODE : Tx at 481.75MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

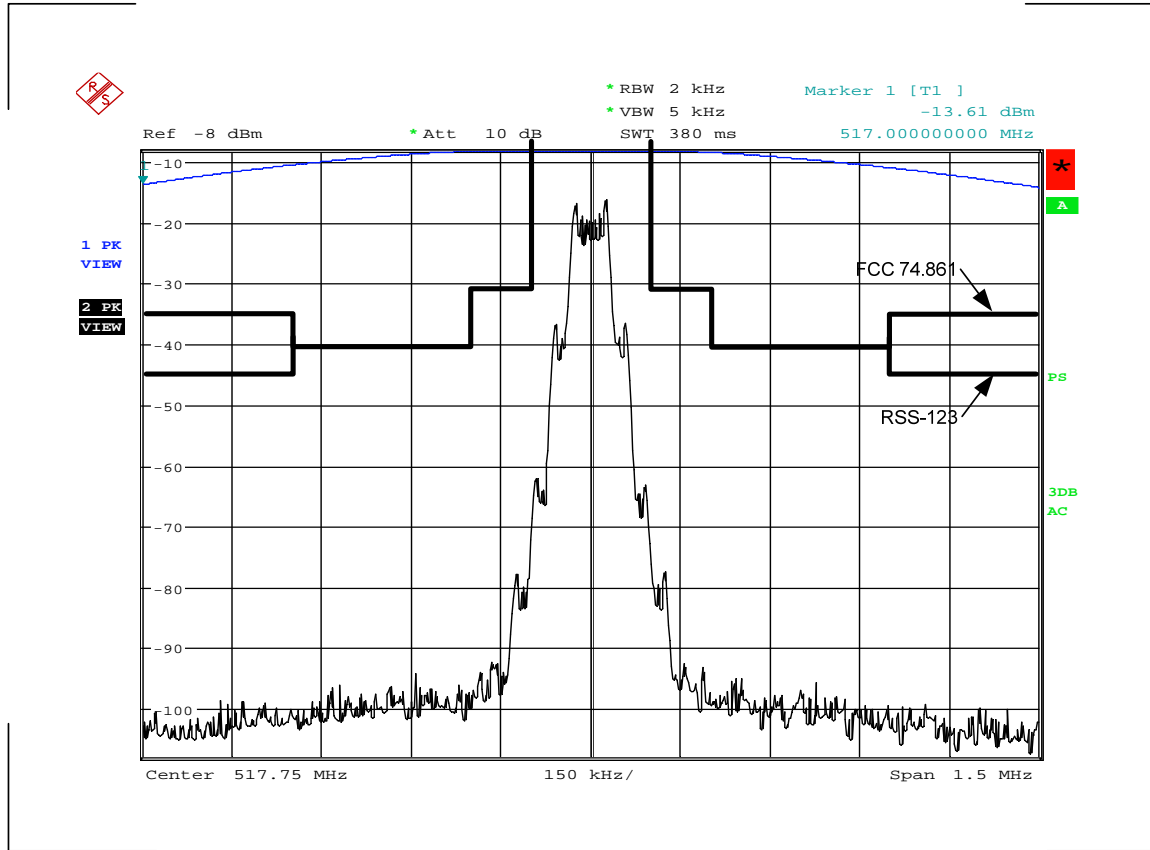


Date: 3.FEB.2012 15:54:39

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band G5 s/n 4111510166
 TEST MODE : Tx at 517.75Hz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

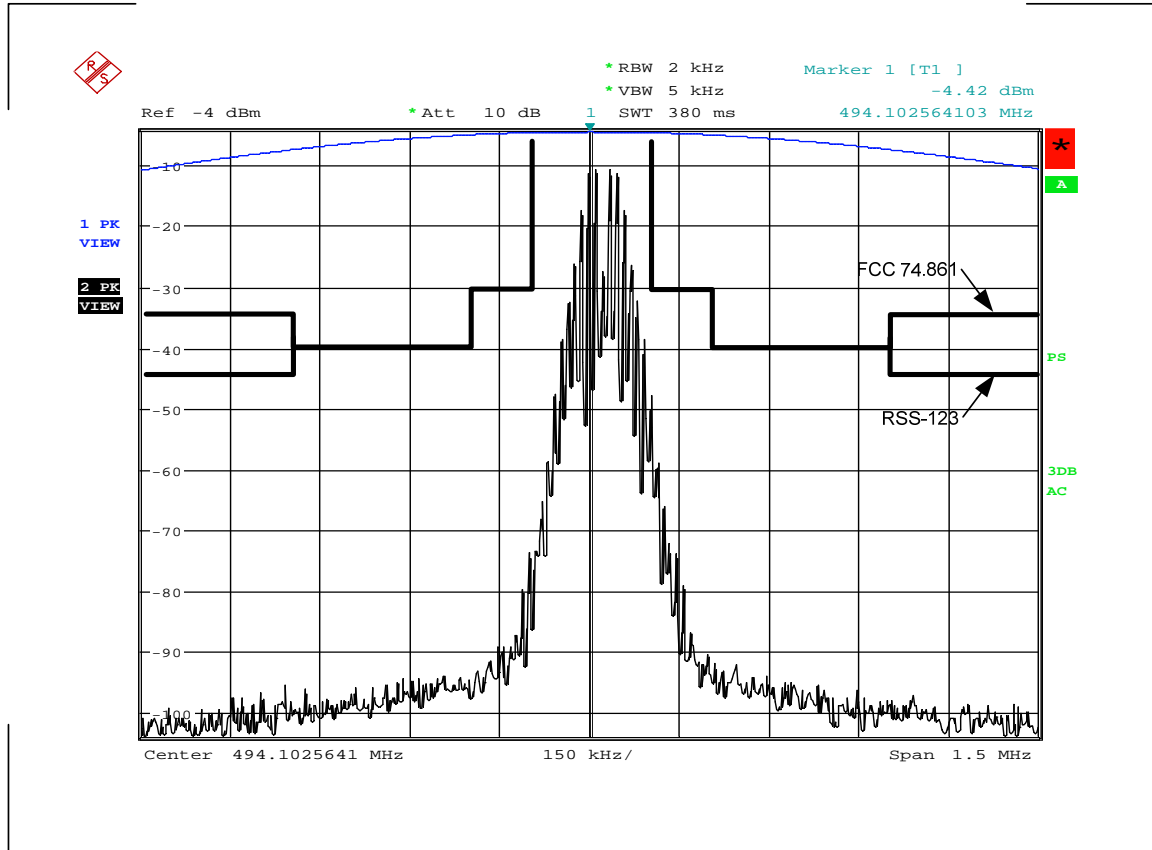


Date: 3.FEB.2012 15:50:10

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band G5 s/n 4111510166
 TEST MODE : Tx at 517.75Hz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

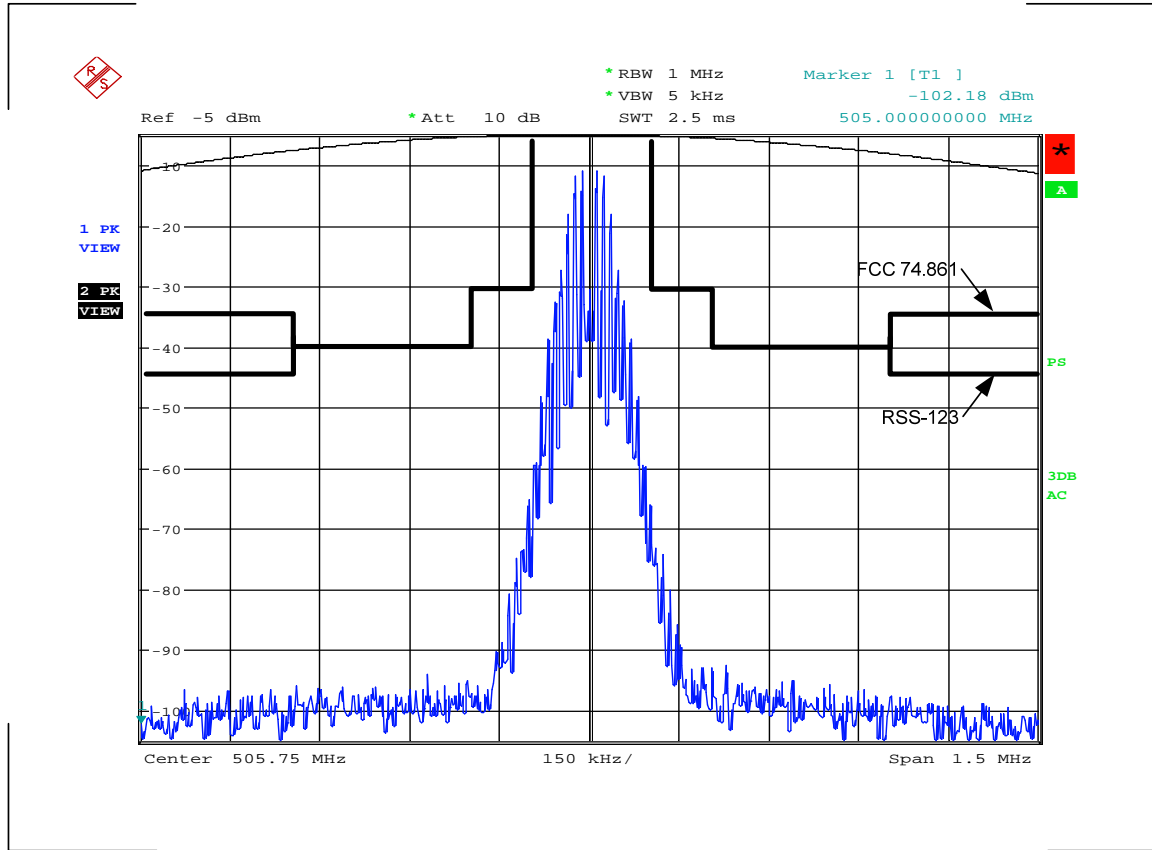


Date: 3.FEB.2012 15:03:01

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band G5 s/n 4111510166
 TEST MODE : Tx at 494.125Hz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

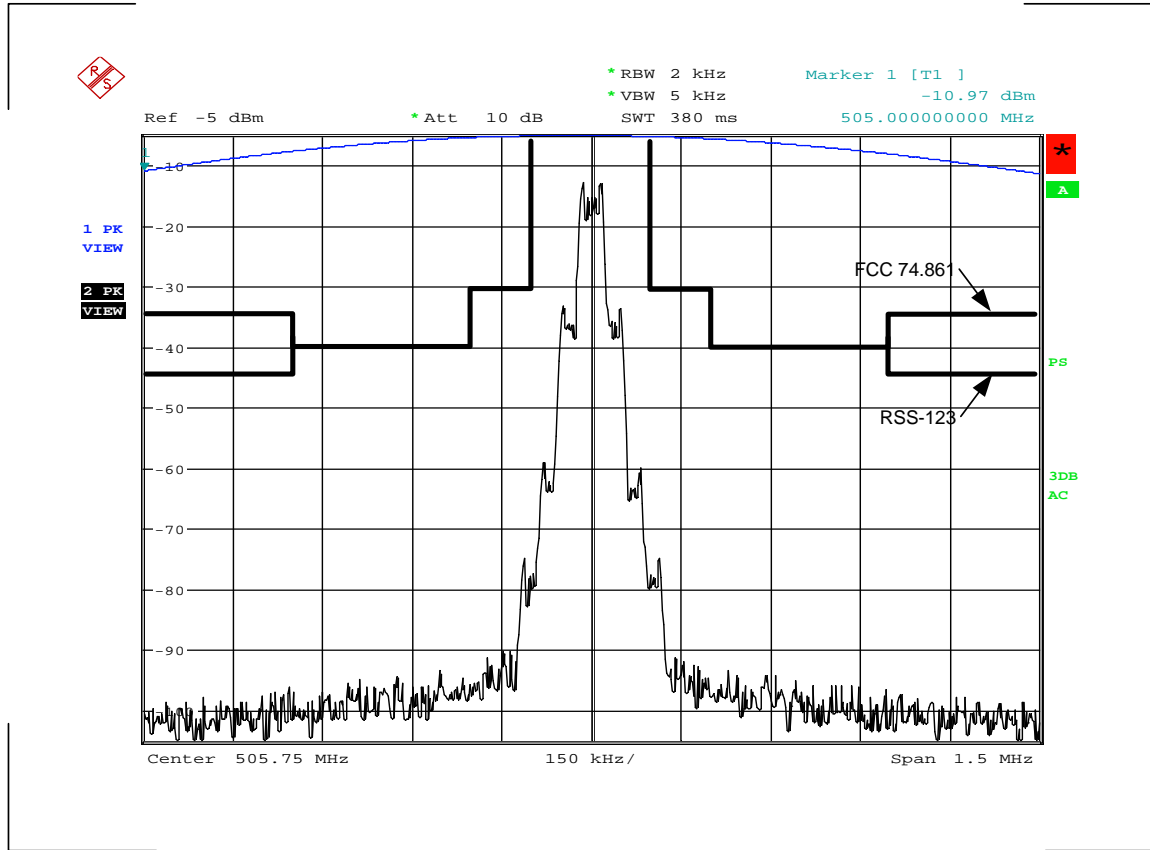


Date: 3.FEB.2012 15:44:23

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band G5 s/n 4111510166
 TEST MODE : Tx at 505.75Hz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

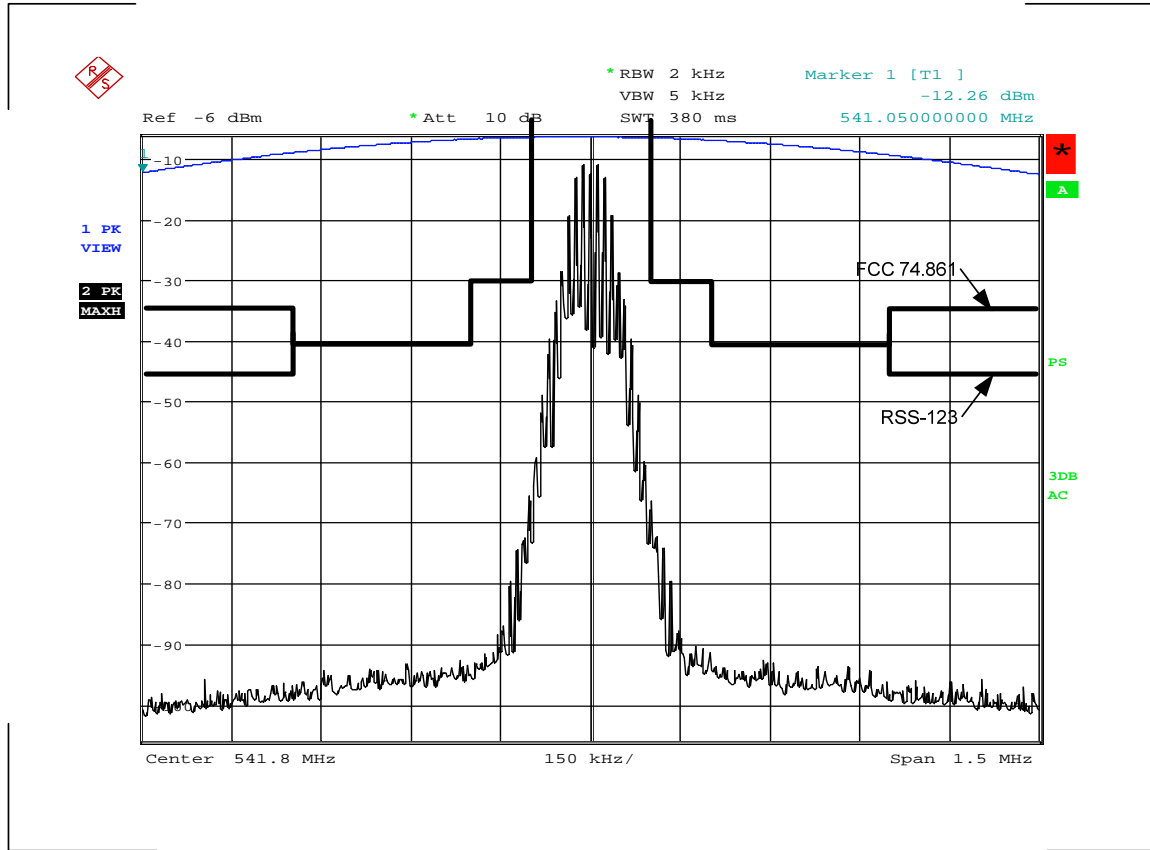


Date: 3.FEB.2012 15:47:08

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band G5 s/n 4111510166
 TEST MODE : Tx at 505.75Hz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

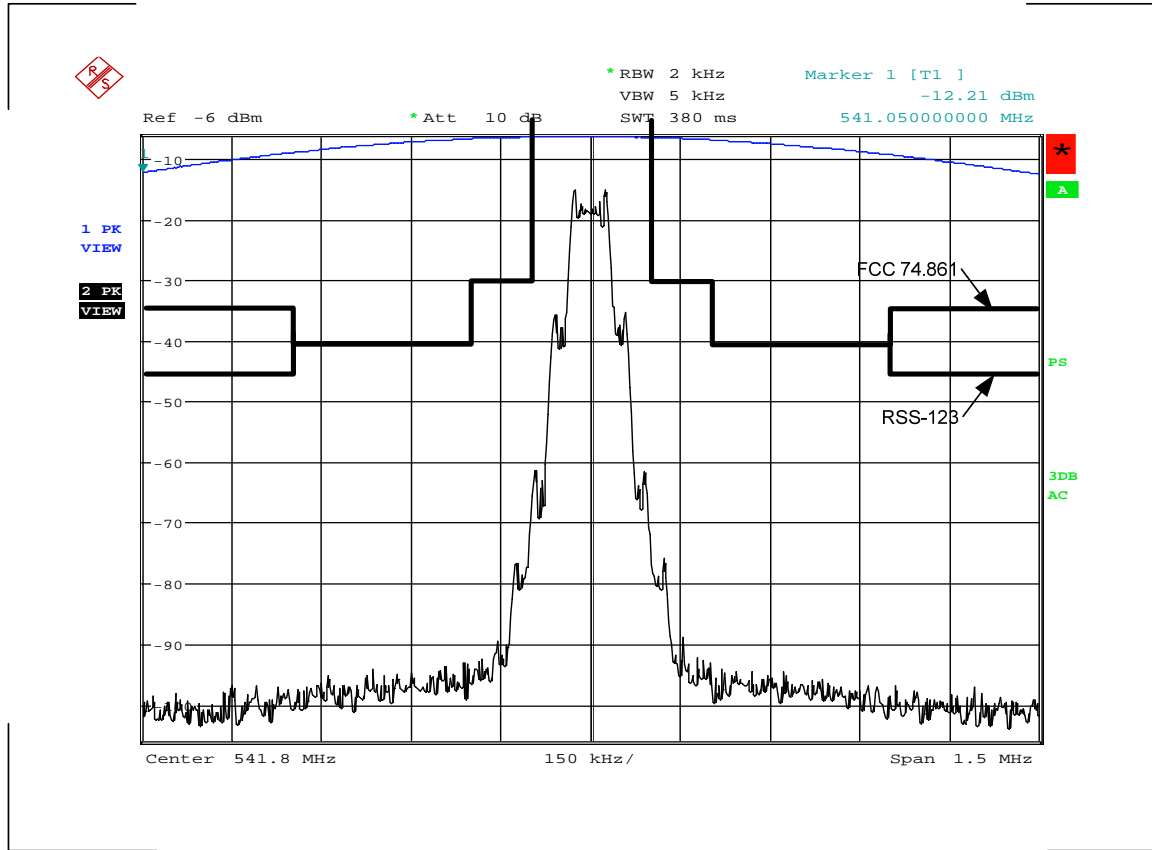


Date: 3.FEB.2012 16:37:42

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band H5 s/n 4111510030
 TEST MODE : Tx at 541.8MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

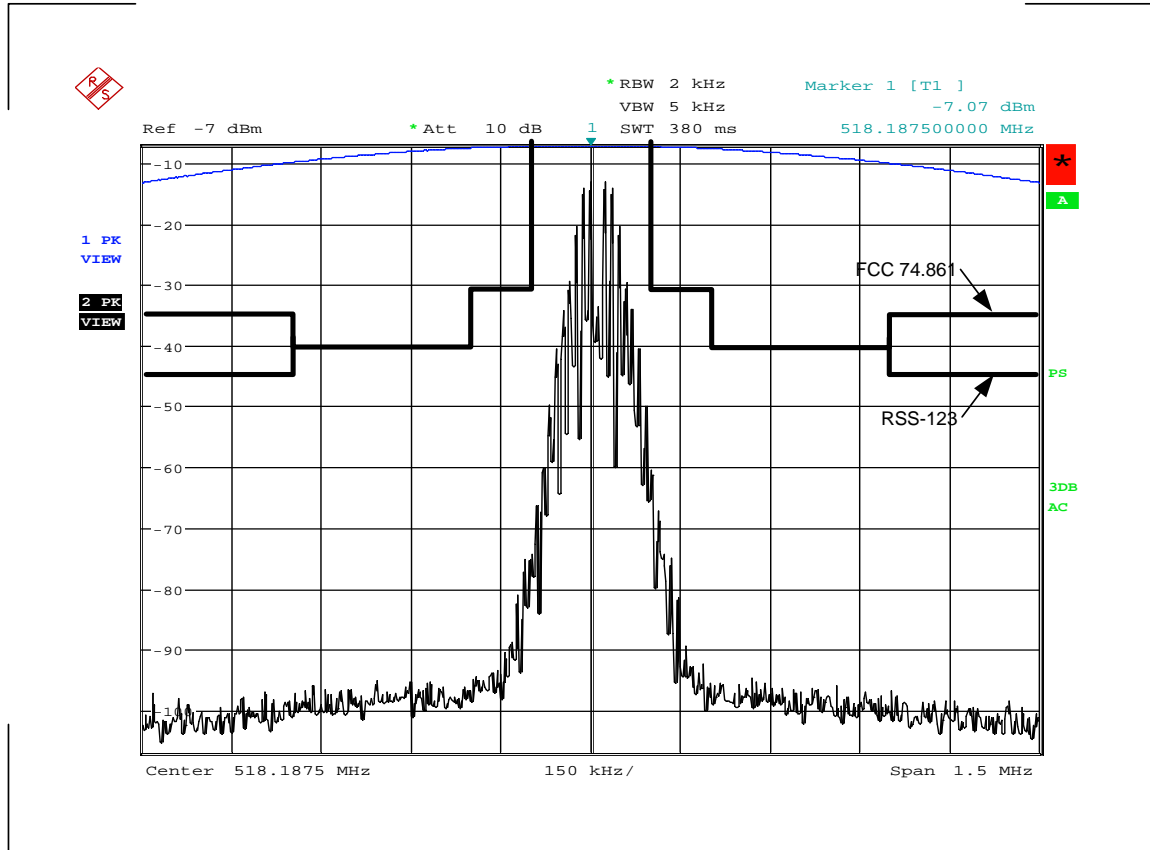


Date: 3.FEB.2012 16:35:07

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band H5 s/n 4111510030
 TEST MODE : Tx at 541.8MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

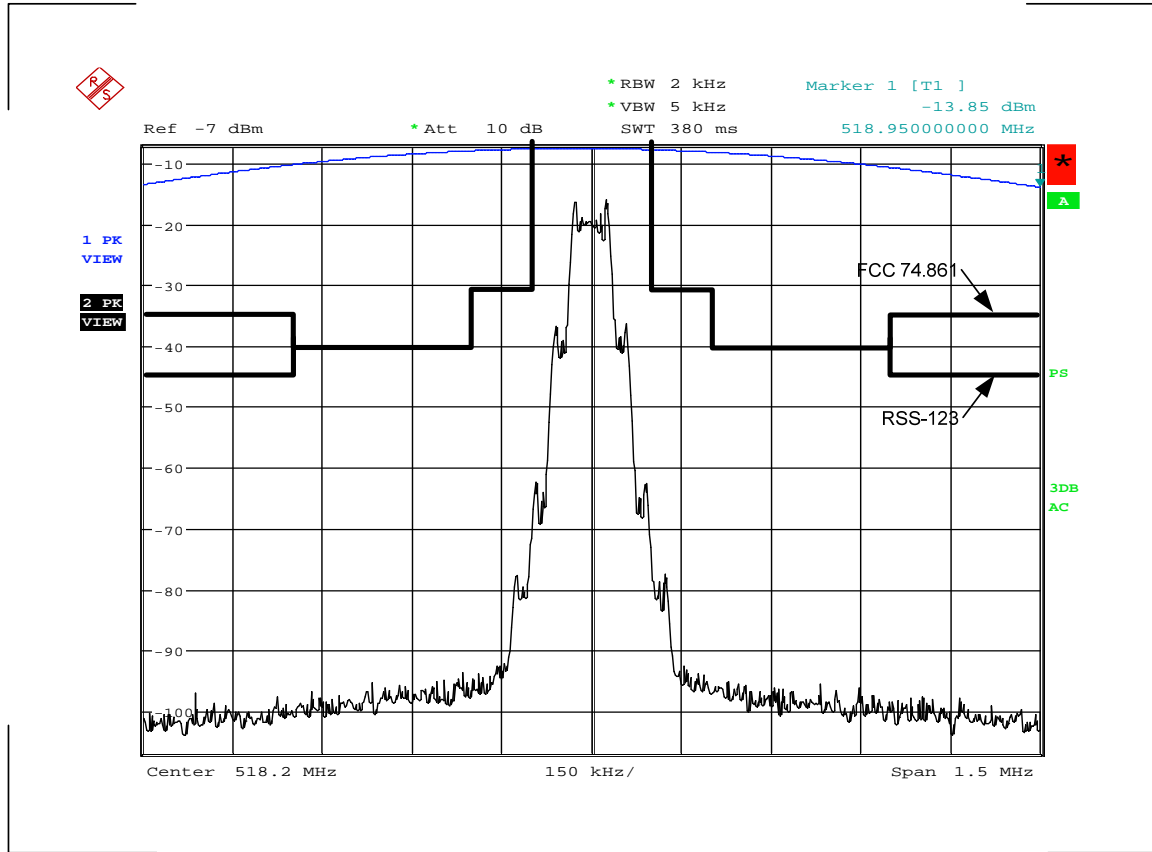


Date: 3.FEB.2012 16:27:36

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band H5 s/n 4111510030
 TEST MODE : Tx at 518.2MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

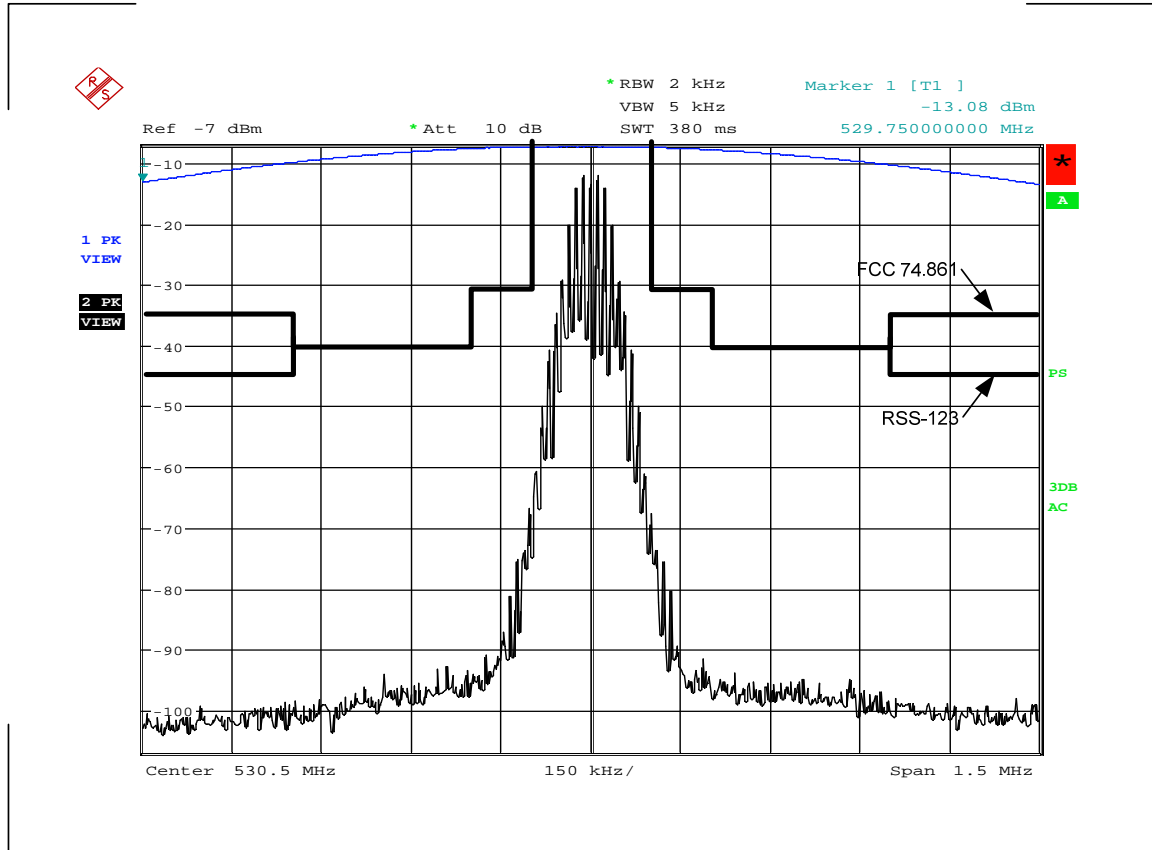


Date: 3.FEB.2012 16:22:17

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band H5 s/n 4111510030
 TEST MODE : Tx at 518.2MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

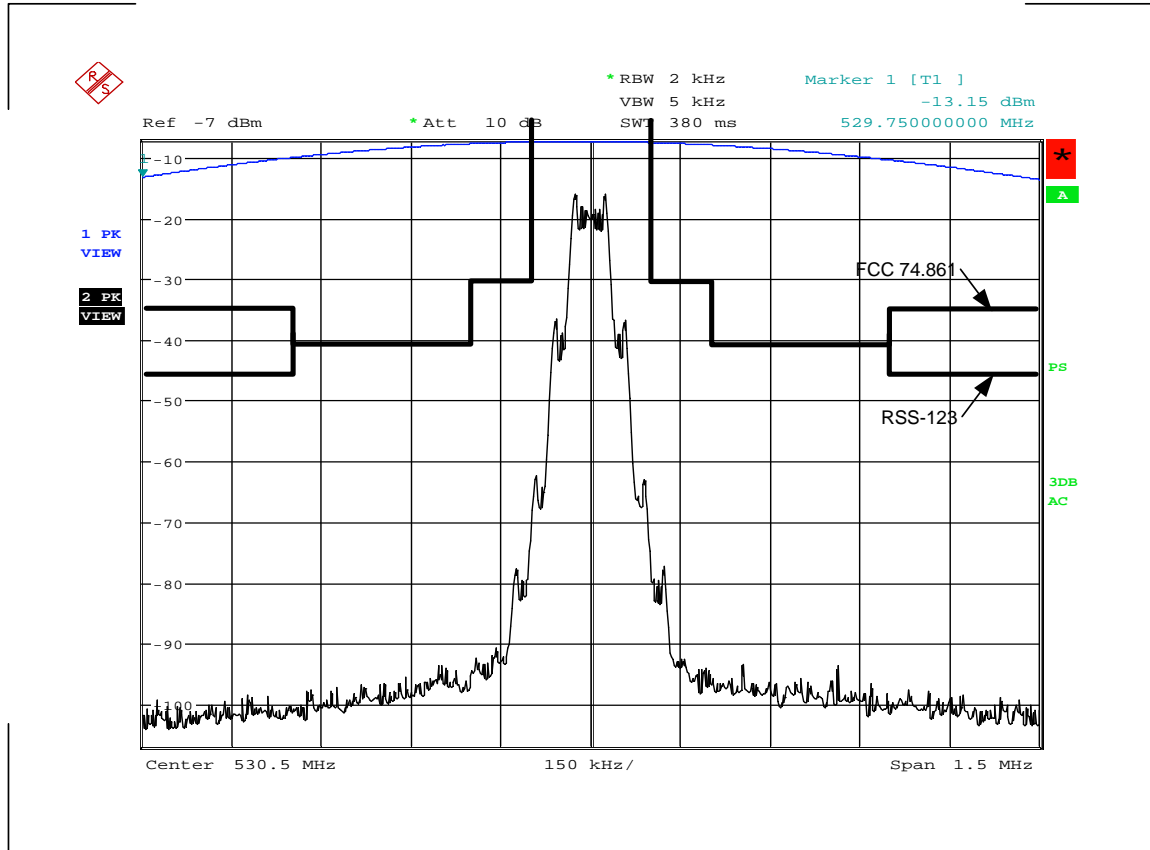


Date: 3.FEB.2012 16:30:20

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band H5 s/n 4111510030
 TEST MODE : Tx at 530.5MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

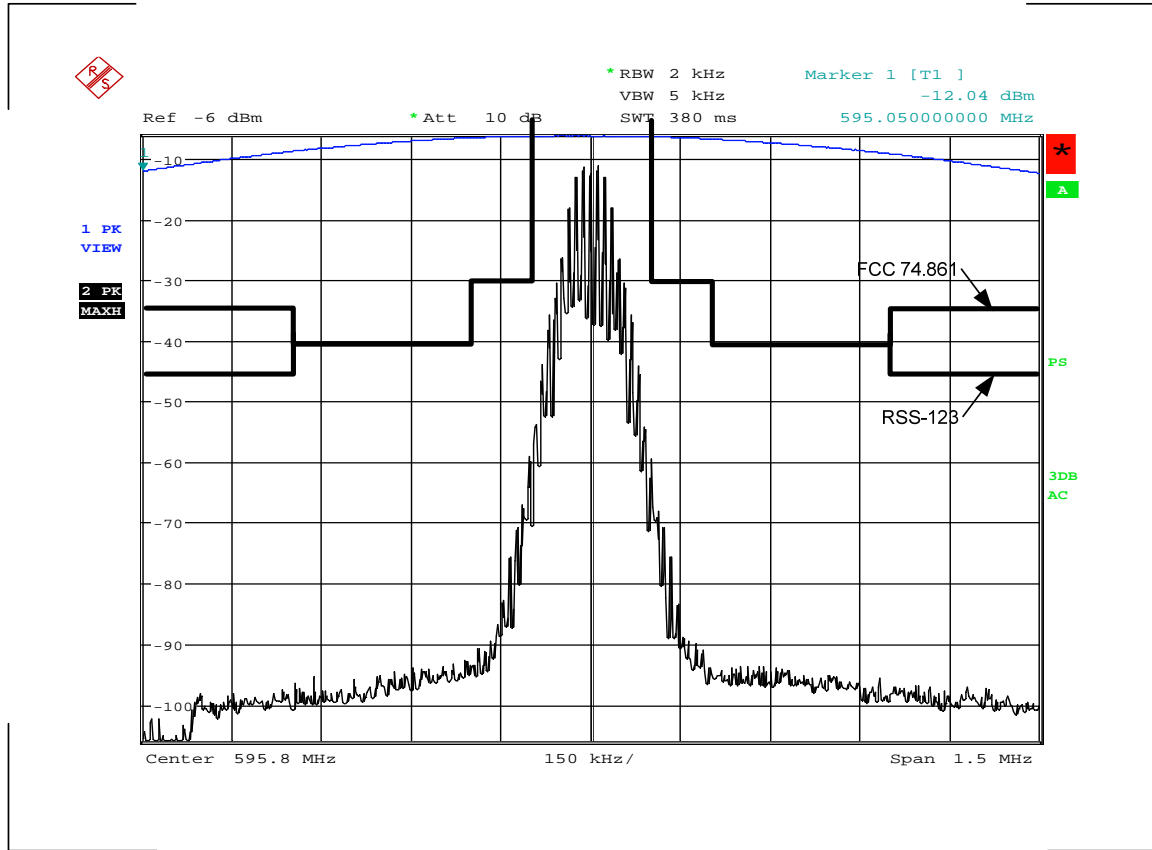


Date: 3.FEB.2012 16:32:29

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band H5 s/n 4111510030
 TEST MODE : Tx at 530.5MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

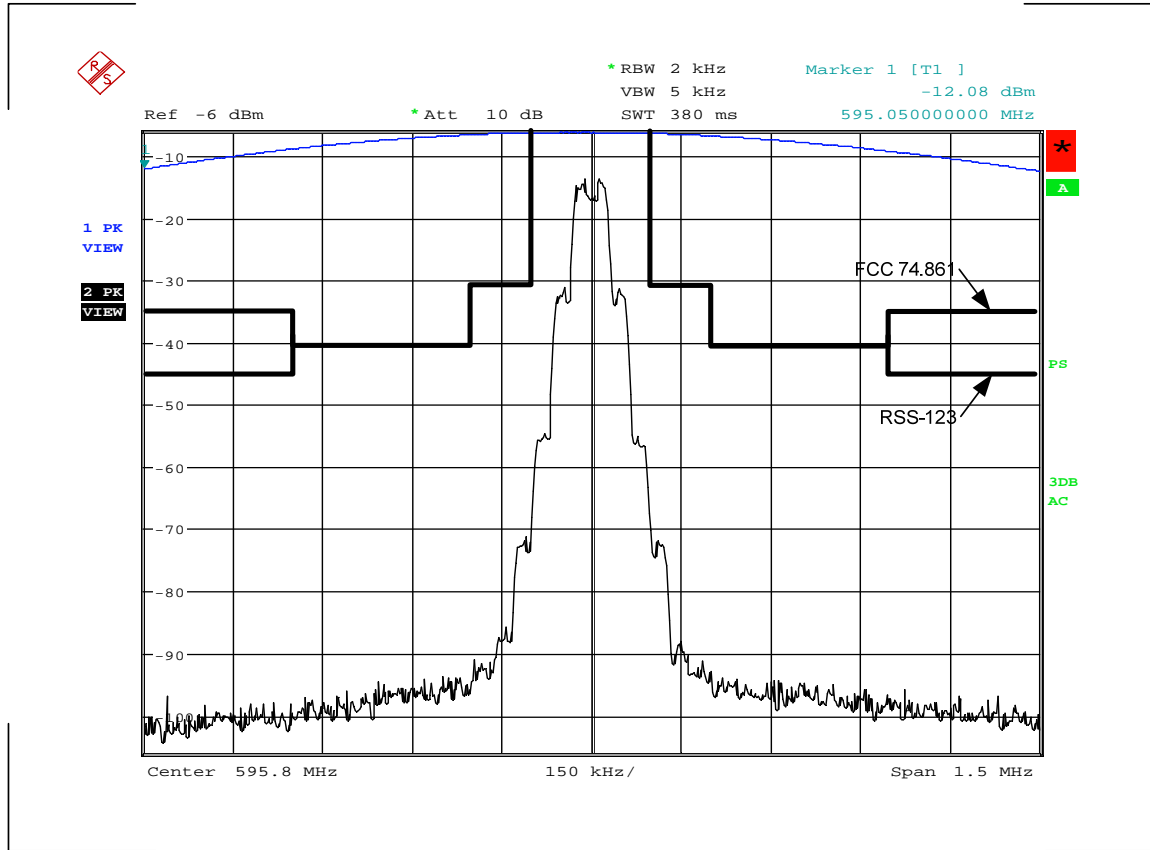


Date: 3.FEB.2012 16:52:16

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band J3 s/n 4111510060
 TEST MODE : Tx at 595.8MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

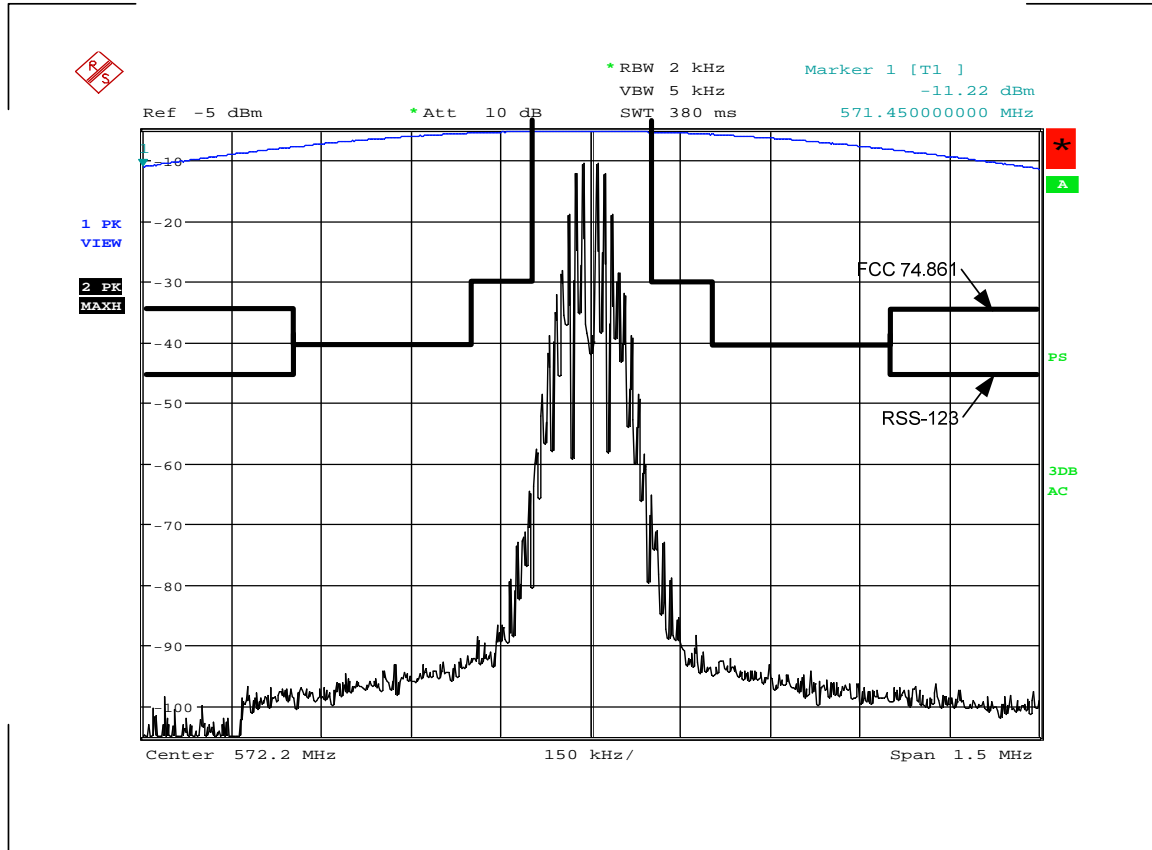


Date: 3.FEB.2012 16:54:34

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band J3 s/n 4111510060
 TEST MODE : Tx at 595.8MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

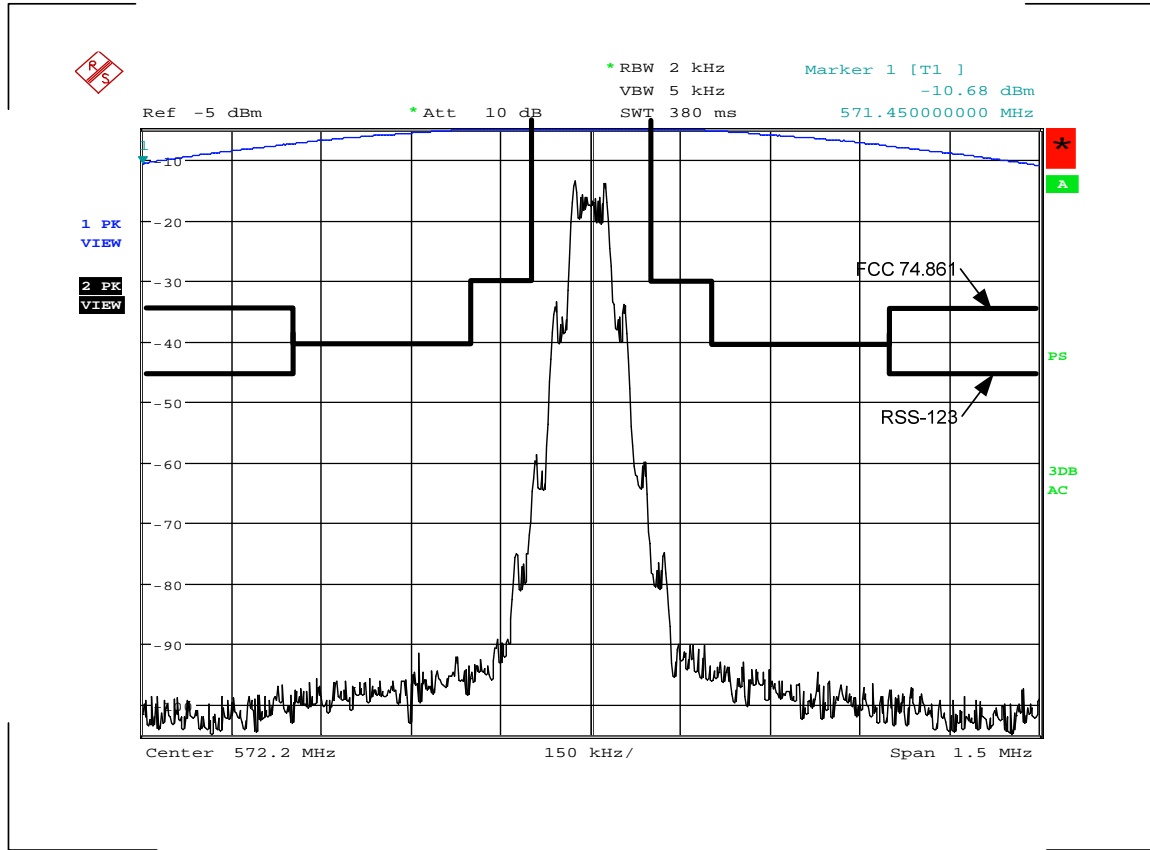


Date: 3.FEB.2012 16:42:05

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band J3 s/n 4111510060
 TEST MODE : Tx at 572.2MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

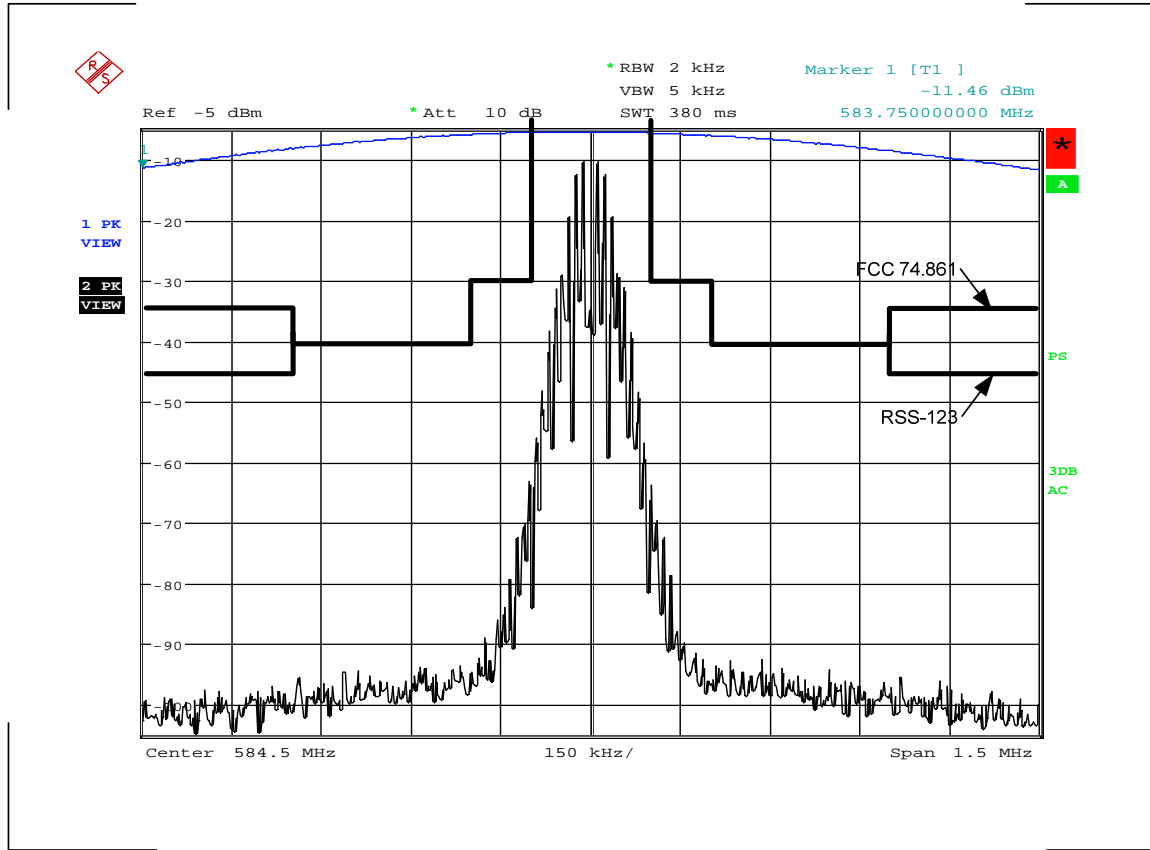


Date: 3.FEB.2012 16:44:42

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band J3 s/n 4111510060
 TEST MODE : Tx at 572.2MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

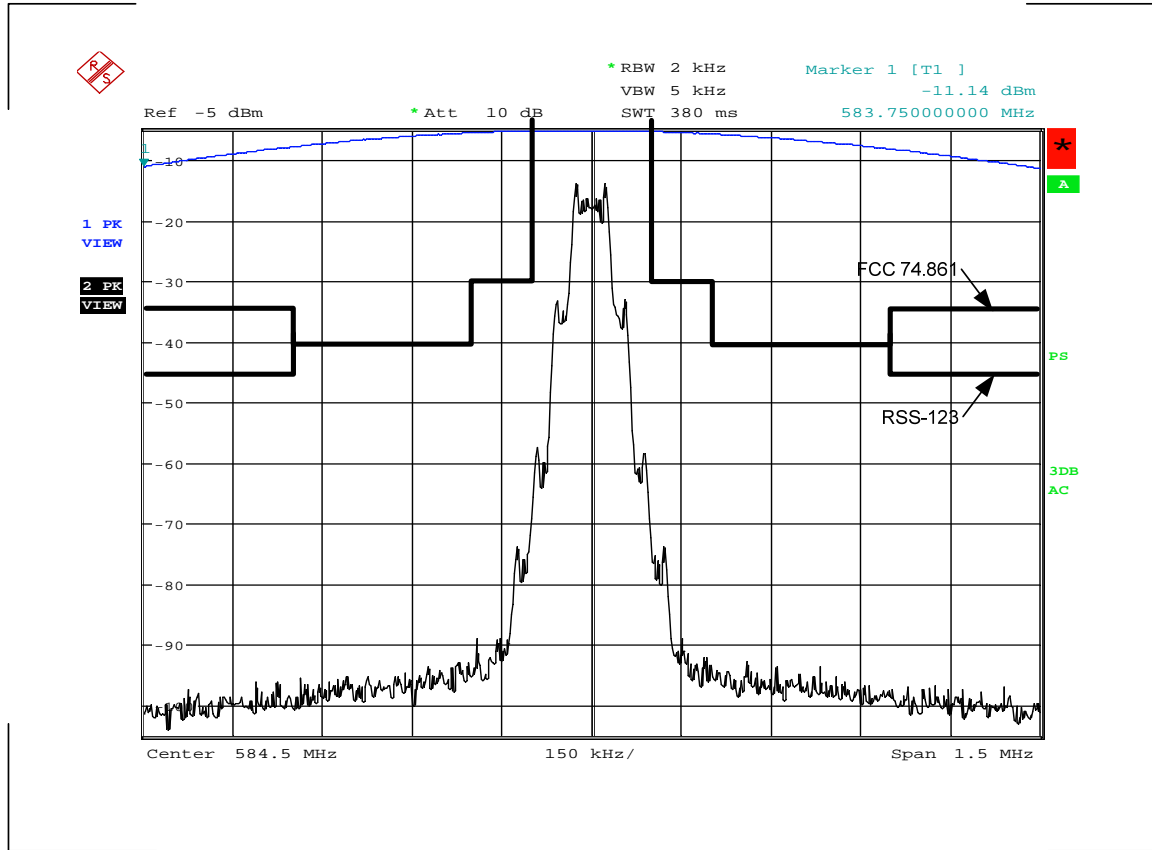


Date: 3.FEB.2012 16:49:56

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band J3 s/n 4111510060
 TEST MODE : Tx at 584.5MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

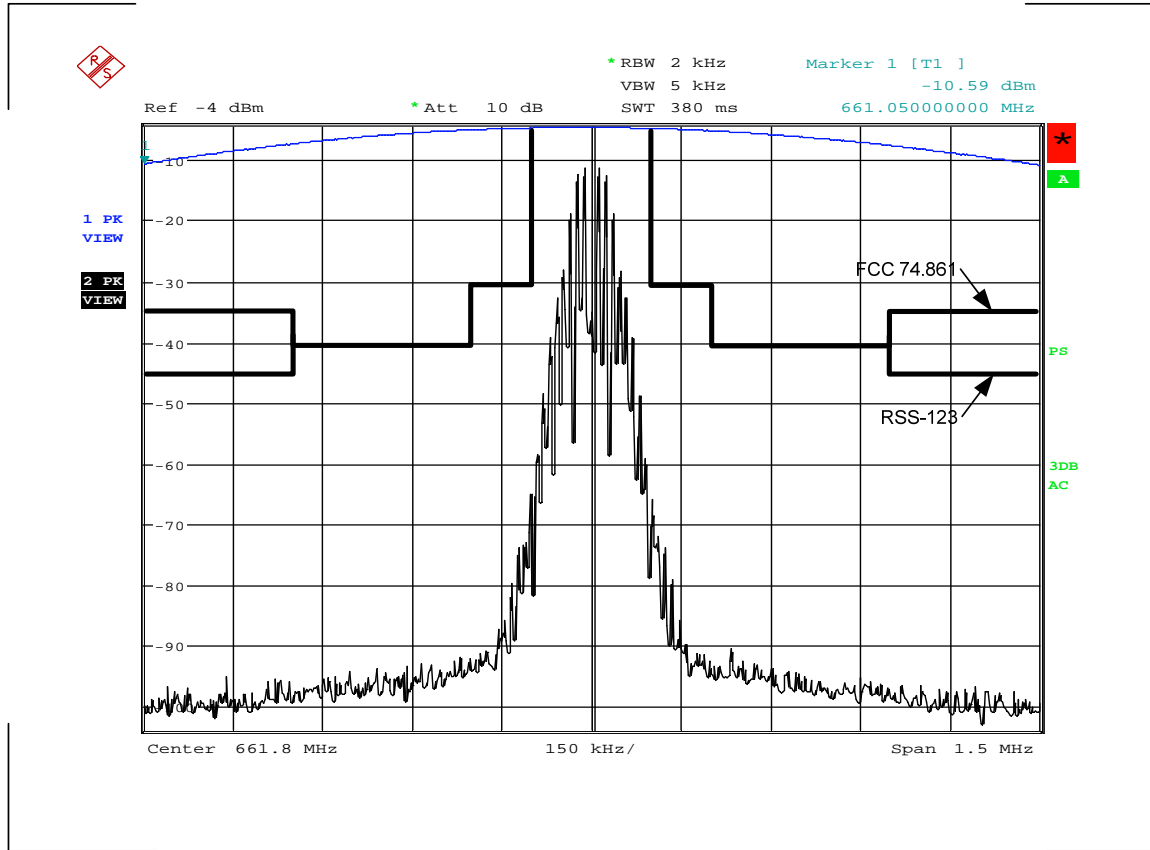


Date: 3.FEB.2012 16:47:27

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band J3 s/n 4111510060
 TEST MODE : Tx at 584.5MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

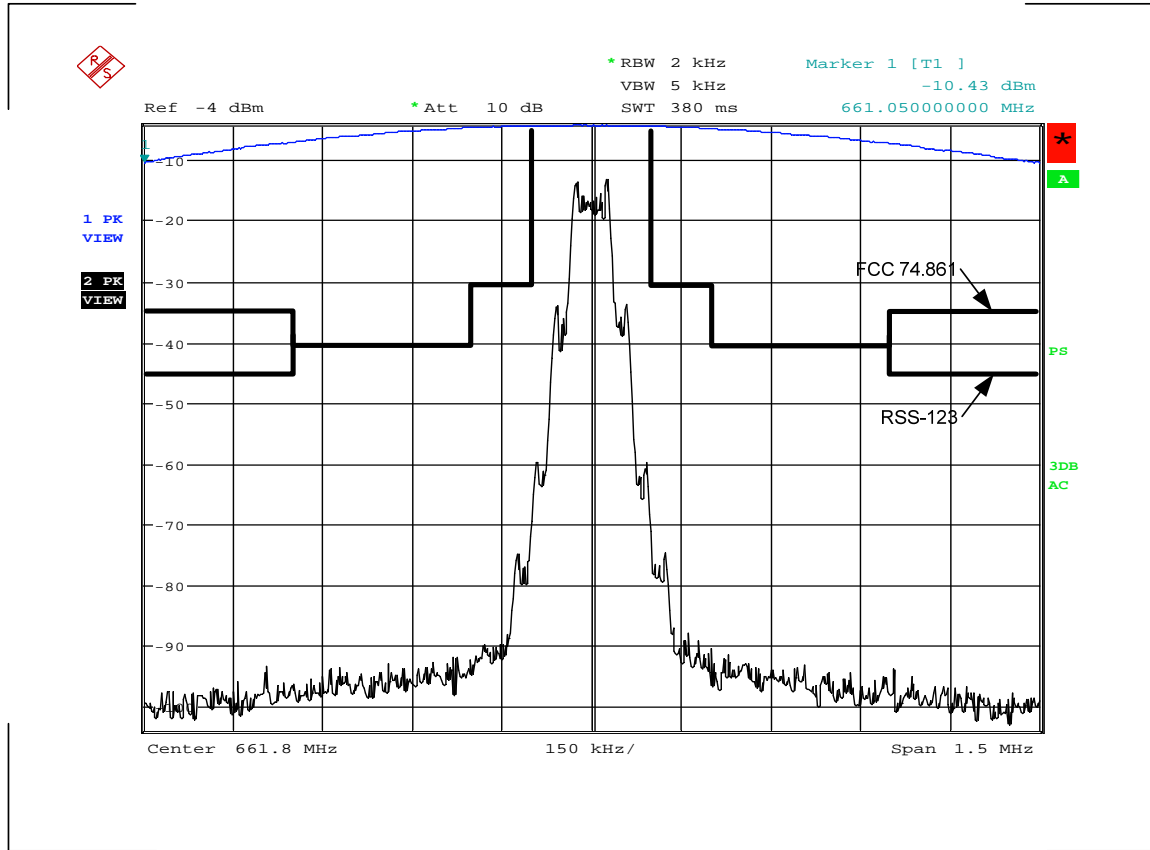


Date: 3.FEB.2012 17:16:29

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band L4 s/n 4111510069
 TEST MODE : Tx at 661.8MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

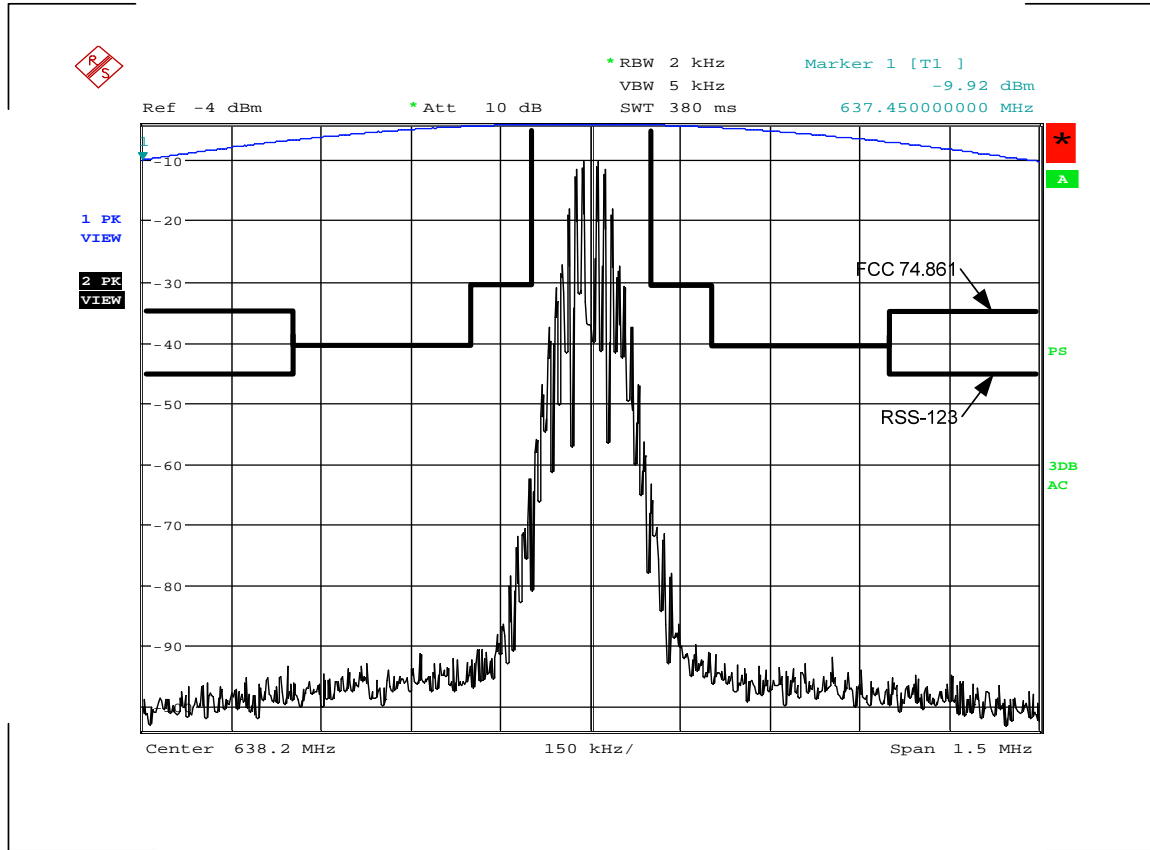


Date: 3.FEB.2012 17:14:00

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band L4 s/n 4111510069
 TEST MODE : Tx at 661.8MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

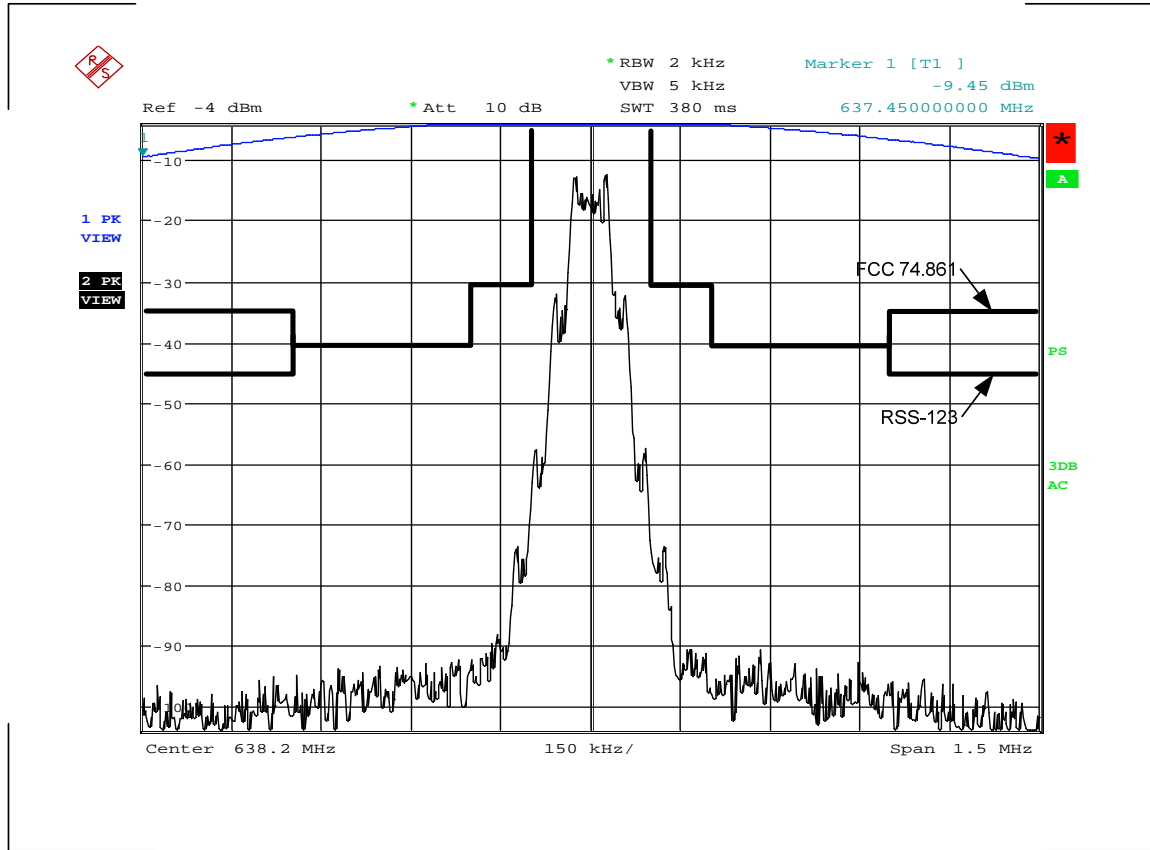
NOTES



IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band L4 s/n 4111510069
 TEST MODE : Tx at 638.2MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 12kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

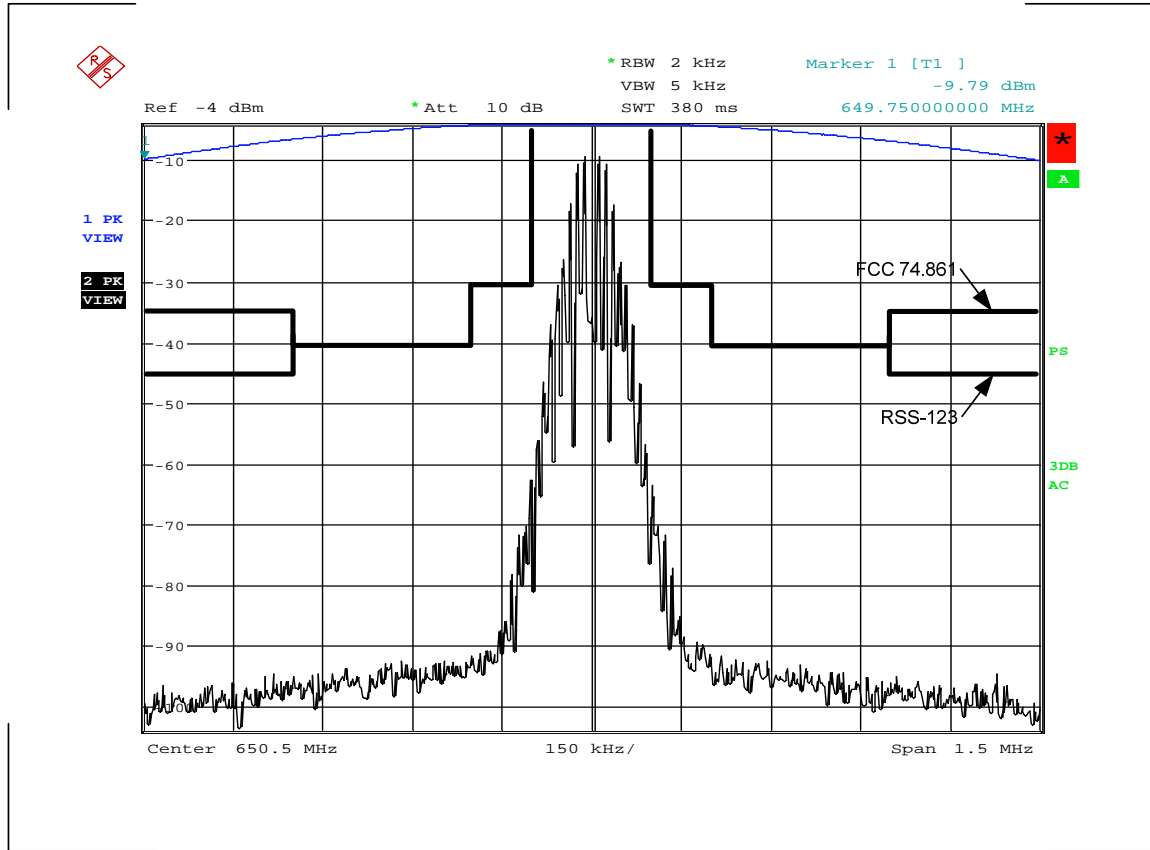


Date: 3.FEB.2012 17:02:28

IC/FCC Occupied Bandwidth

MANUFACTURER : Shure, Inc.
 MODEL NUMBER : FP3
 SERIAL NUMBER : Band L4 s/n 4111510069
 TEST MODE : Tx at 638.2MHz
 TEST POWER : 30mW nominal
 NOTES : Modulation at 2.5kHz at 16dB over 50%
 EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

NOTES

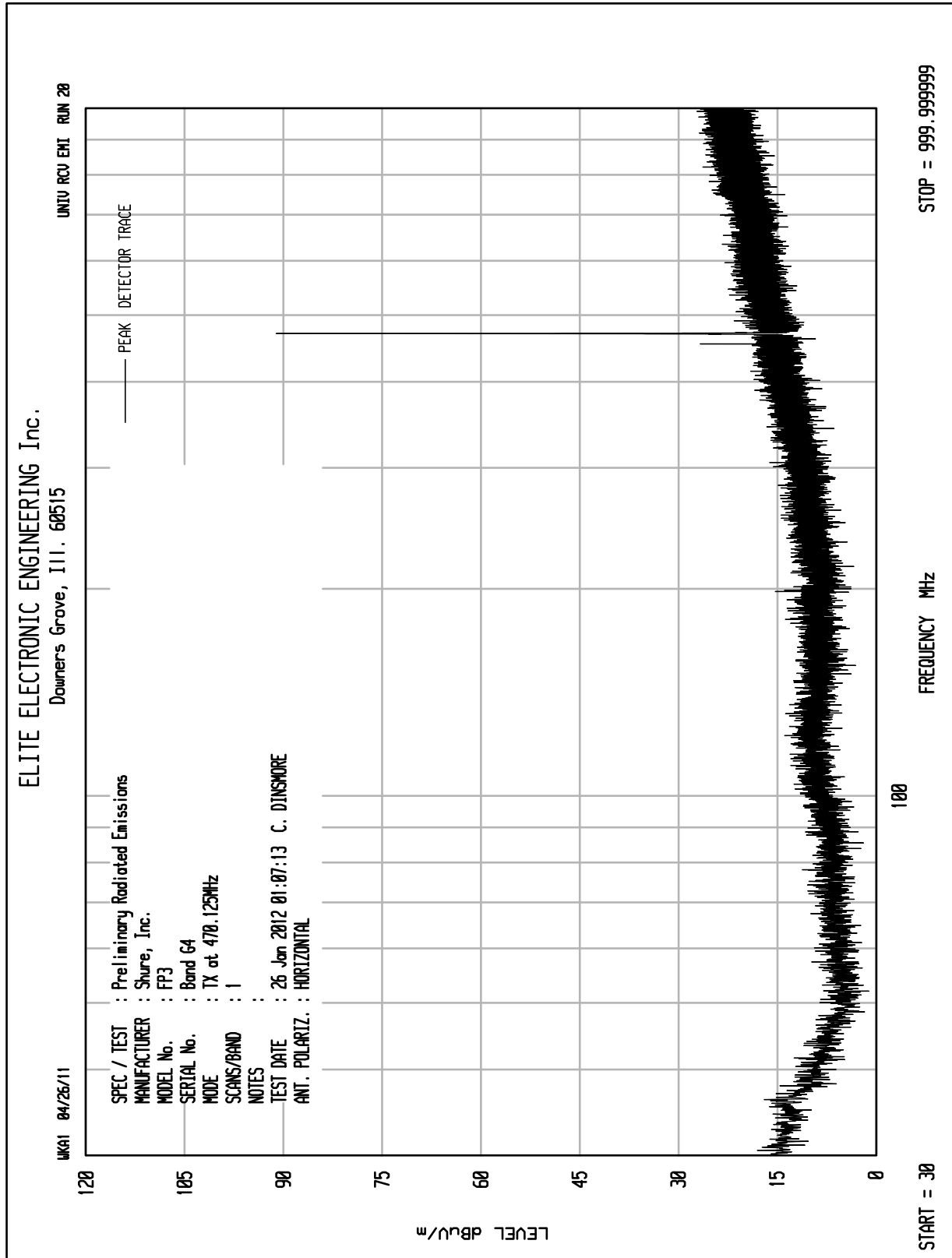


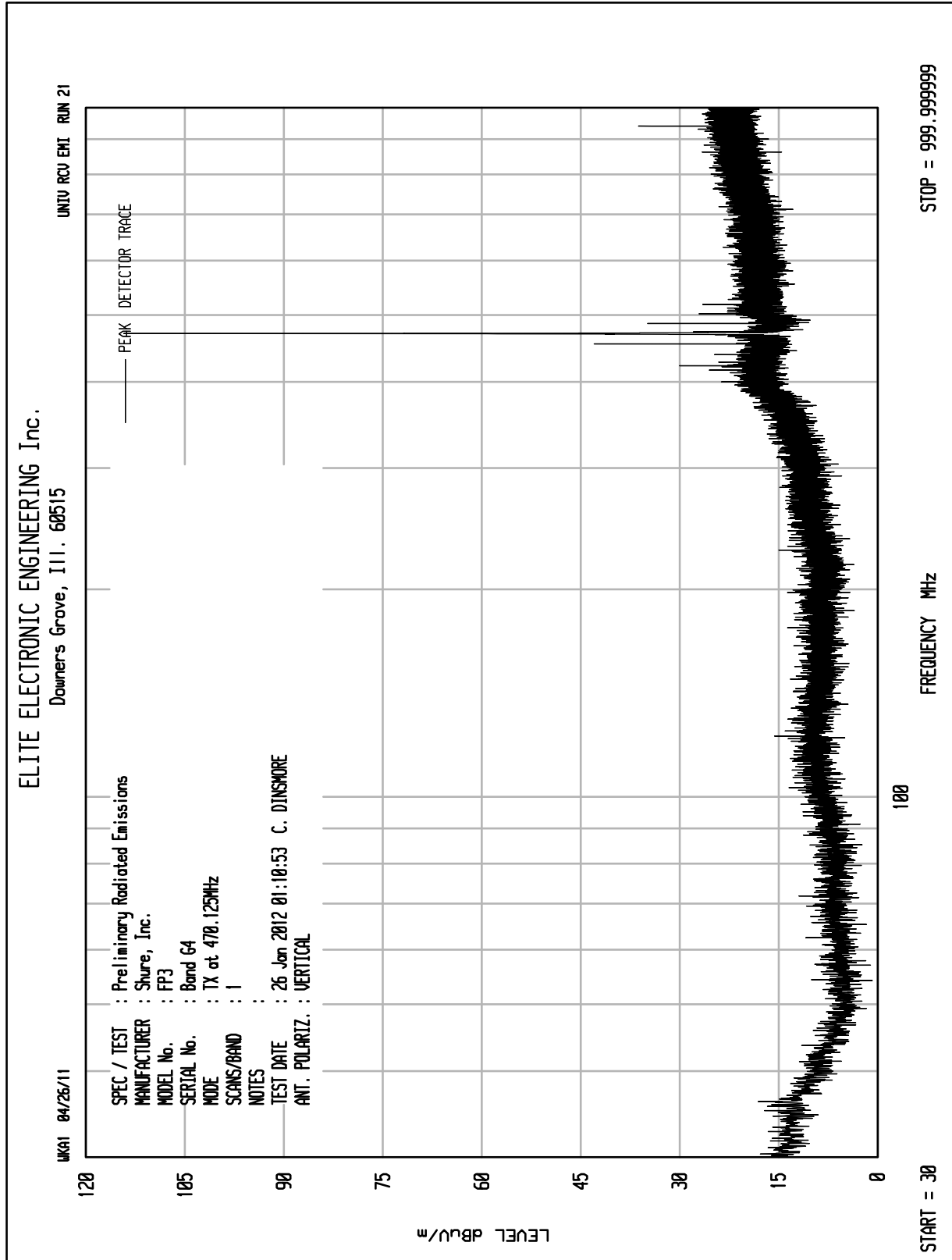
Date: 3.FEB.2012 17:07:32

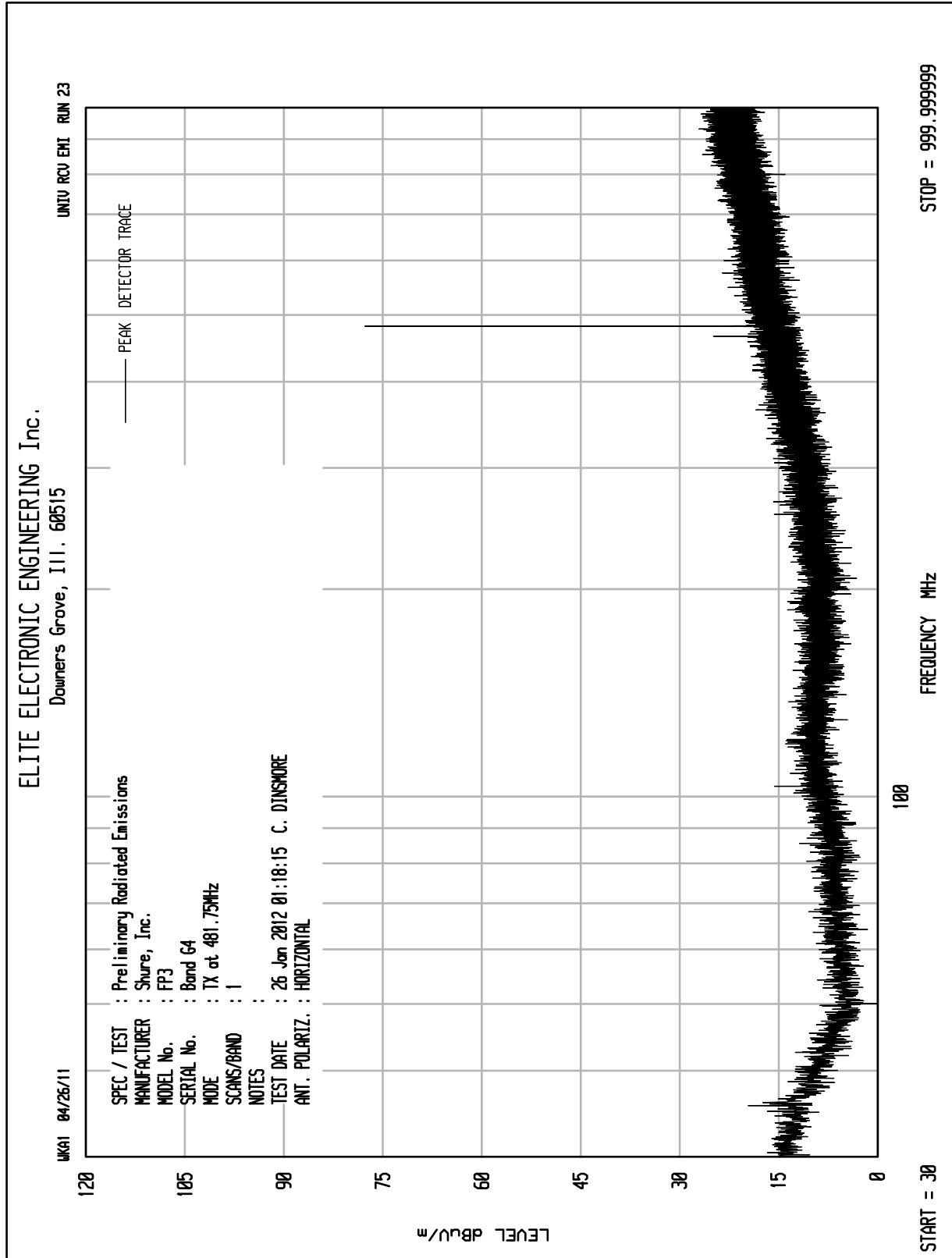
IC/FCC Occupied Bandwidth

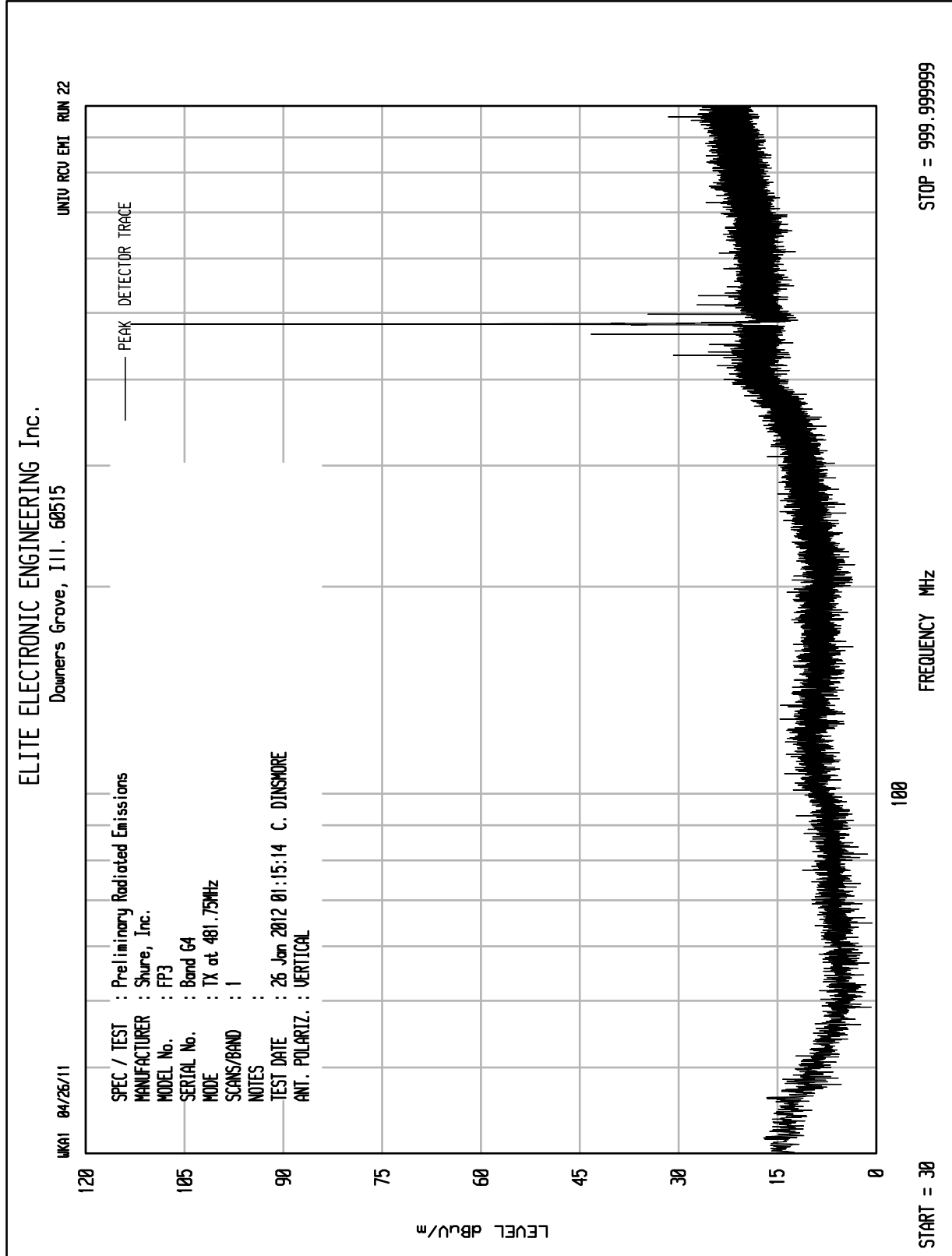
MANUFACTURER : Shure, Inc.
MODEL NUMBER : FP3
SERIAL NUMBER : Band L4 s/n 4111510069
TEST MODE : Tx at 650.5MHz
TEST POWER : 30mW nominal
NOTES : Modulation at 12kHz at 16dB over 50%
EQUIPMENT USED : RBD0, PCN0, TCMD, GWF9, RYE0

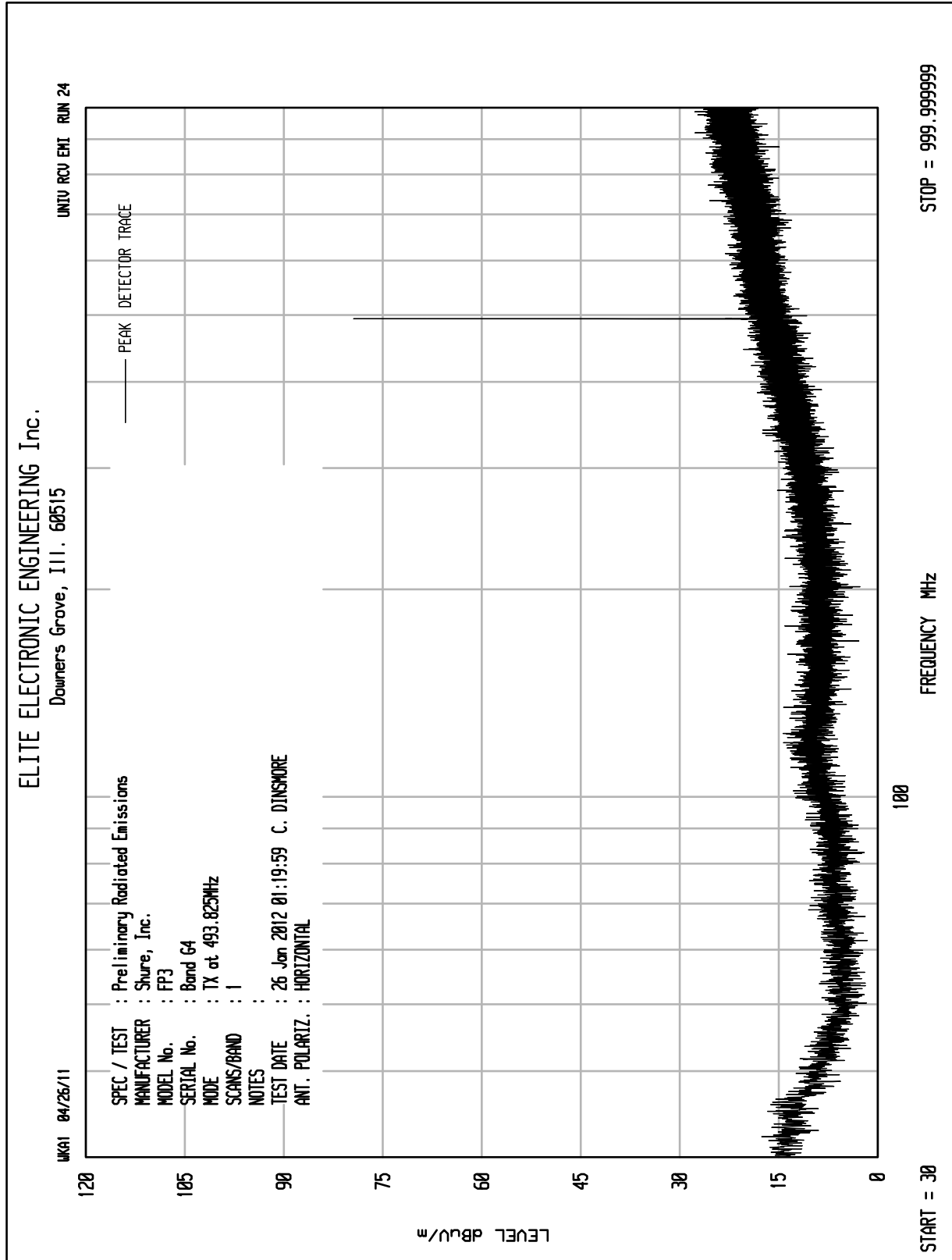
NOTES

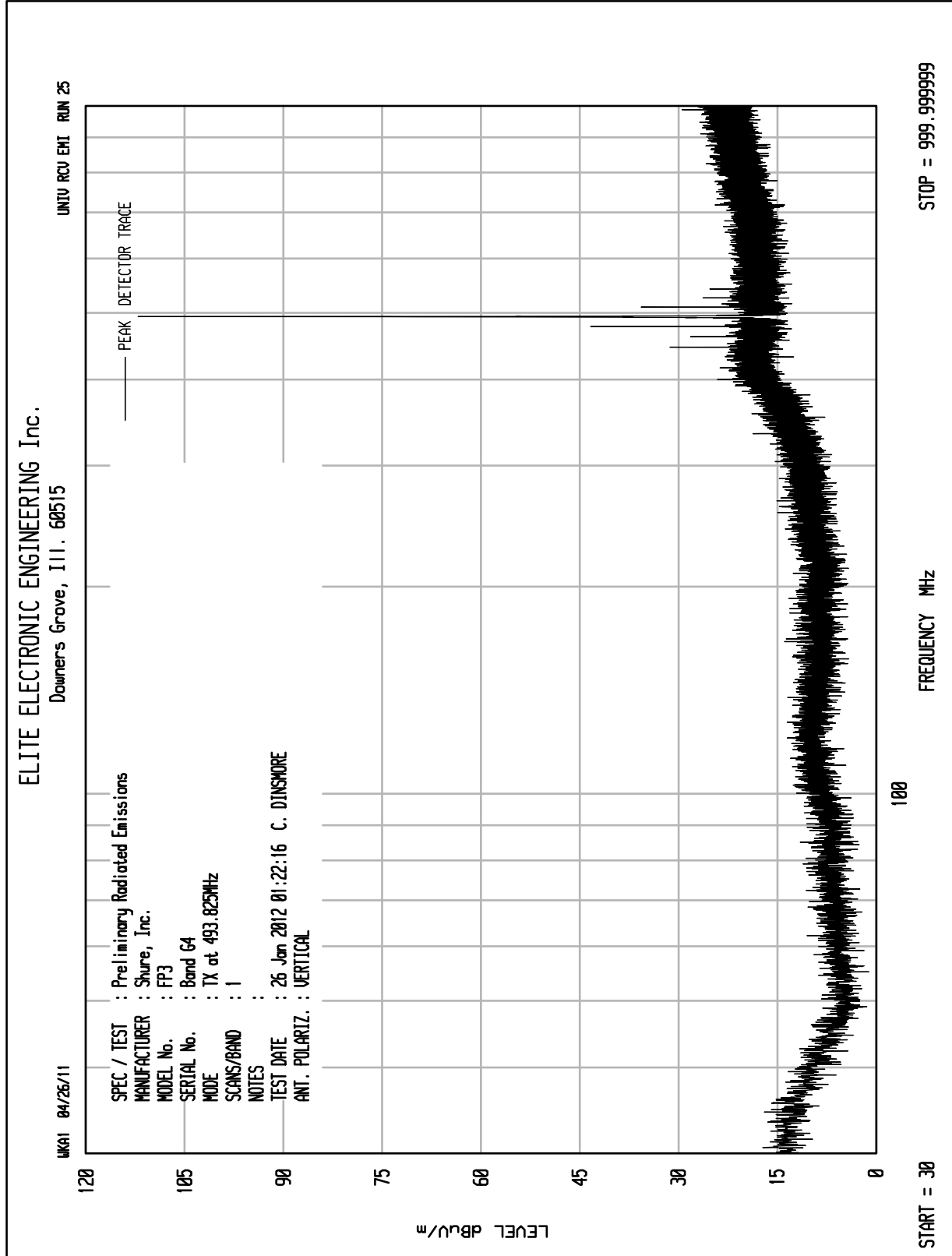


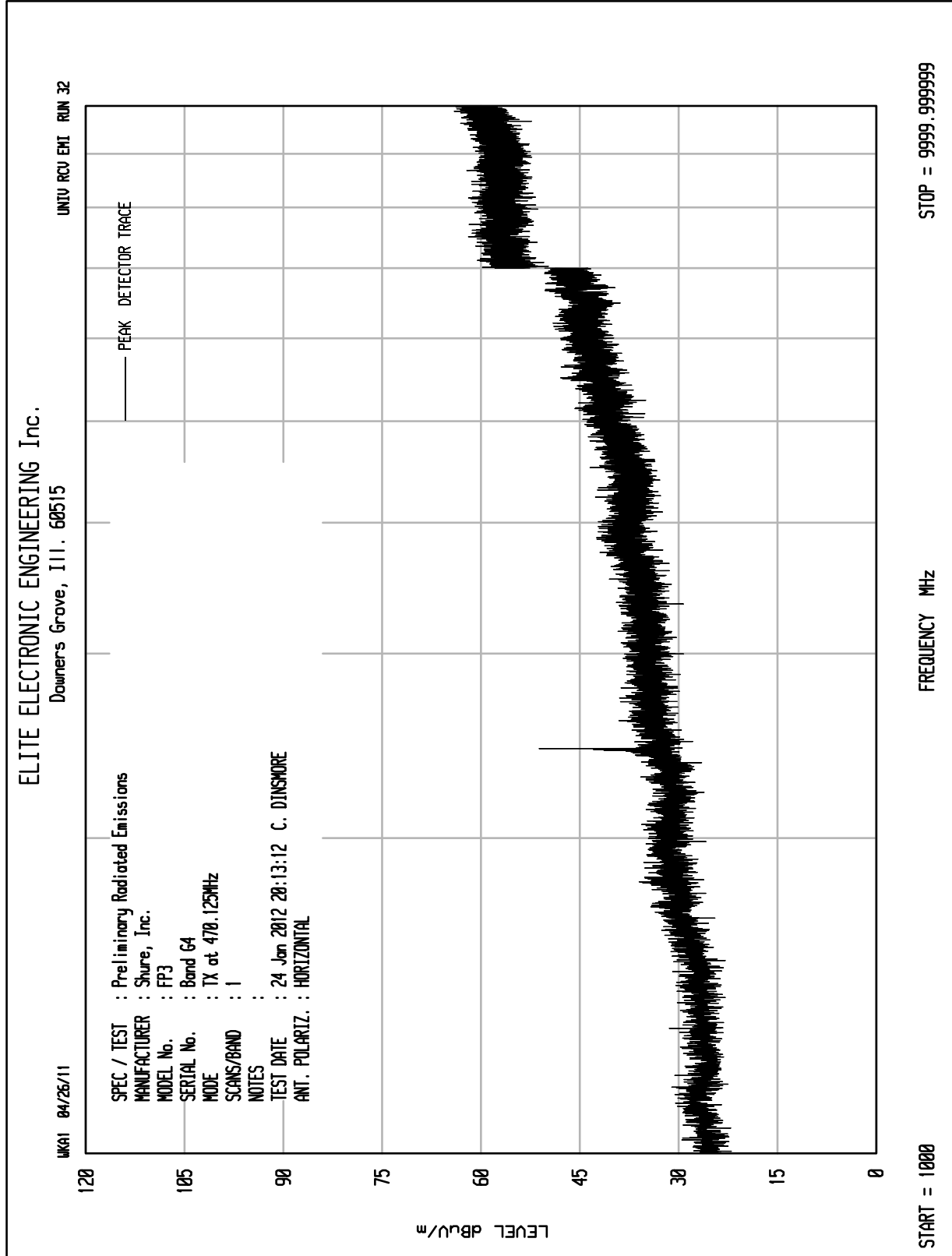


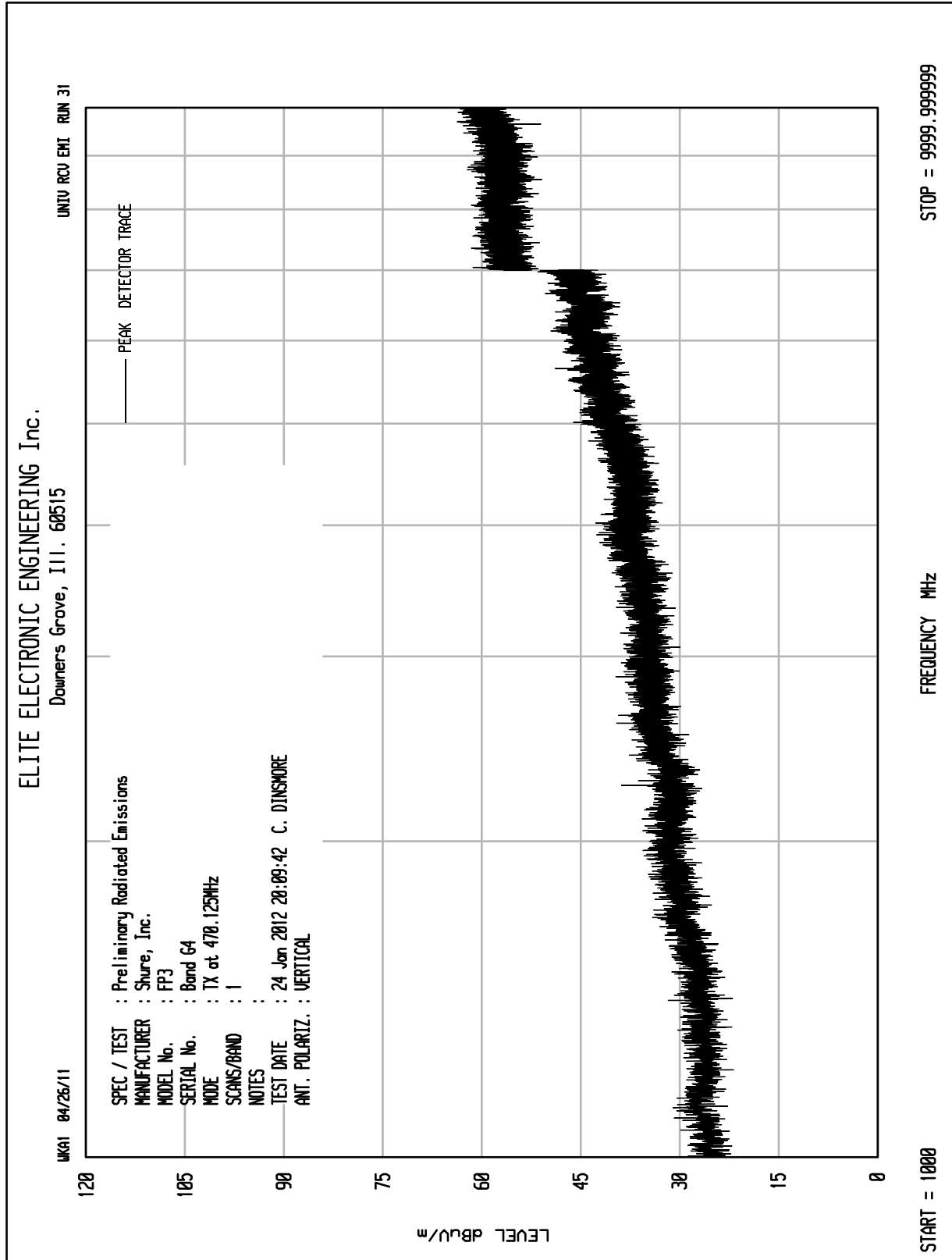


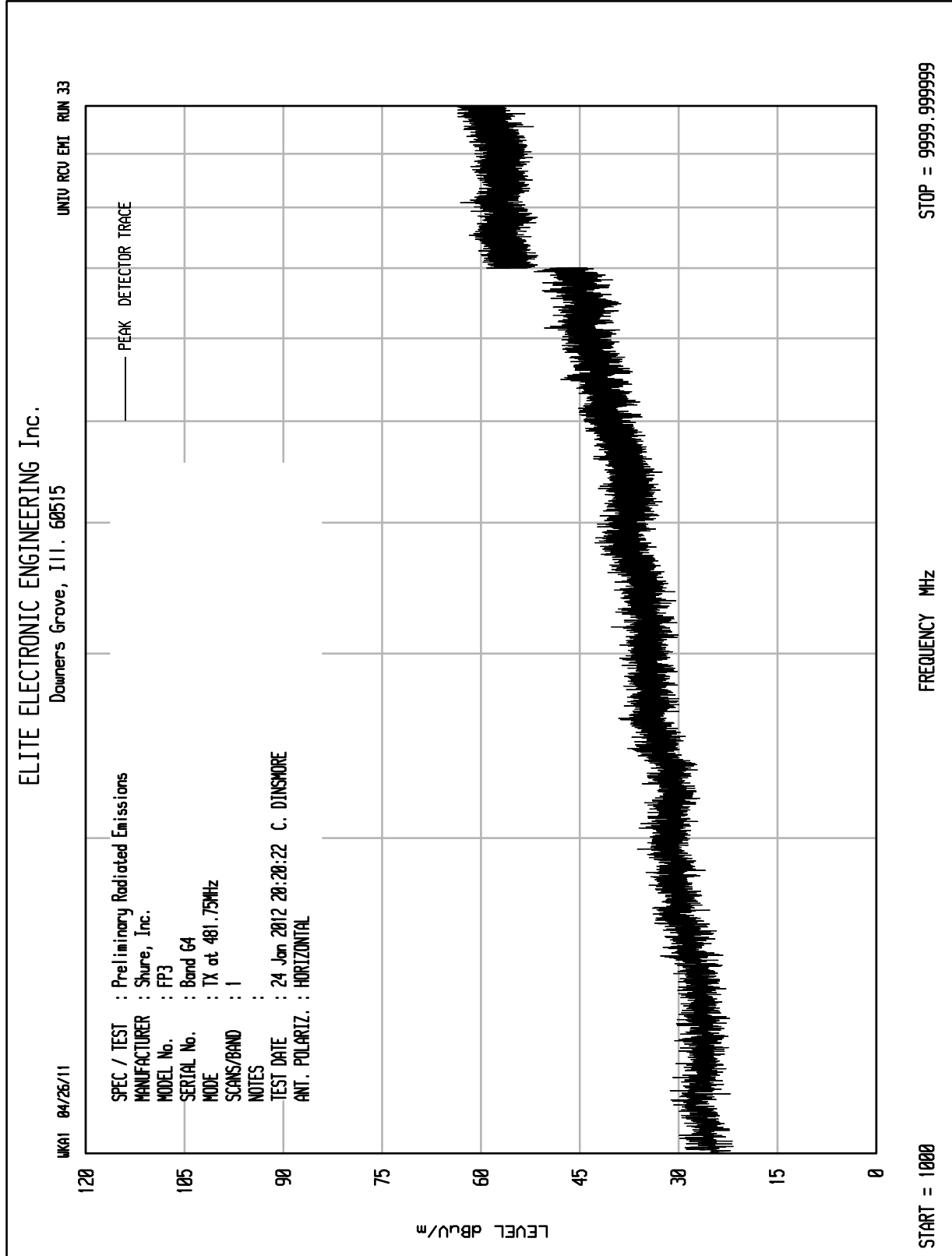


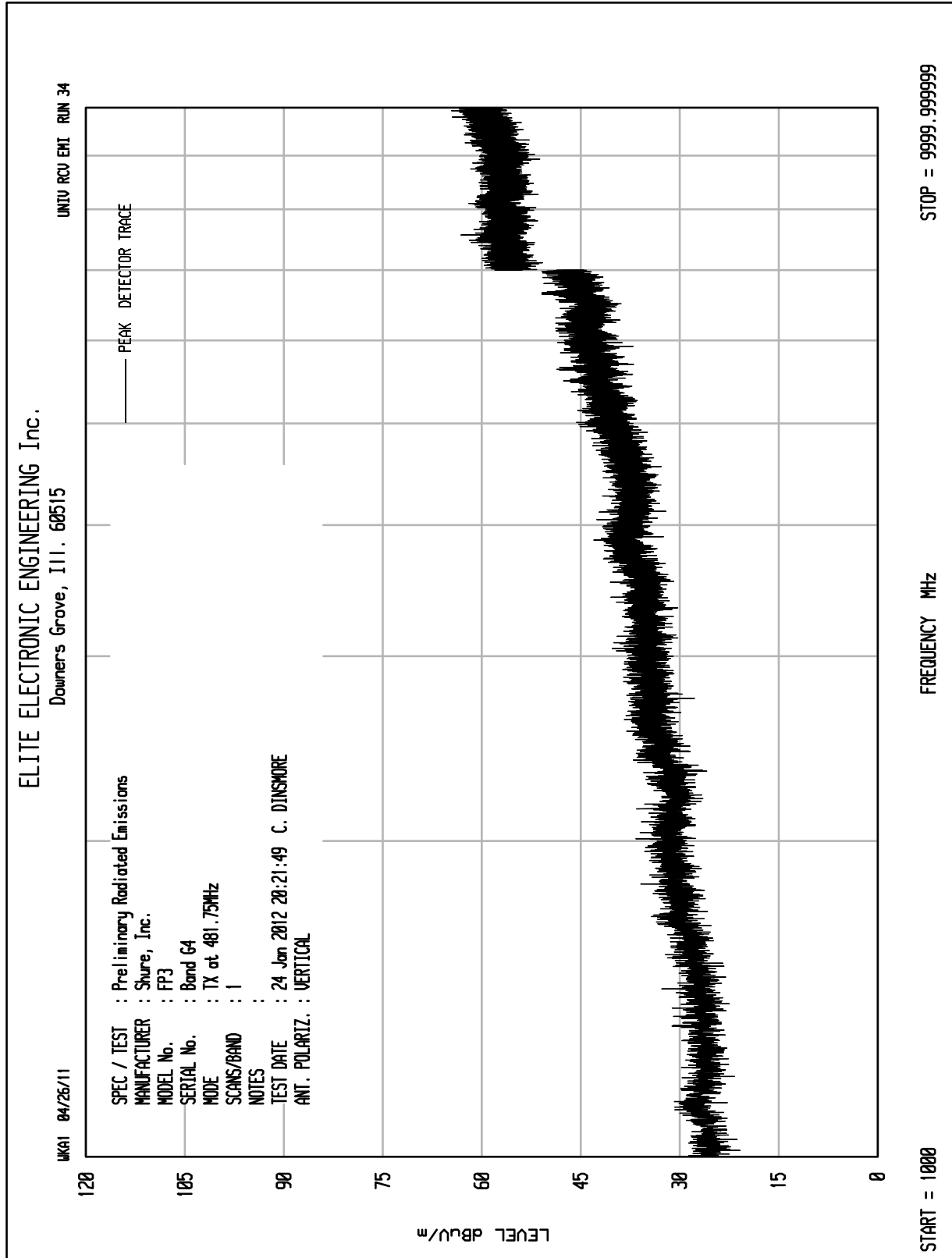


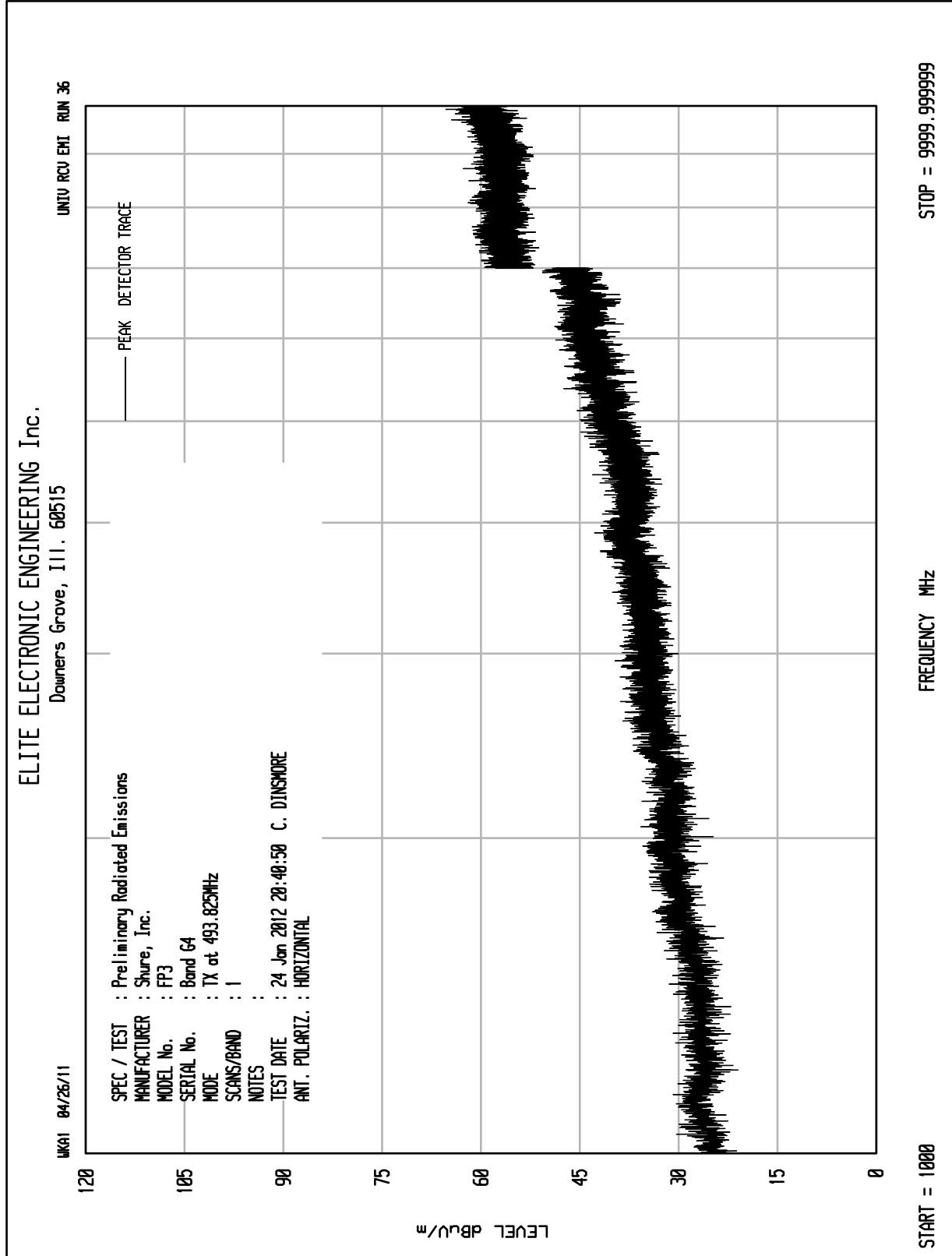


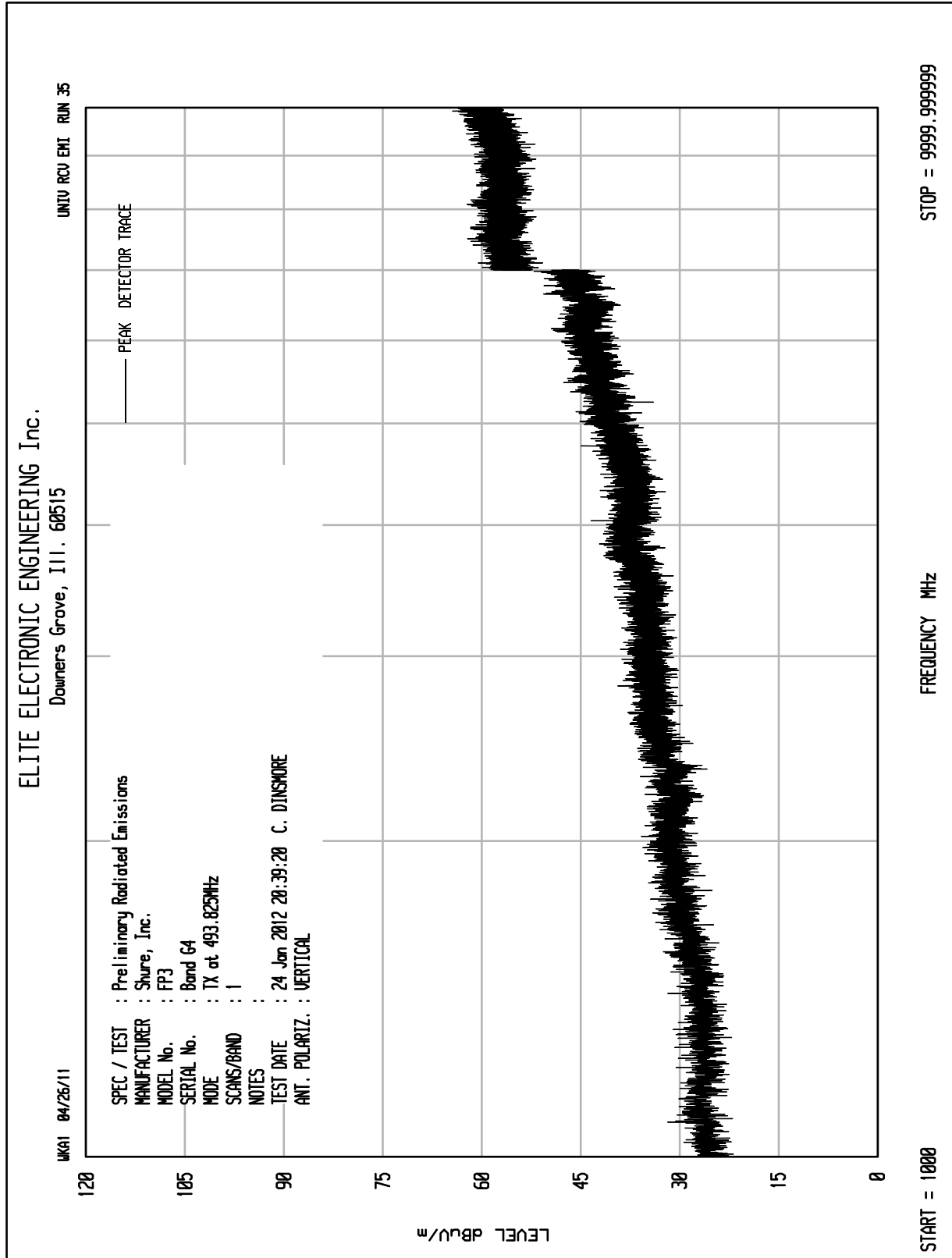


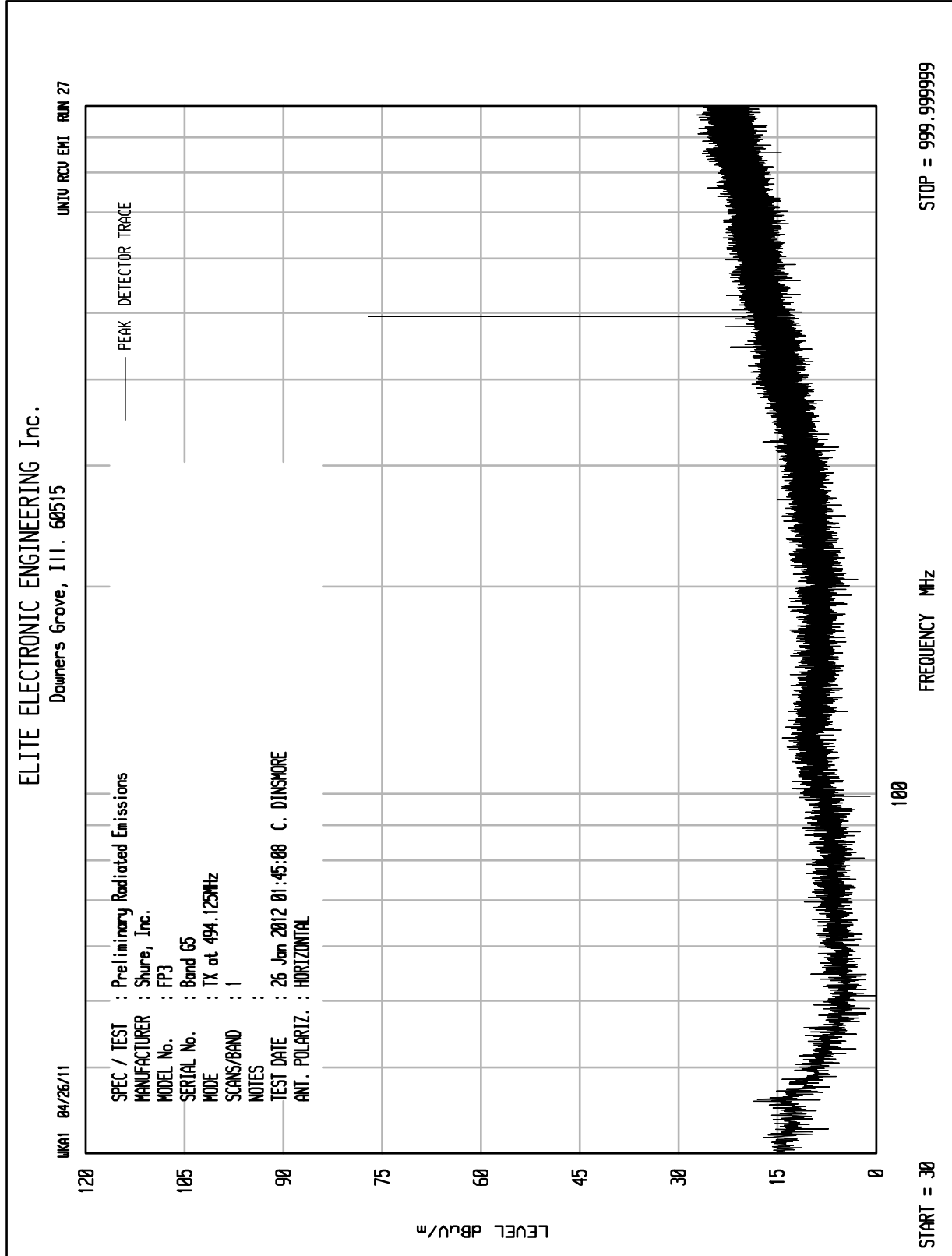


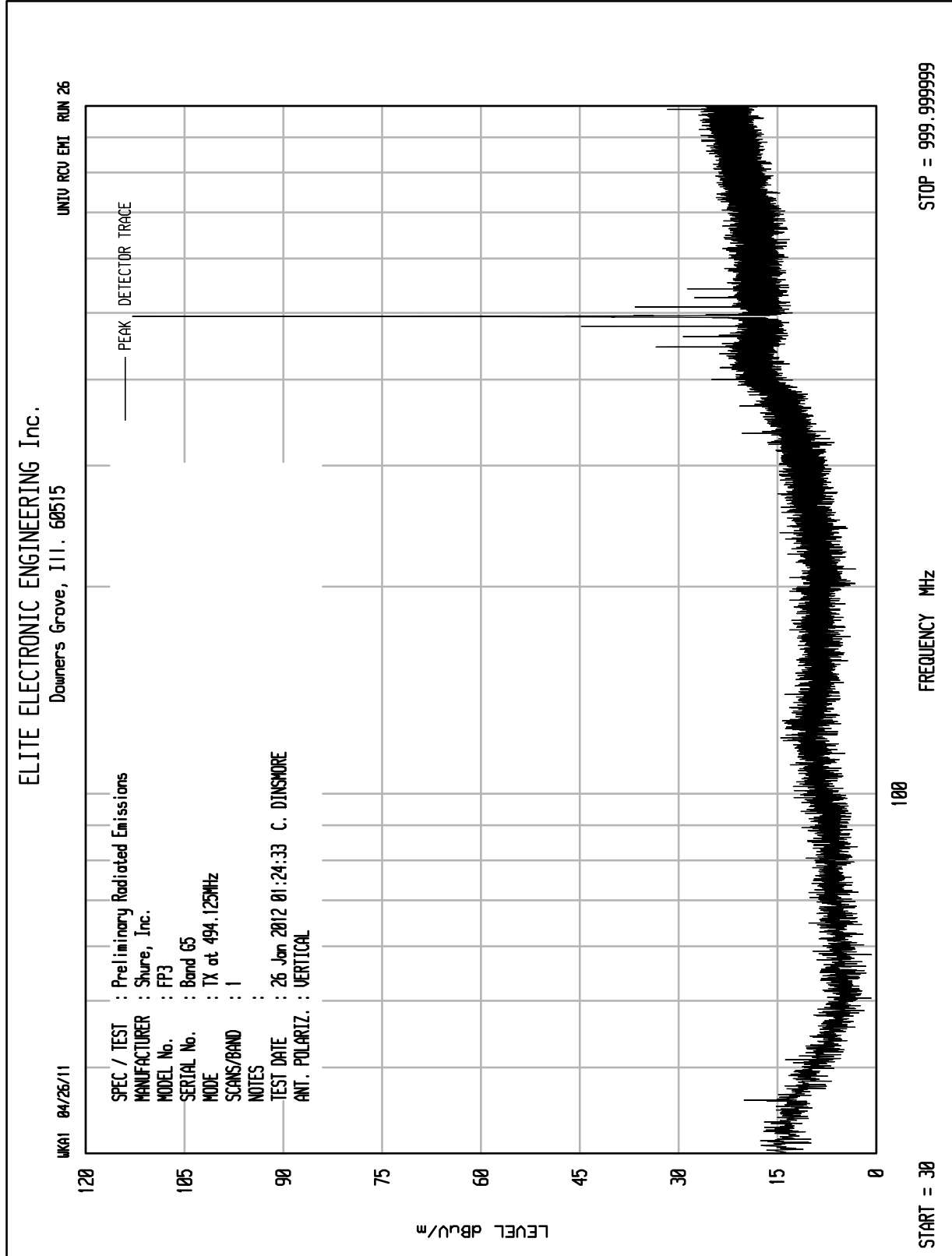


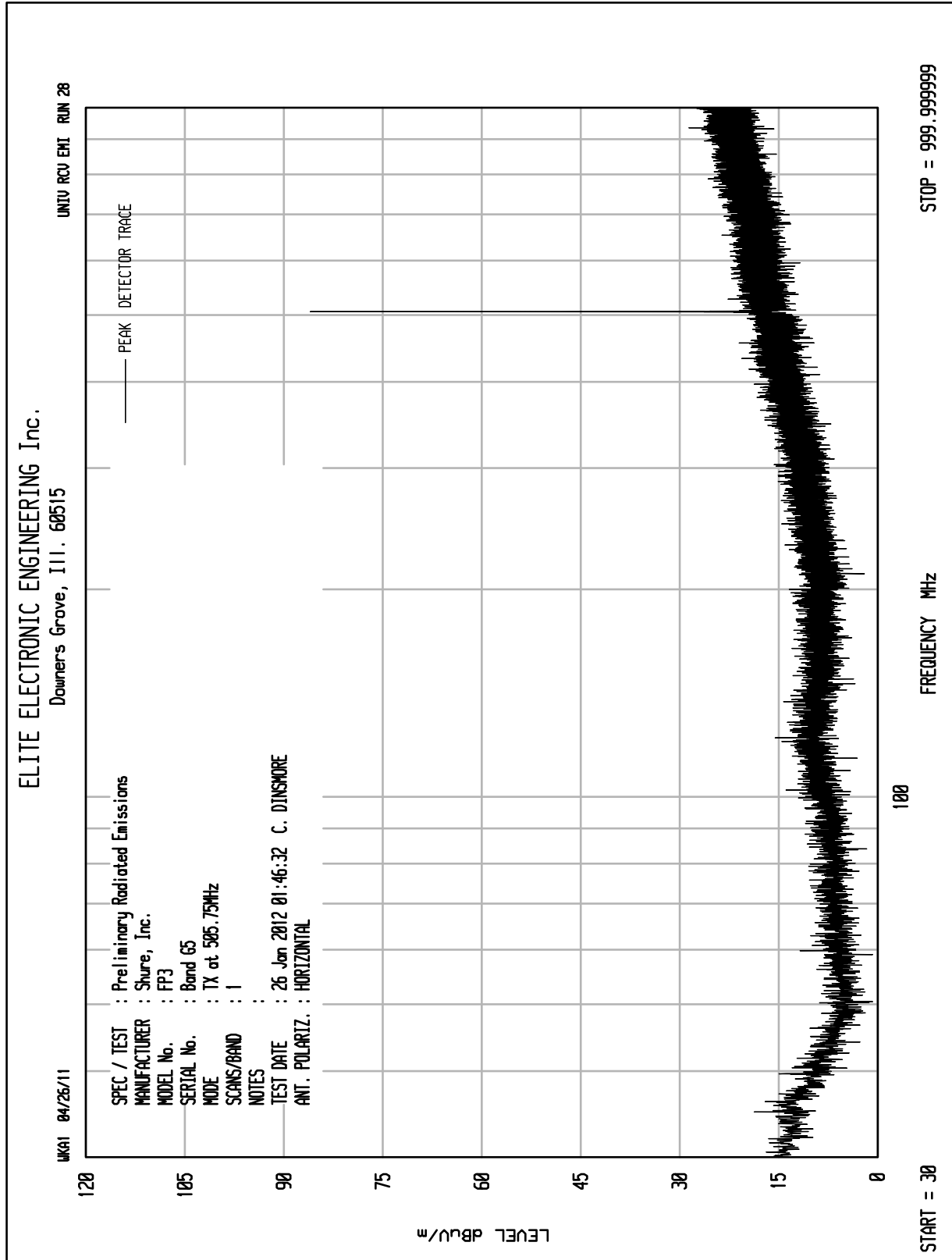


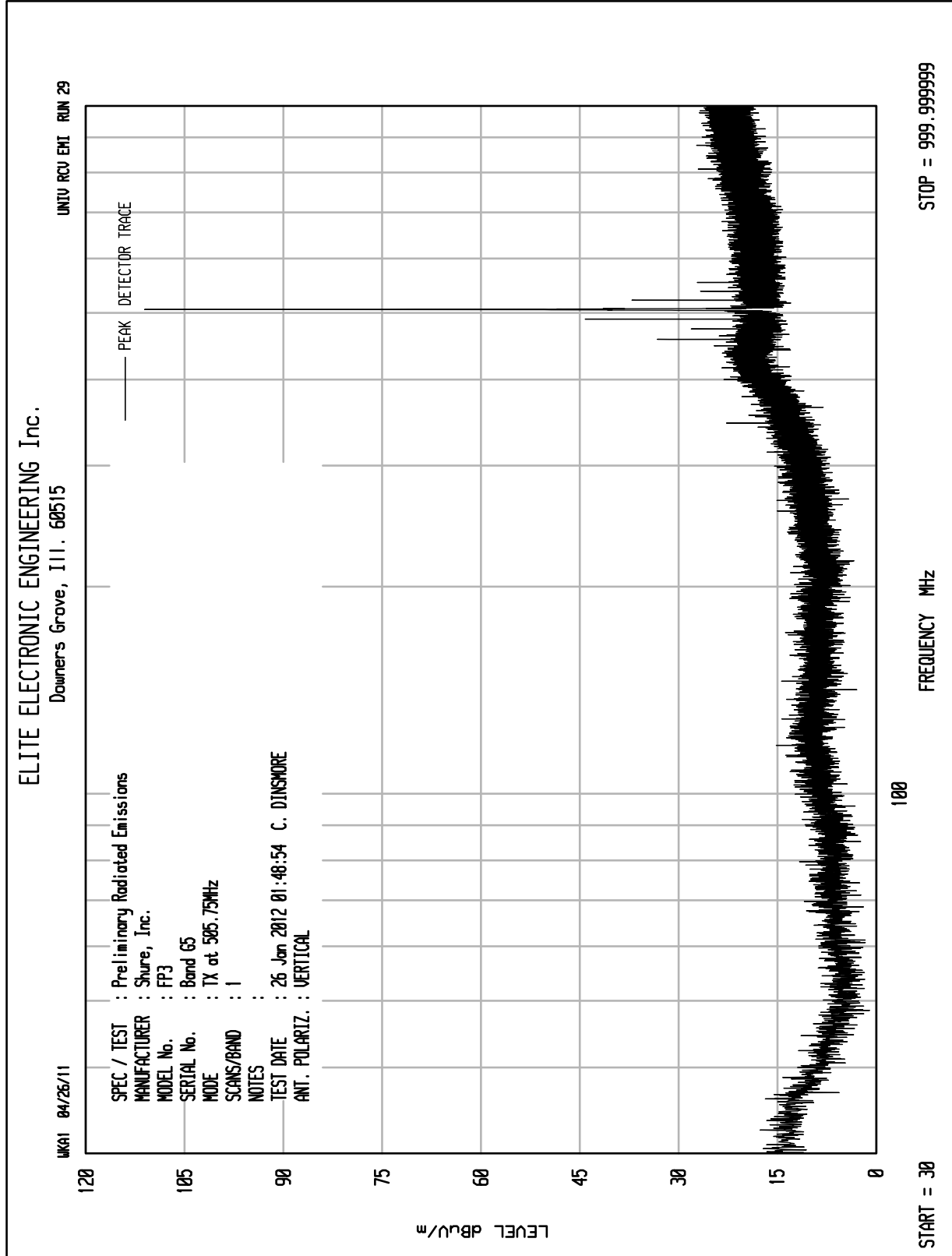


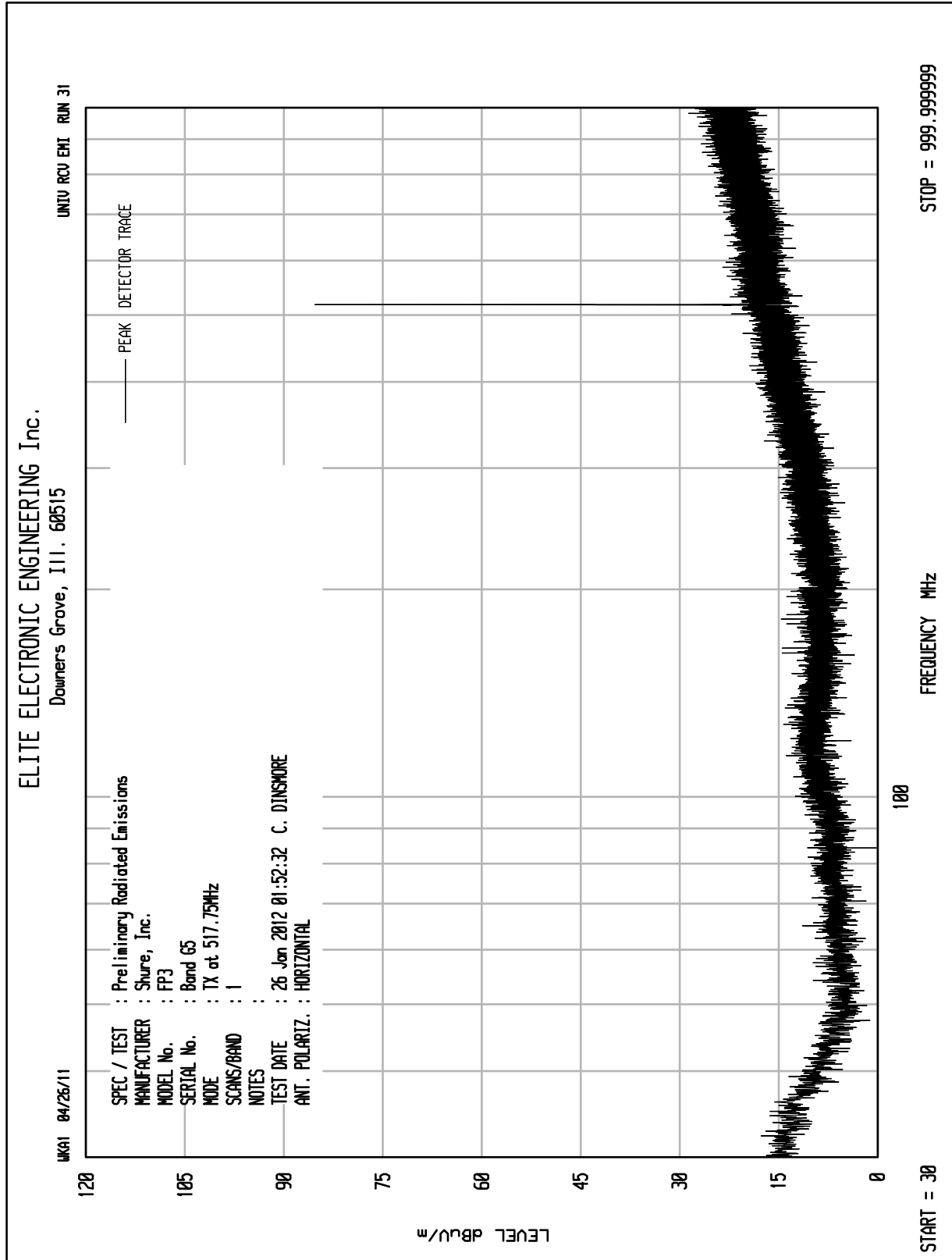


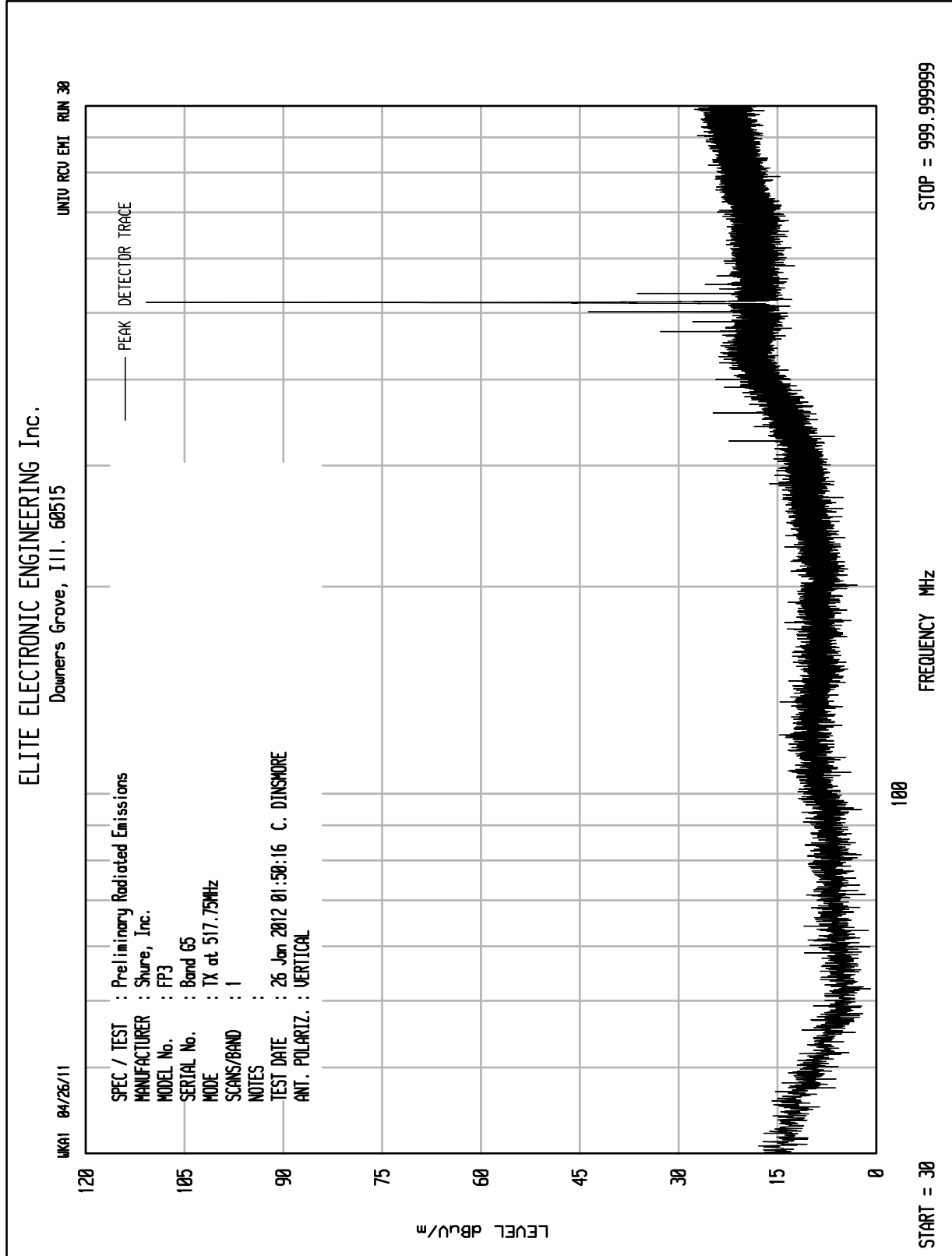


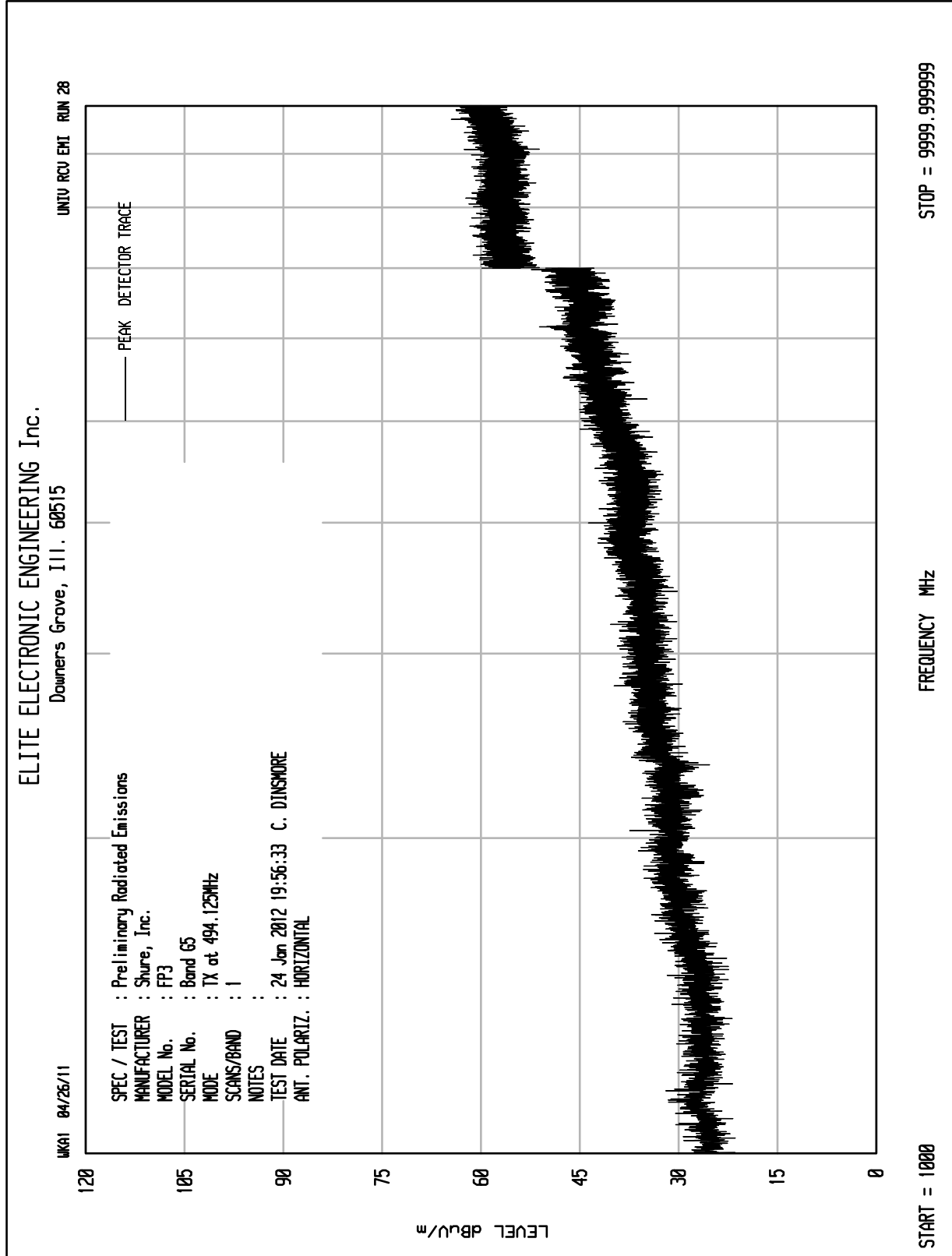


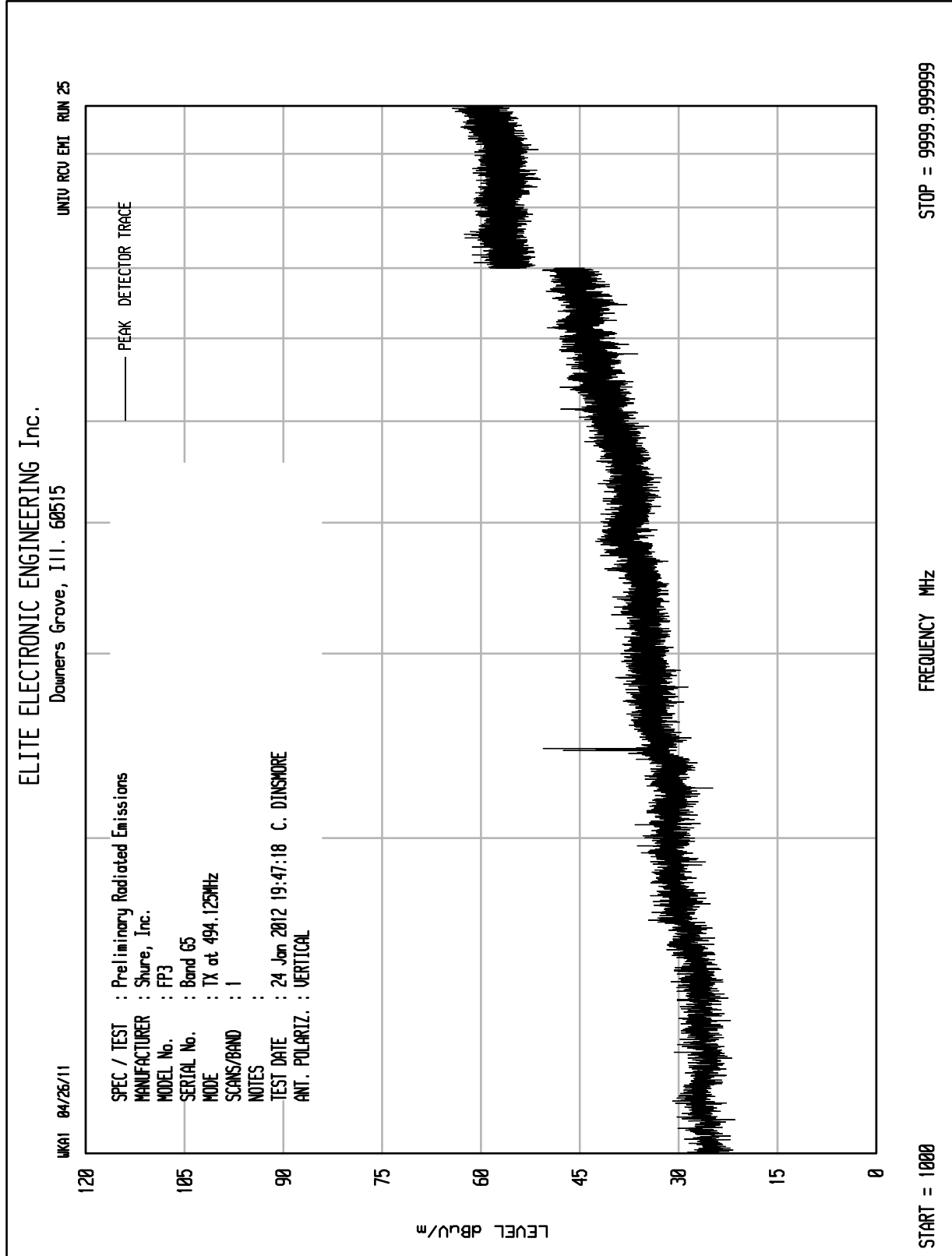


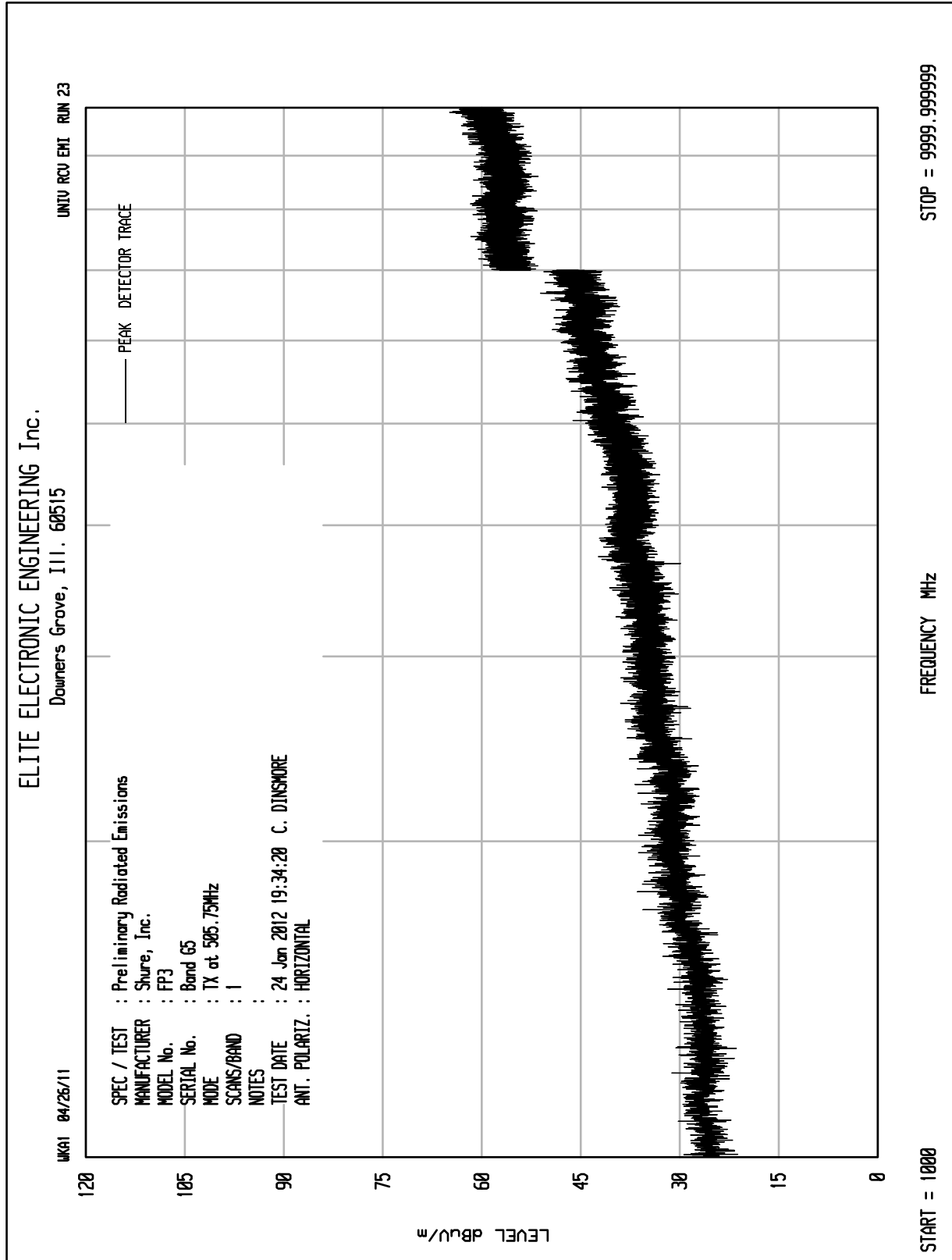










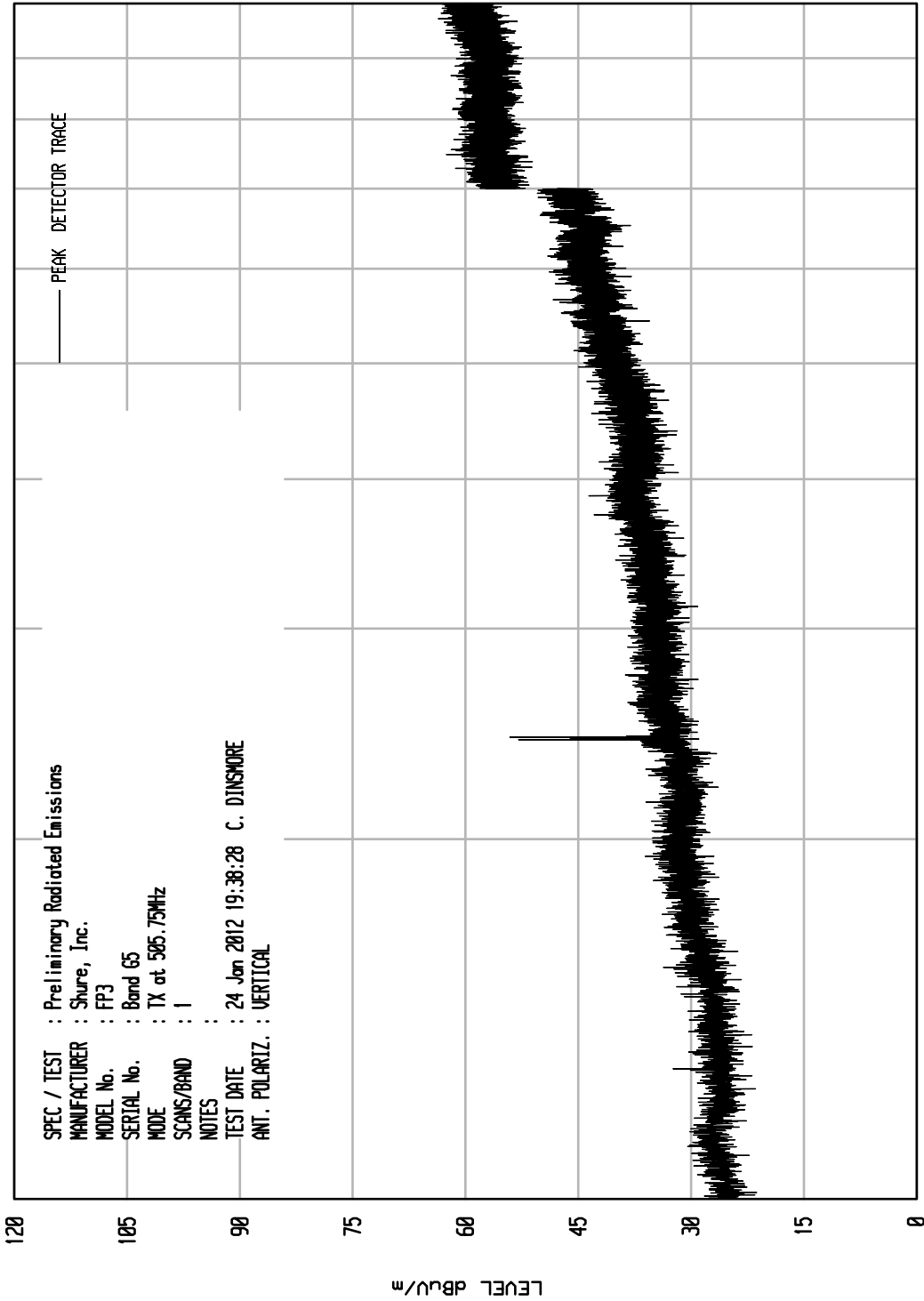


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515

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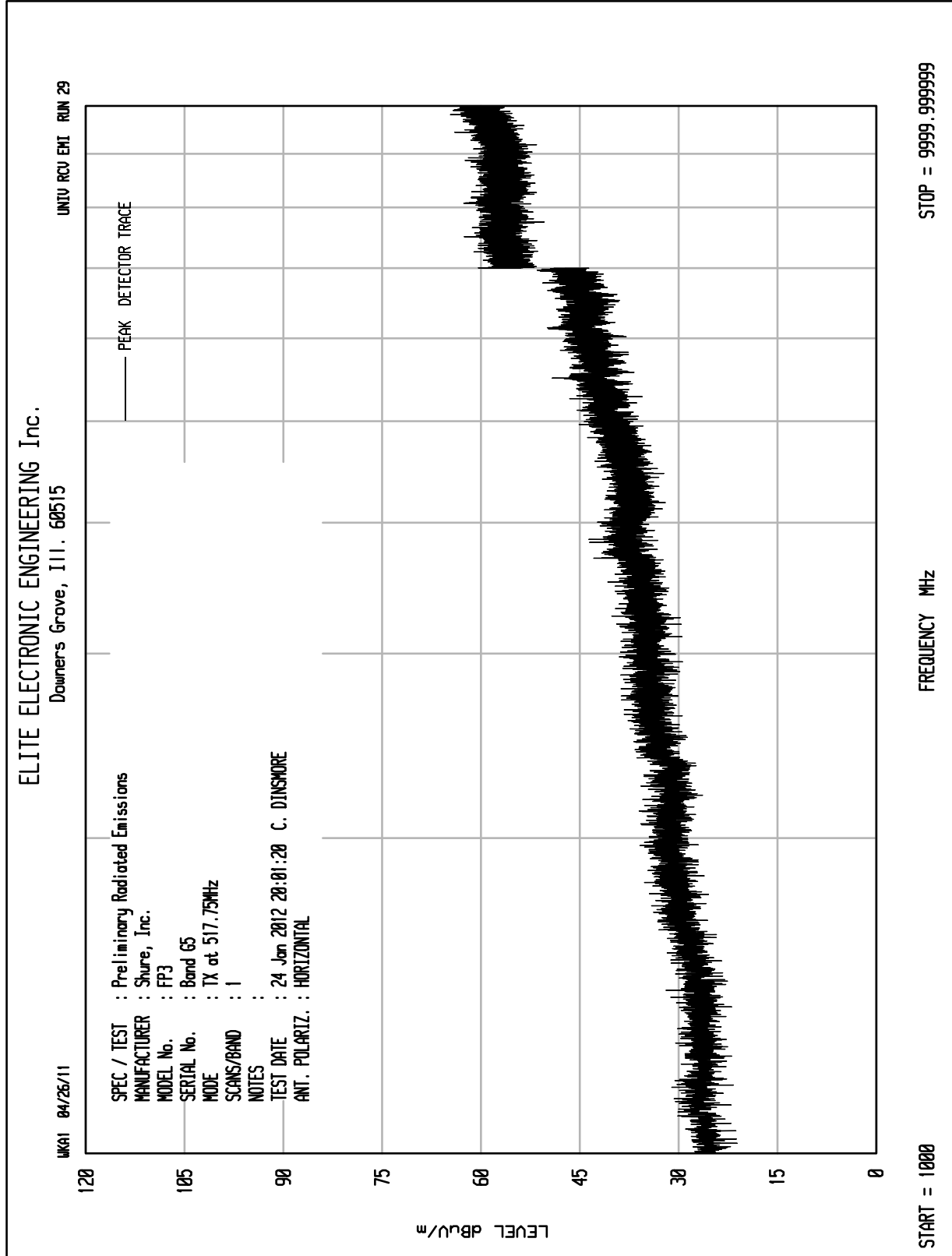
SPEC / TEST : Preliminary Radiated Emissions
 MANUFACTURER : Shure, Inc.
 MODEL No. : FP3
 SERIAL No. : Band 65
 MODE : TX at 505.75MHz
 SCANS/BAND : 1
 NOTES :
 TEST DATE : 24 Jan 2012 19:38:28 C. DINSMORE
 ANT. POLARIZ. : VERTICAL

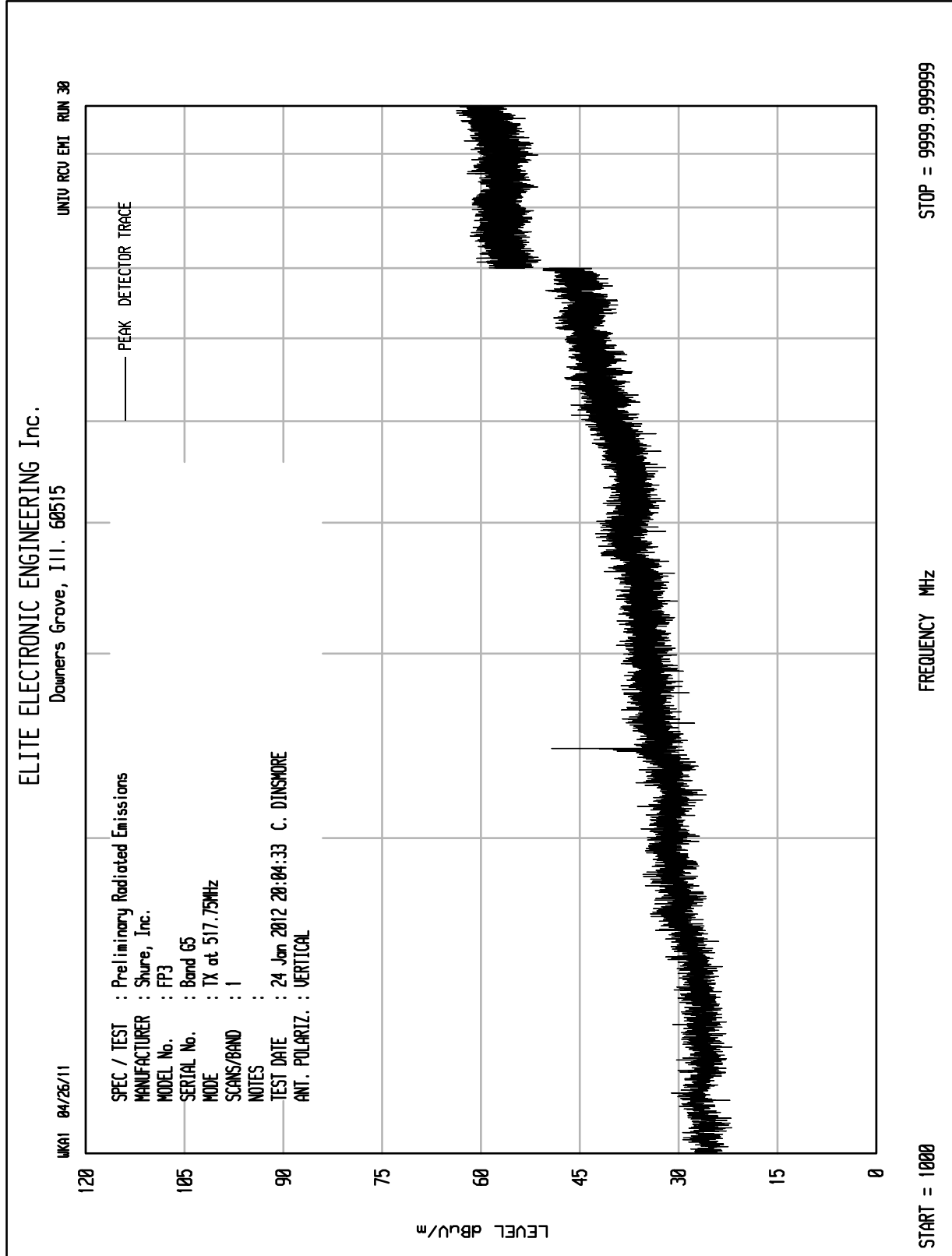


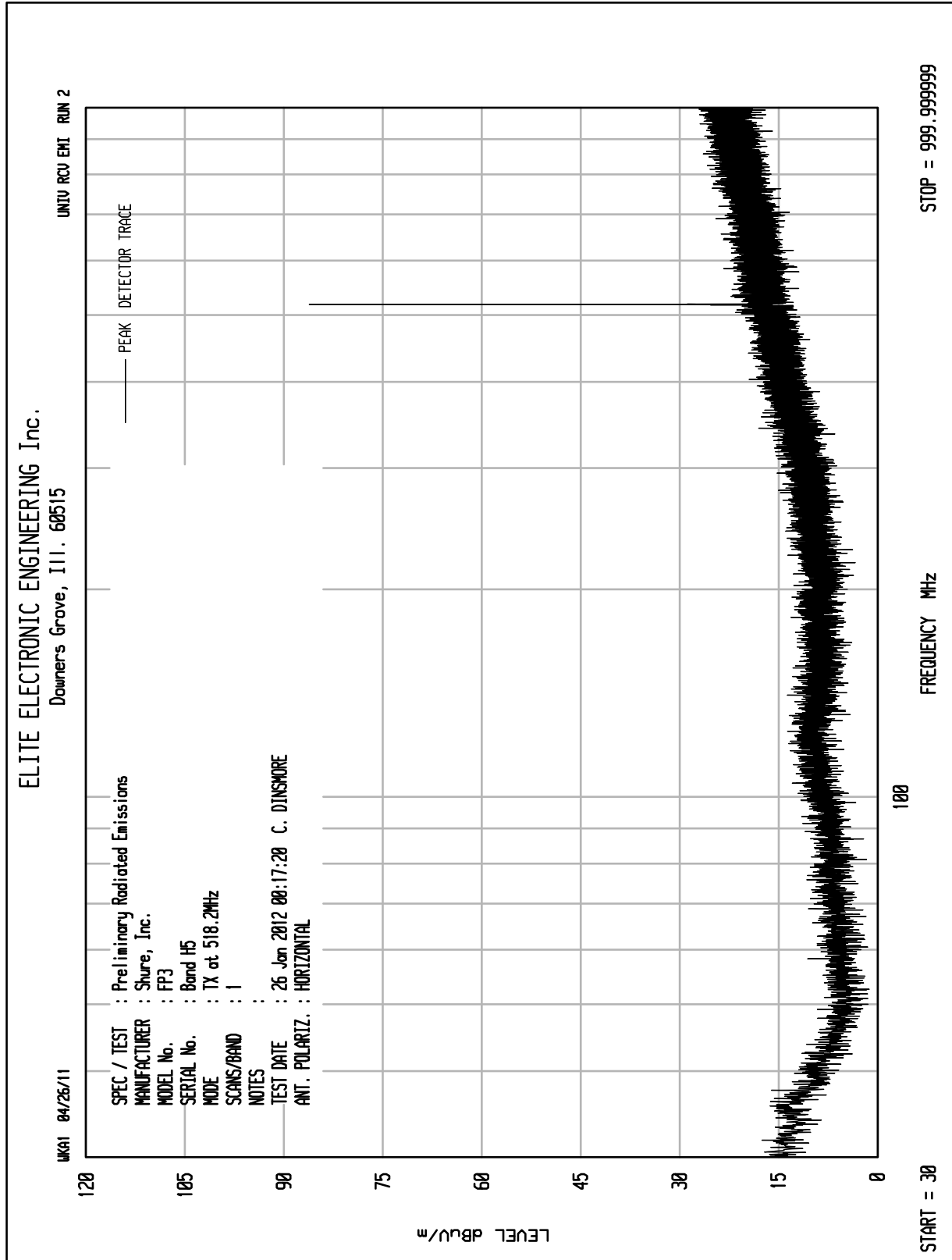
START = 1000

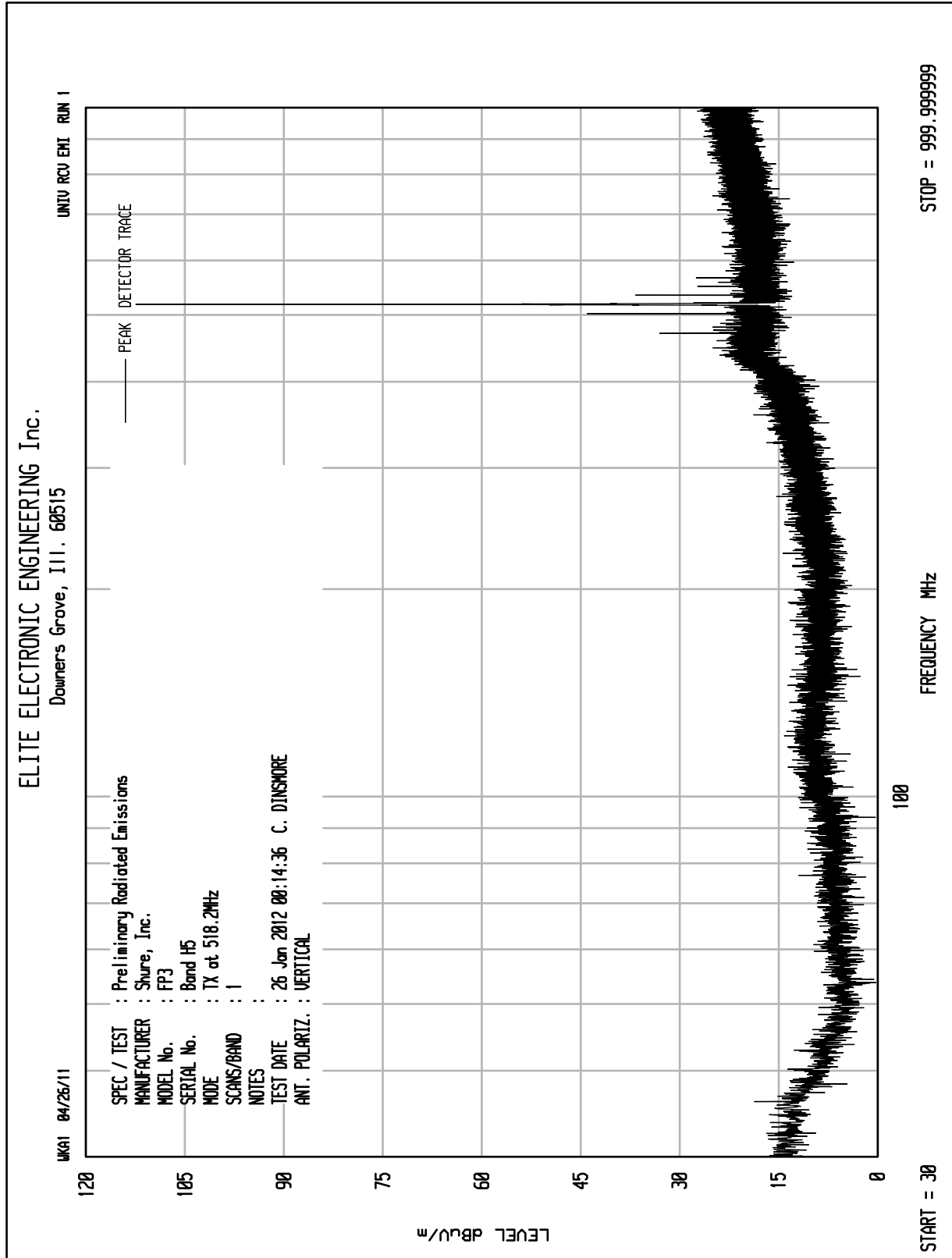
FREQUENCY MHz

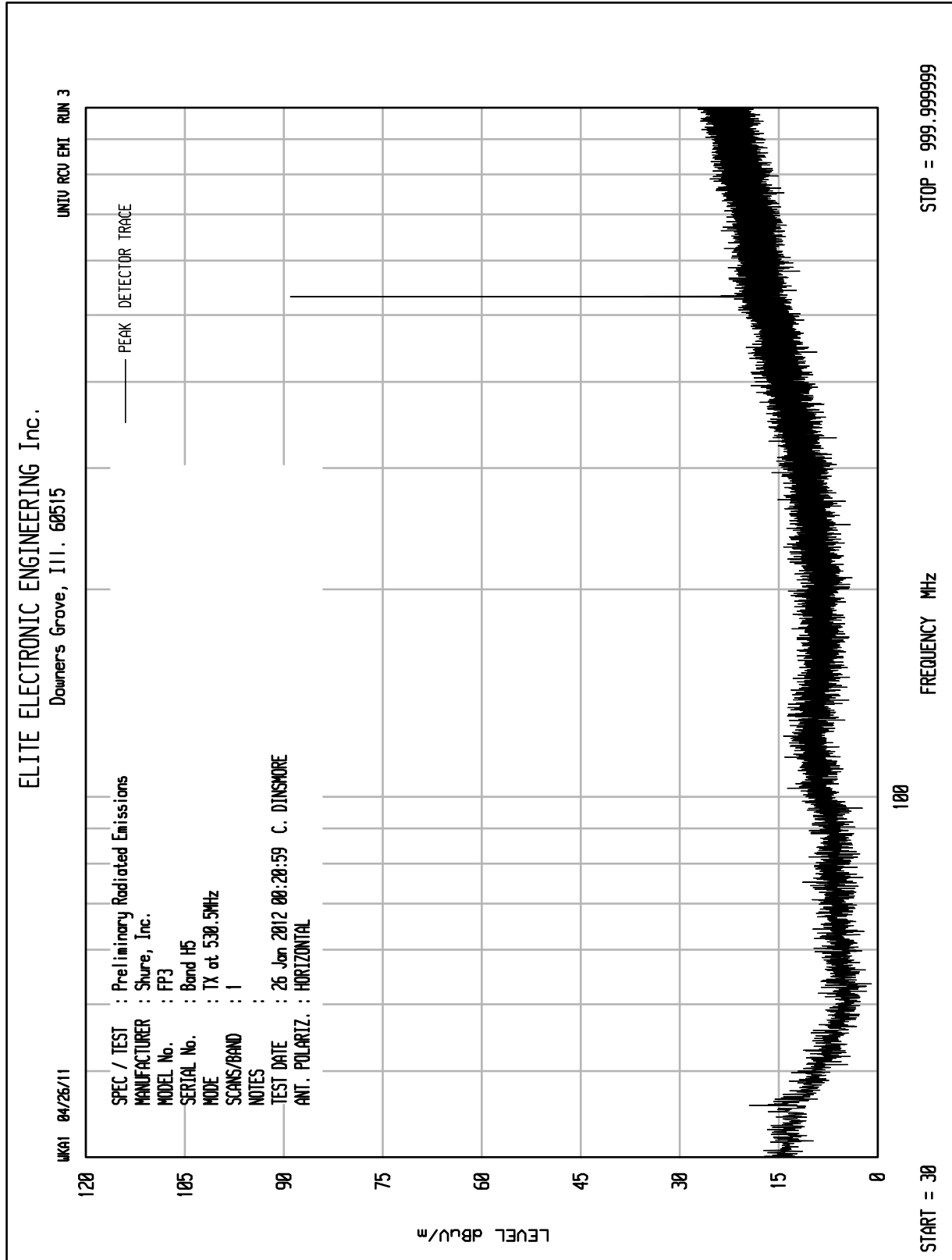
STOP = 9999.999999

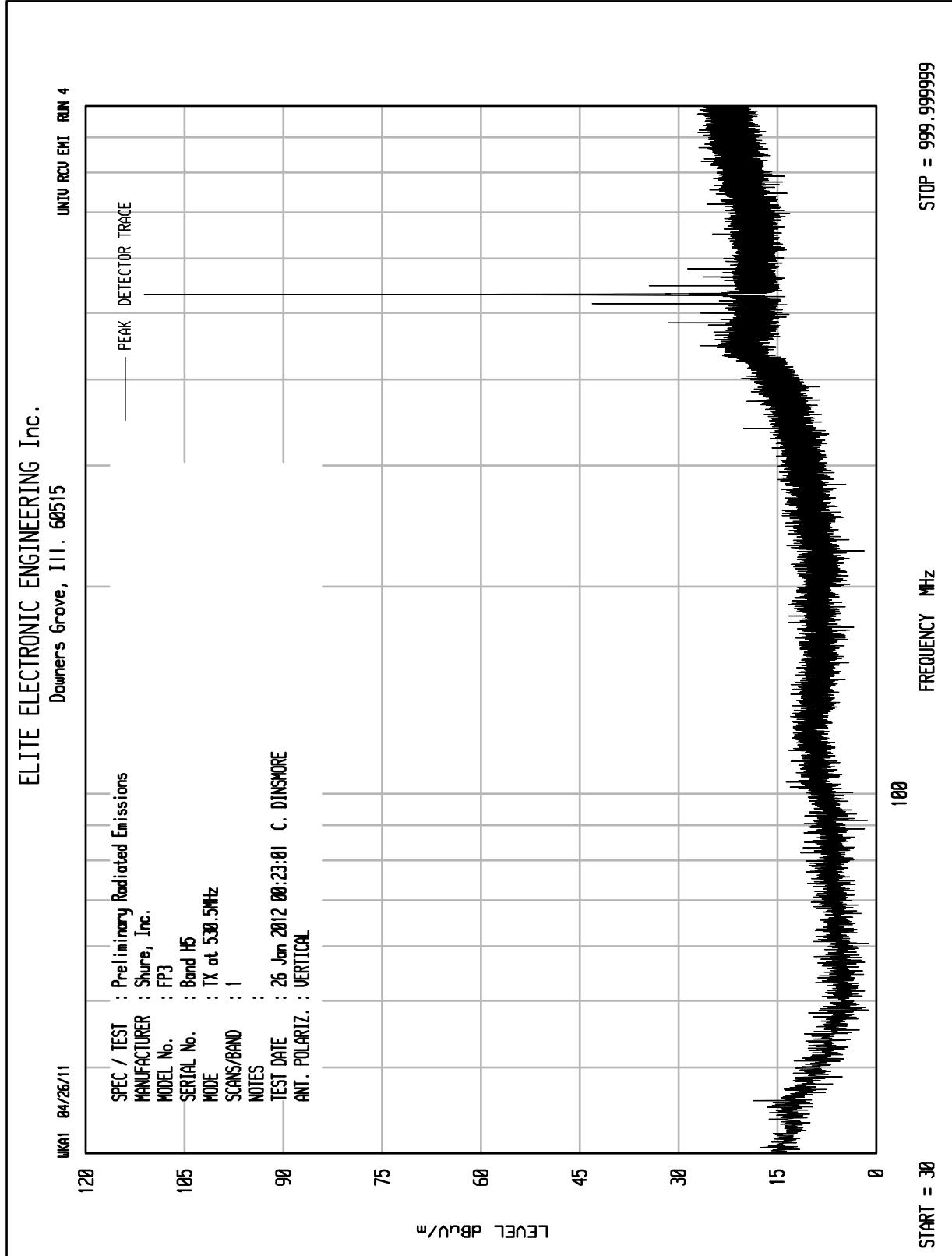


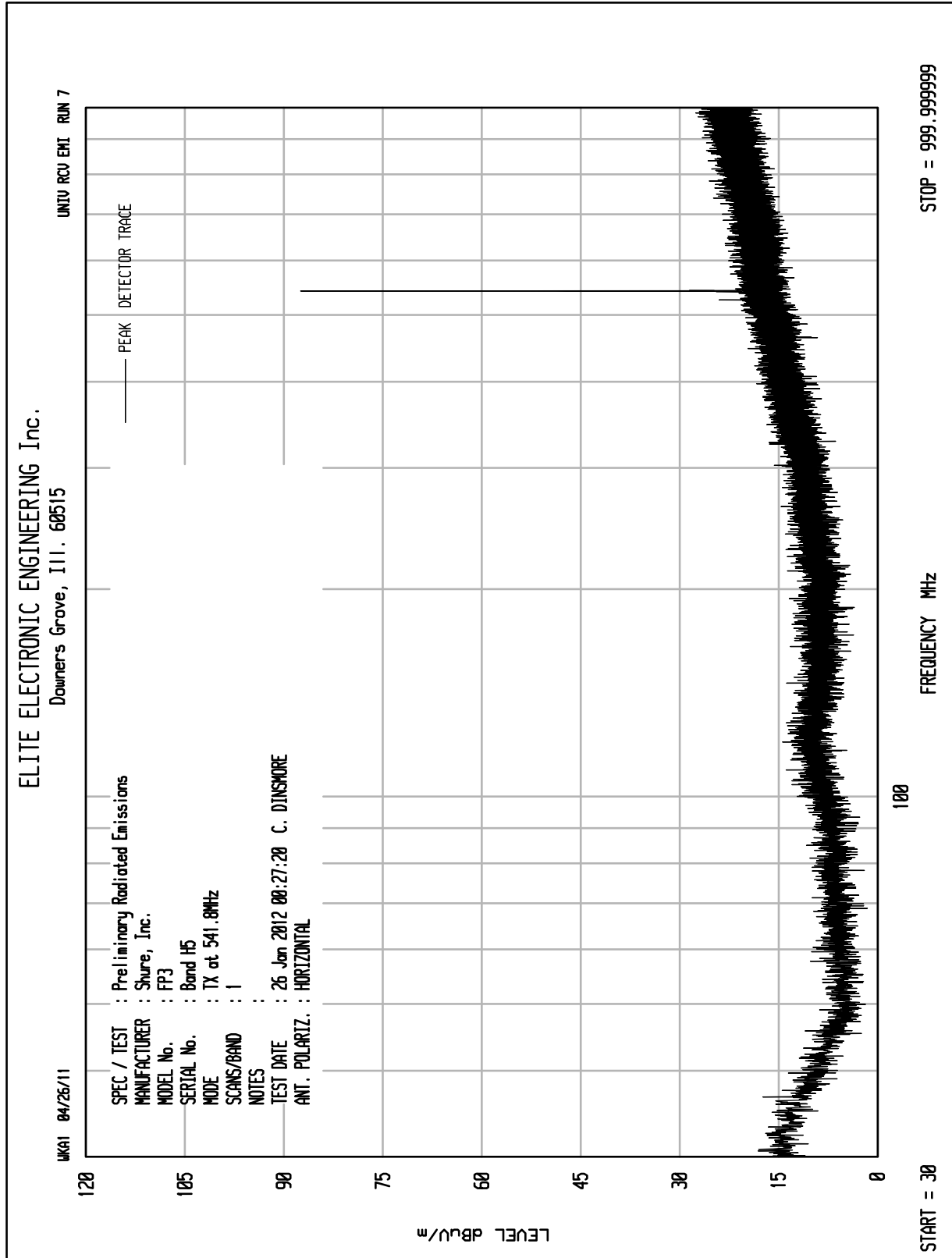


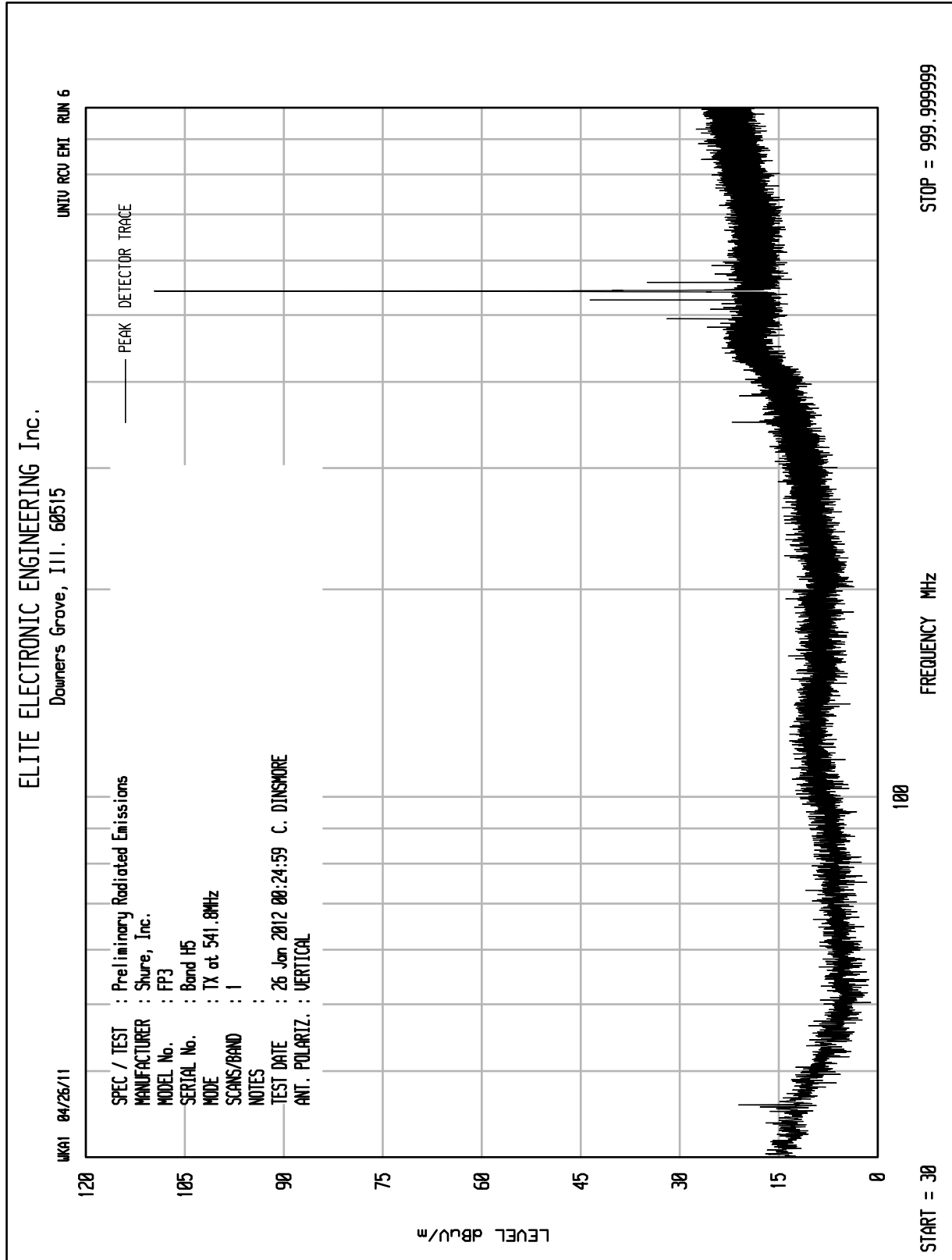


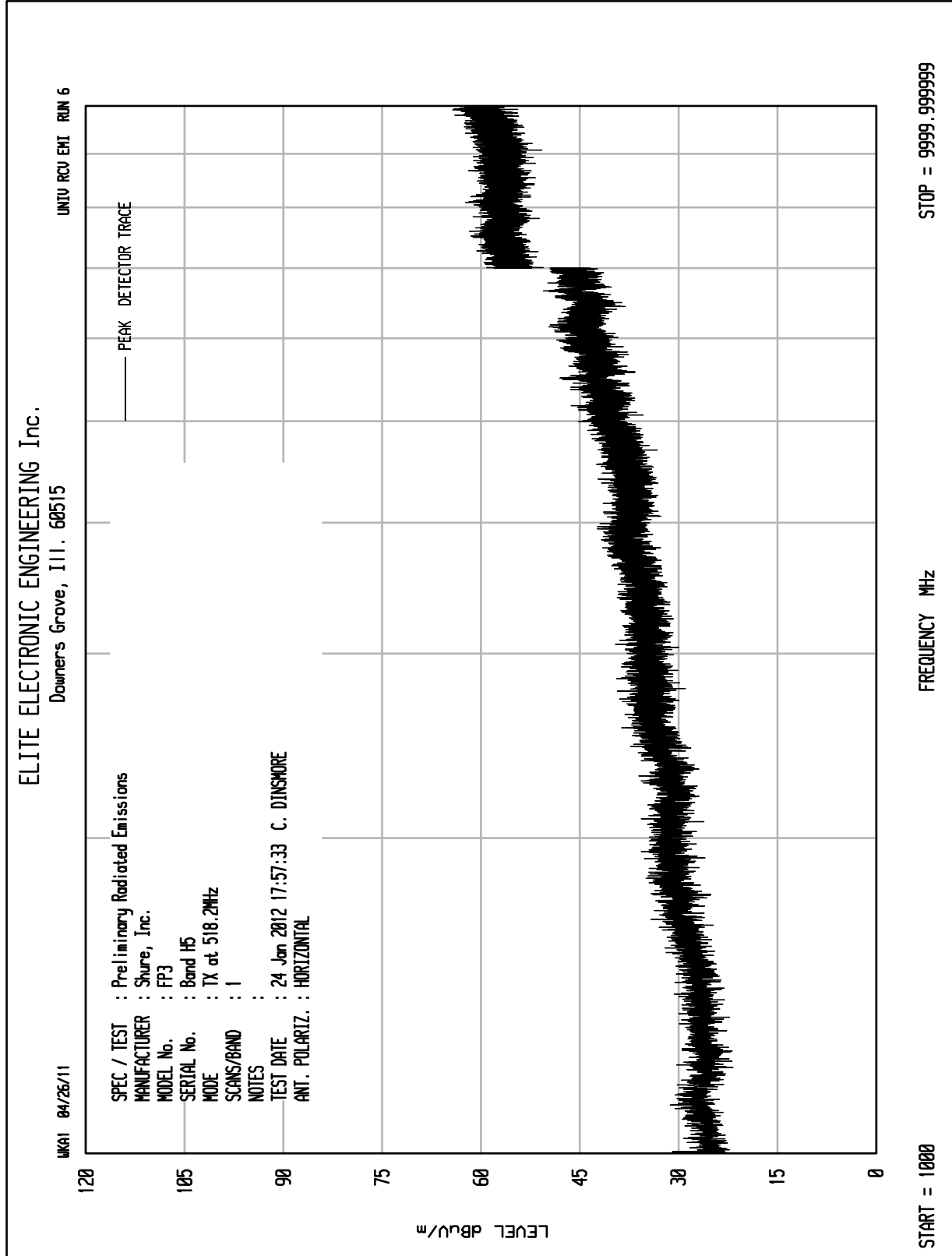


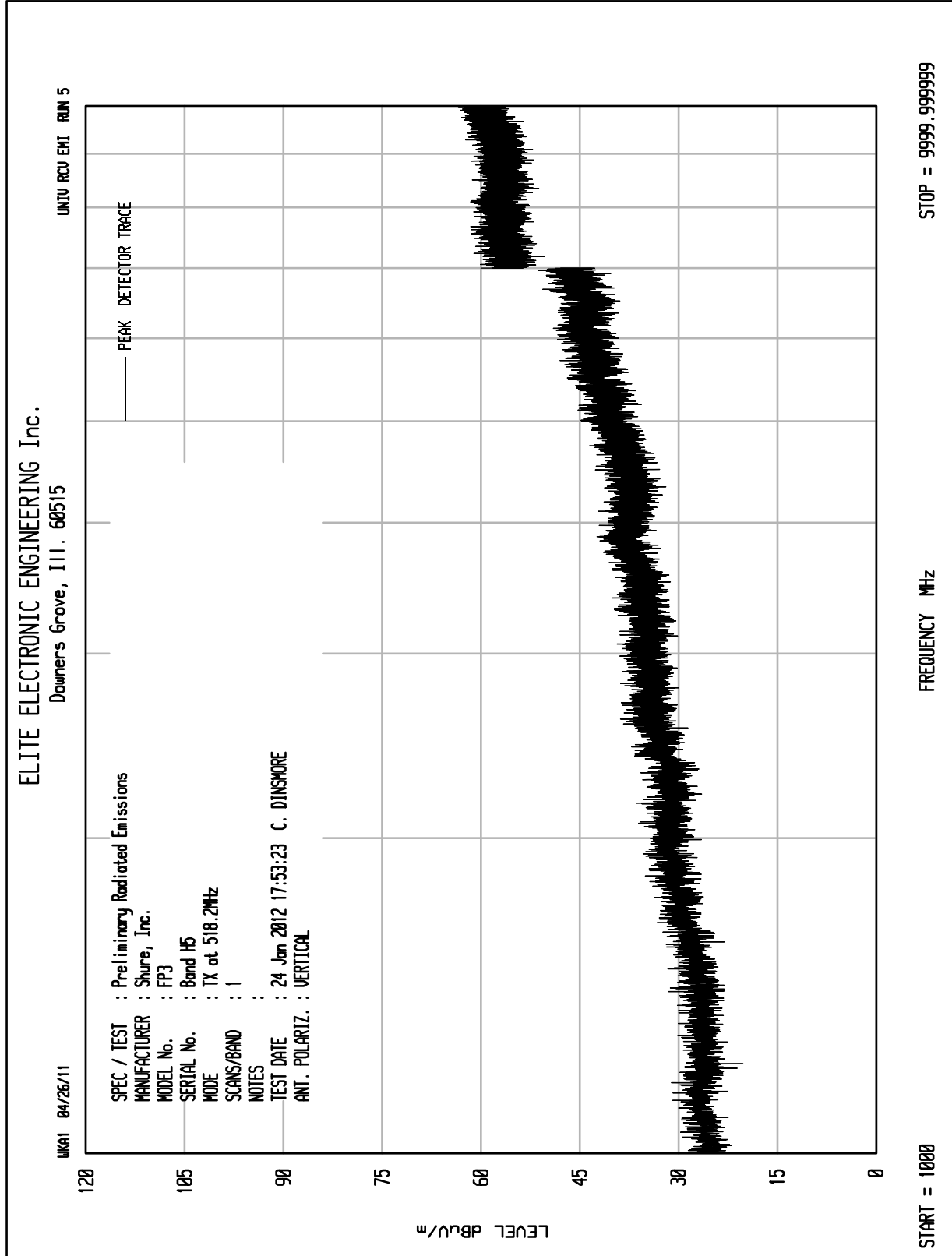


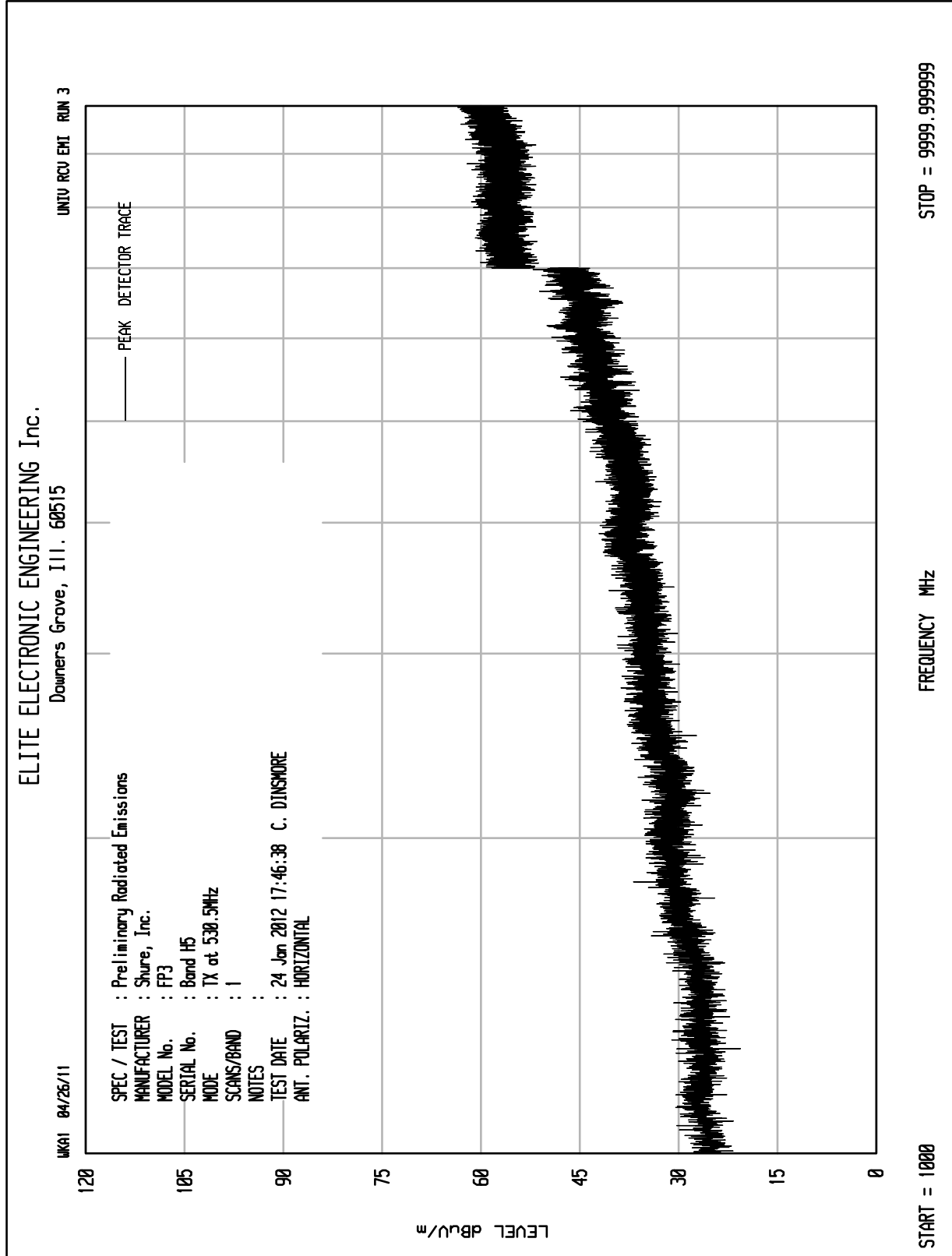


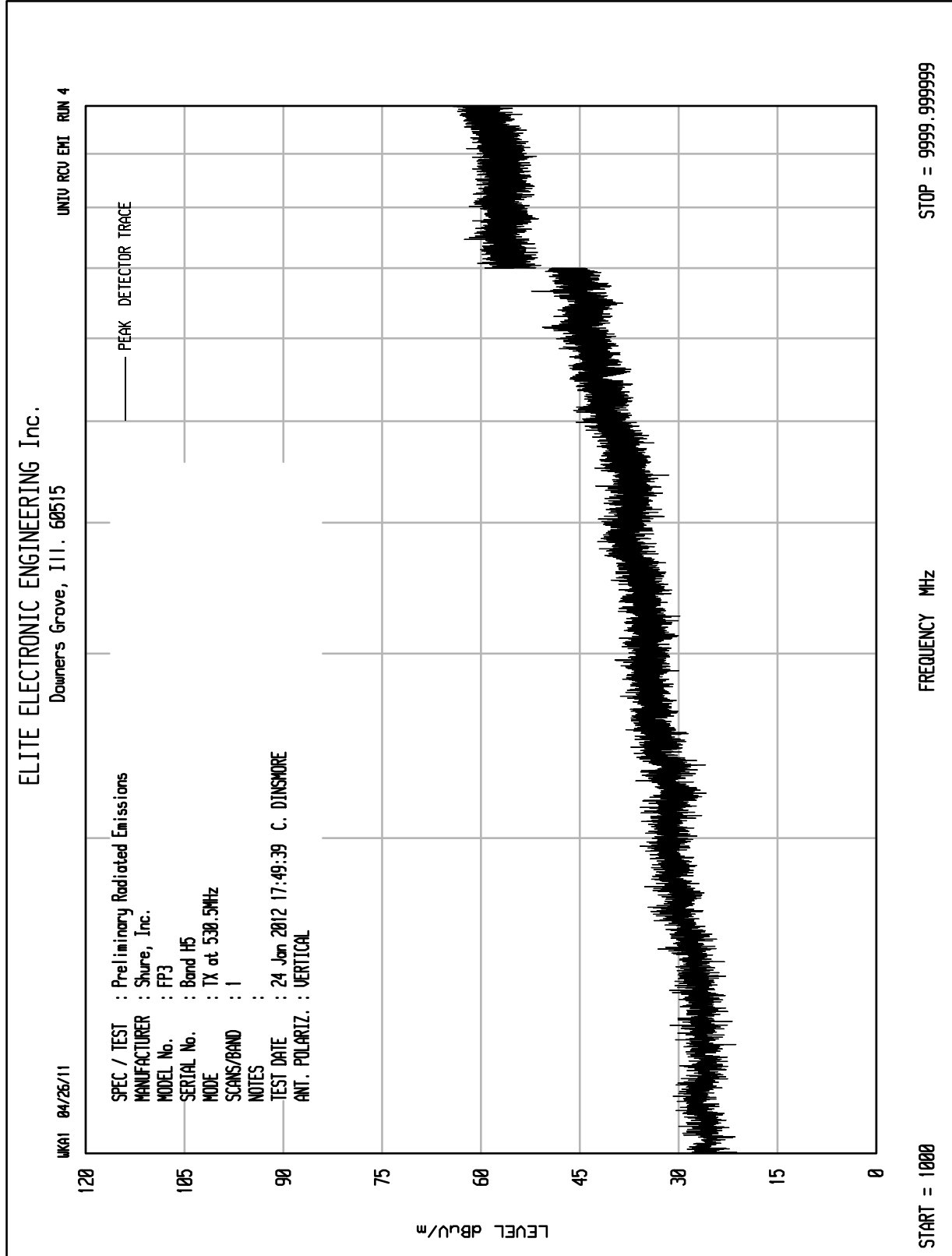


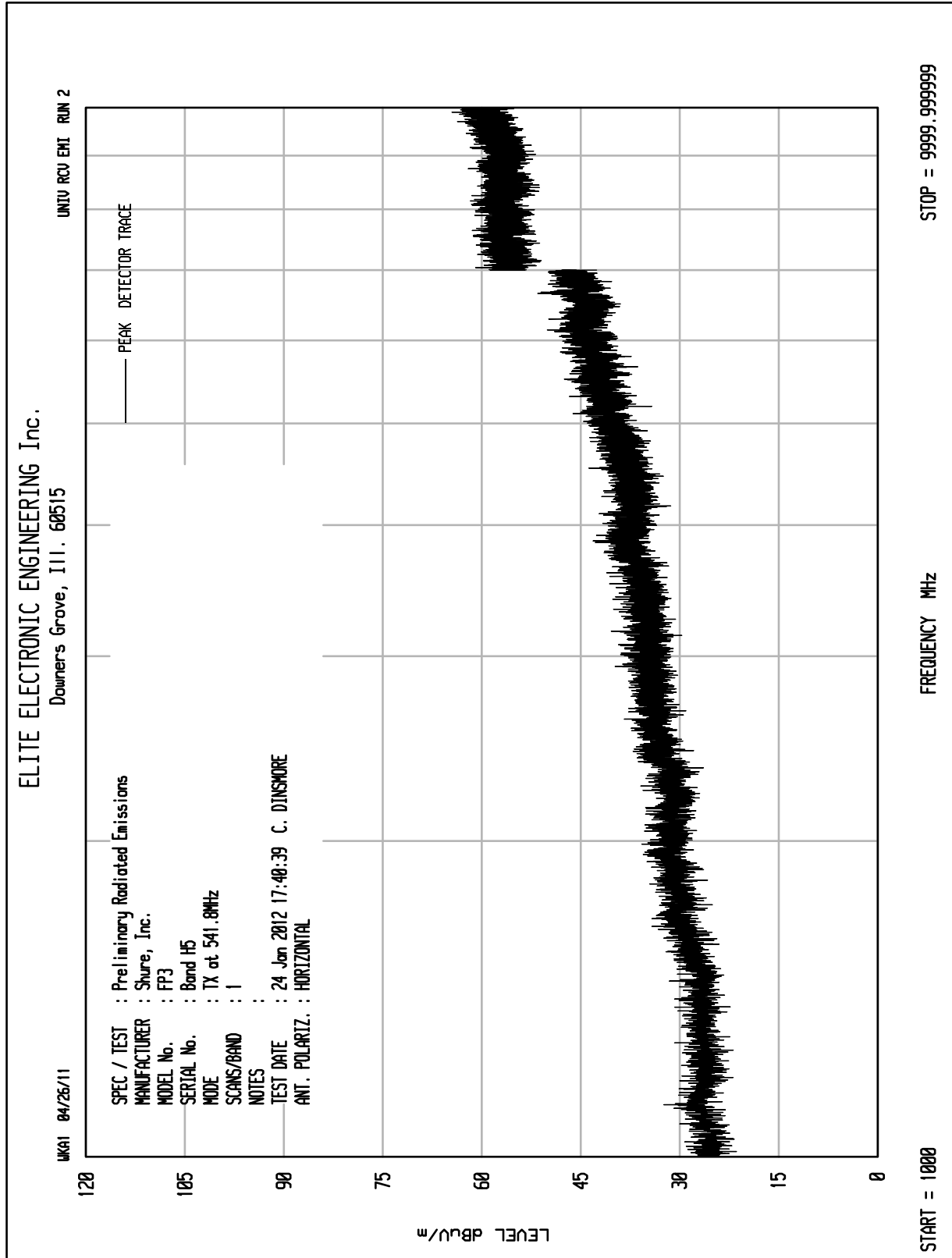


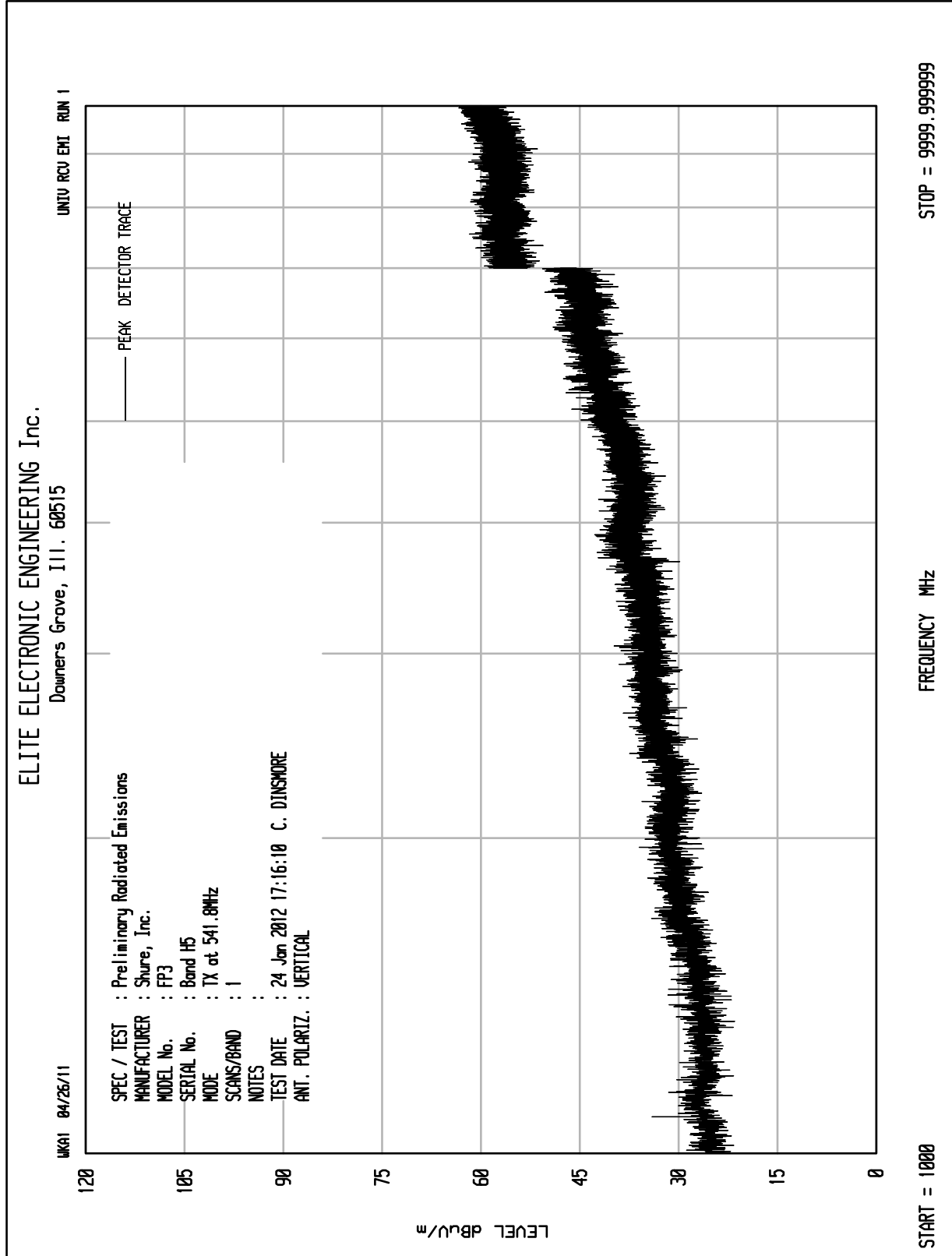


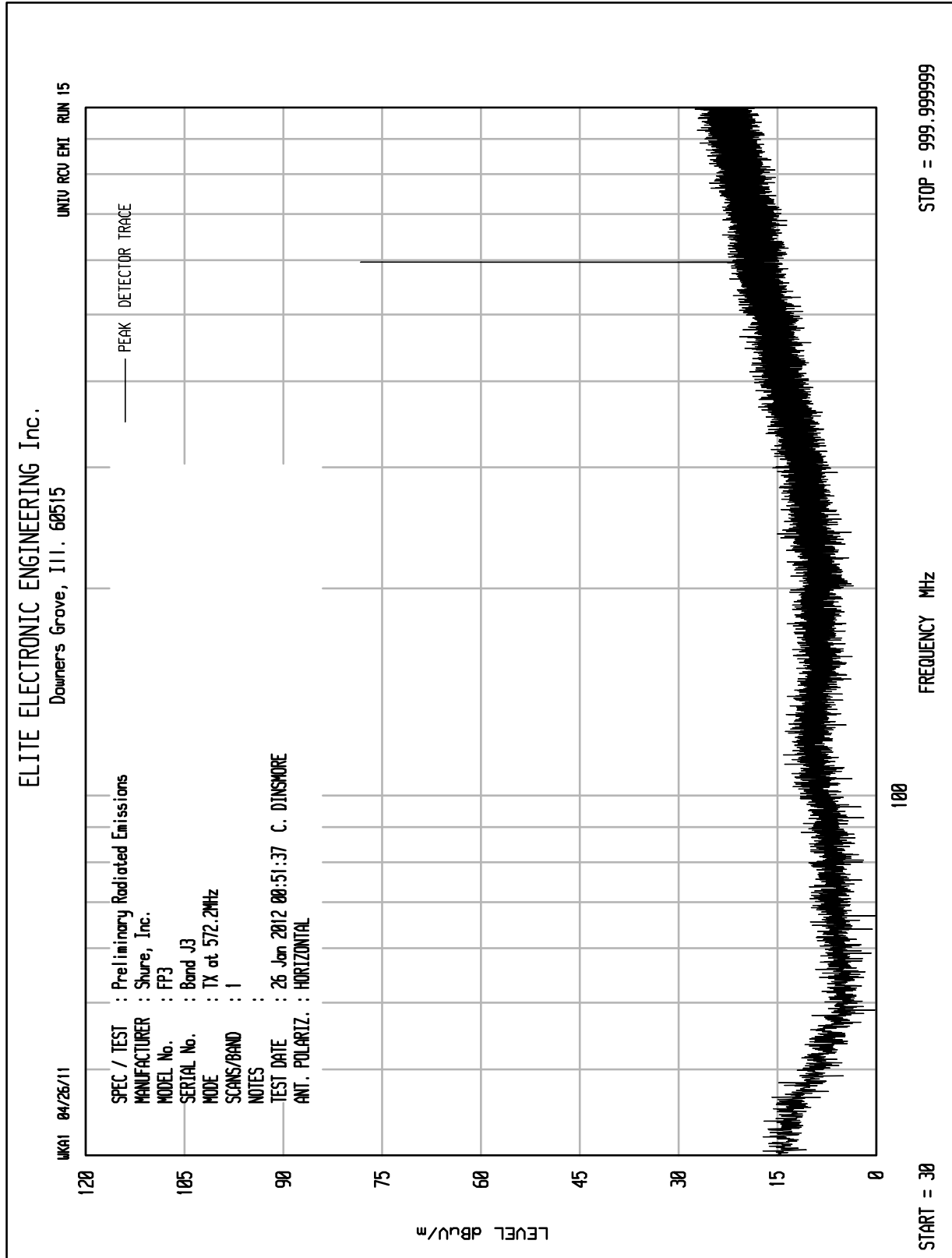


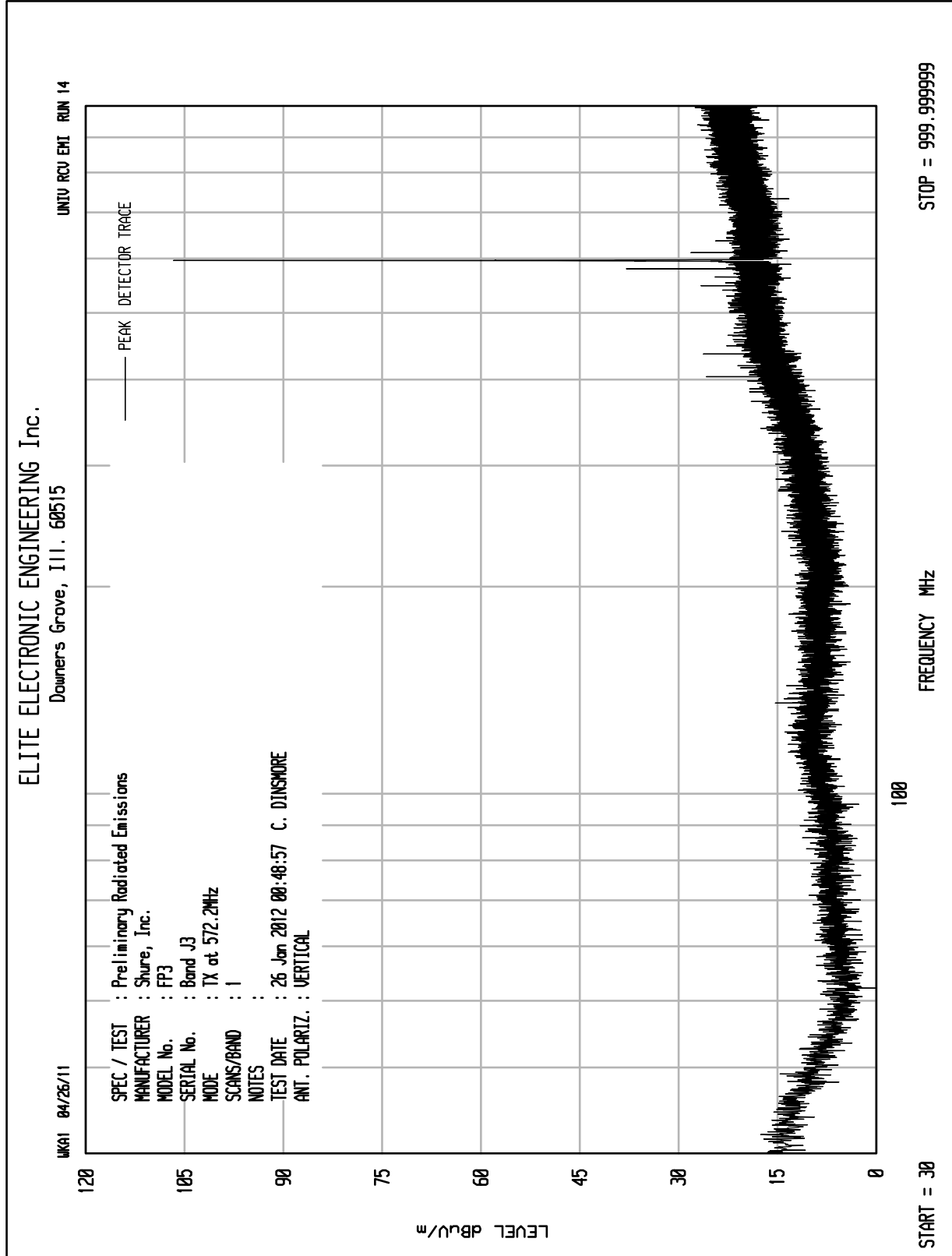


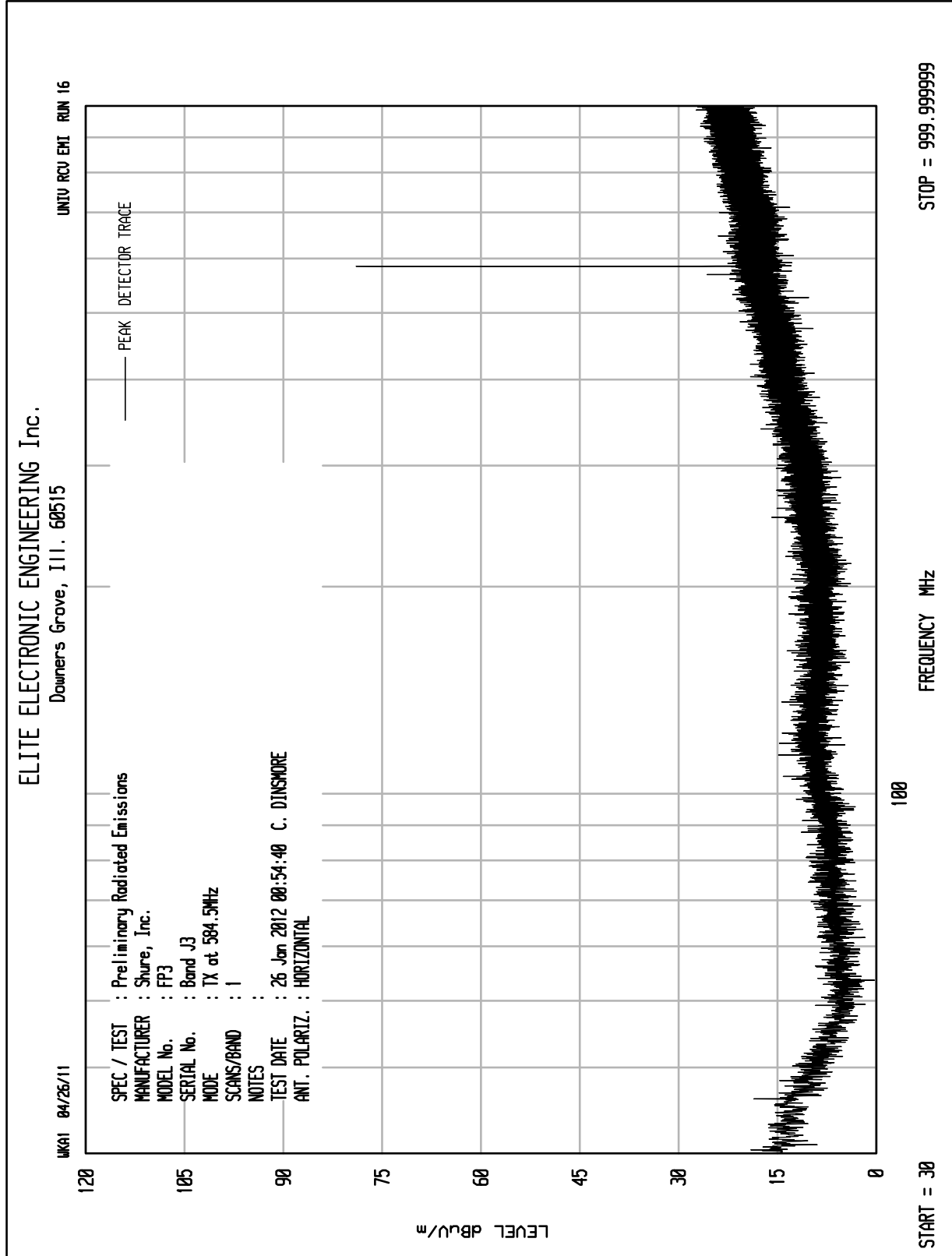


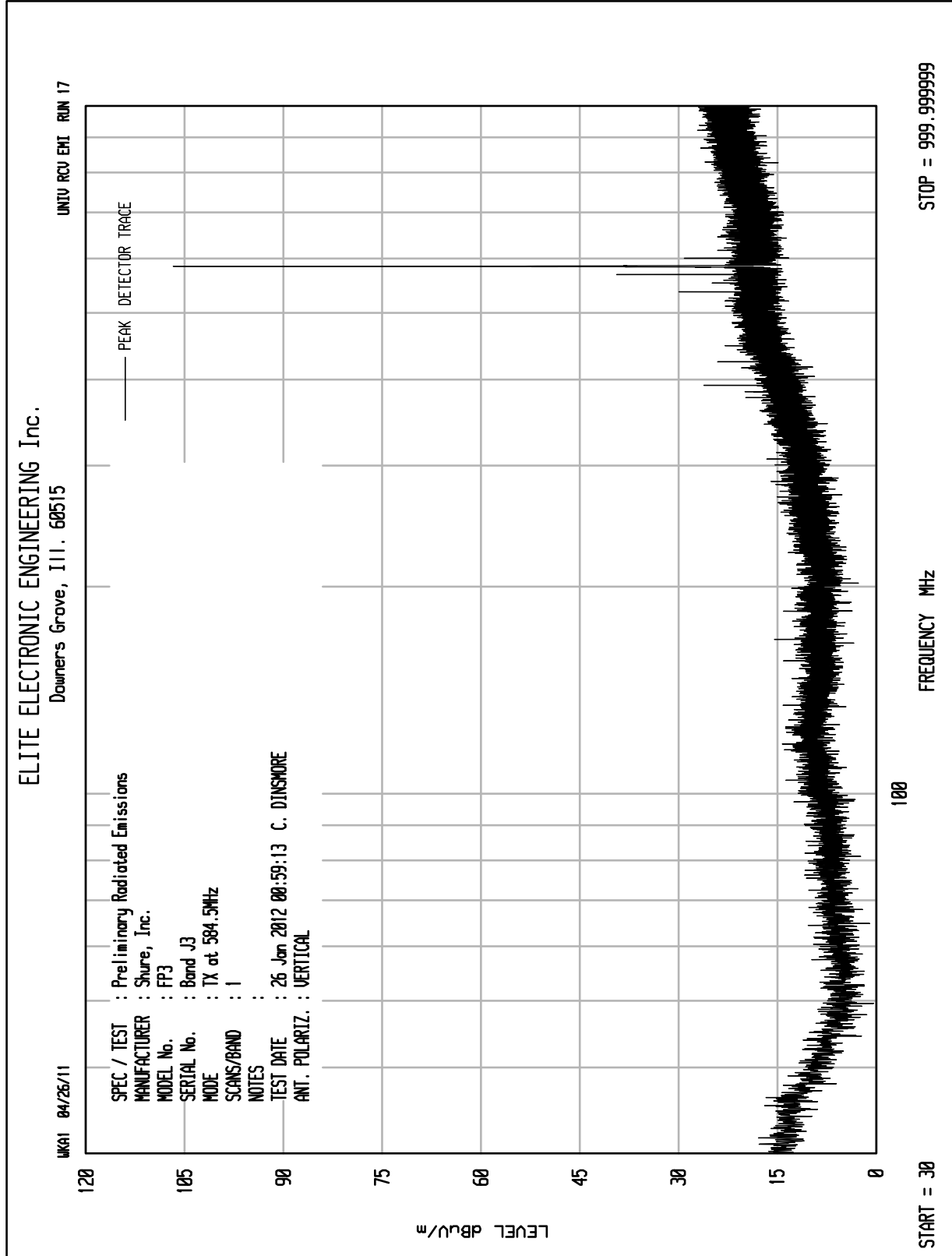


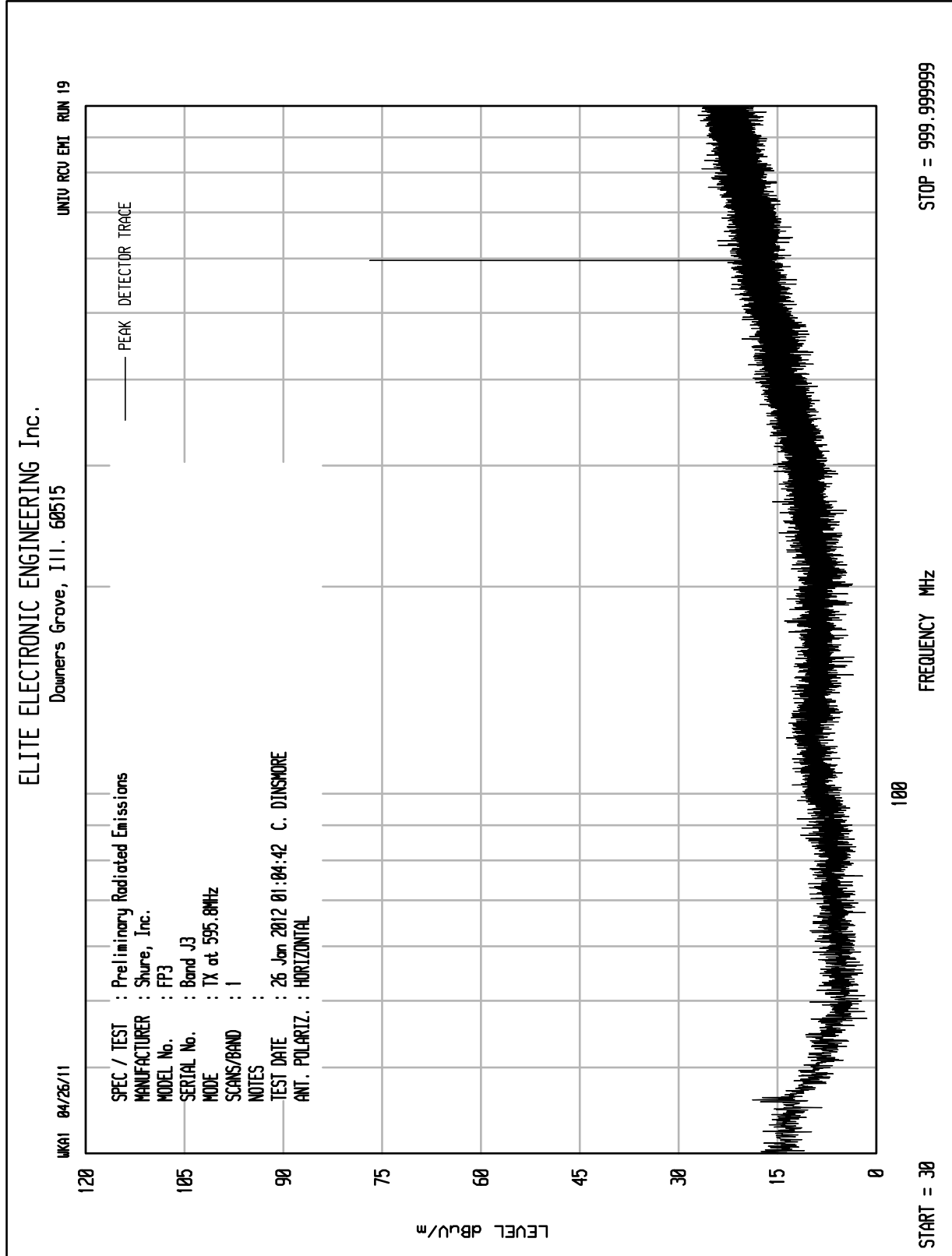


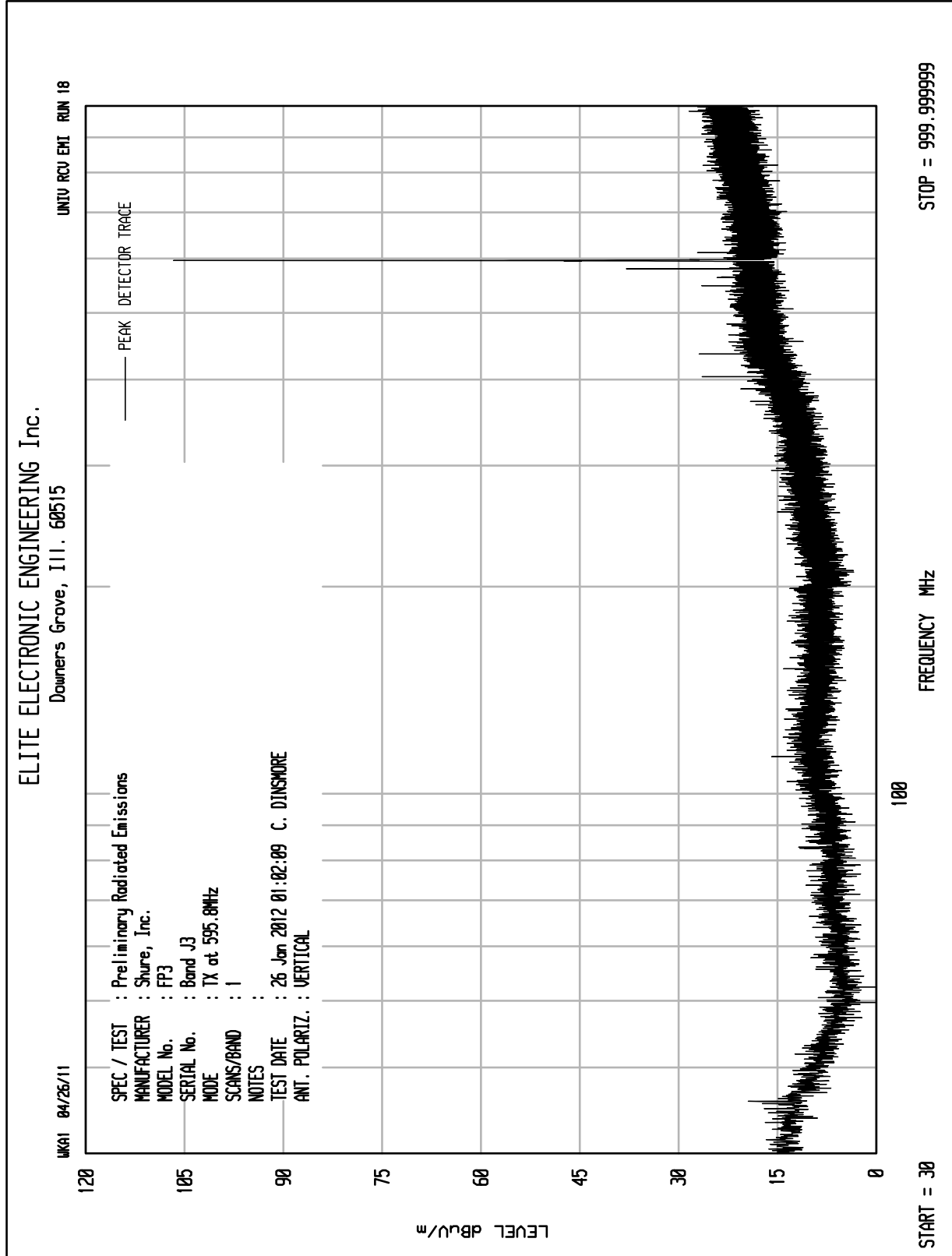


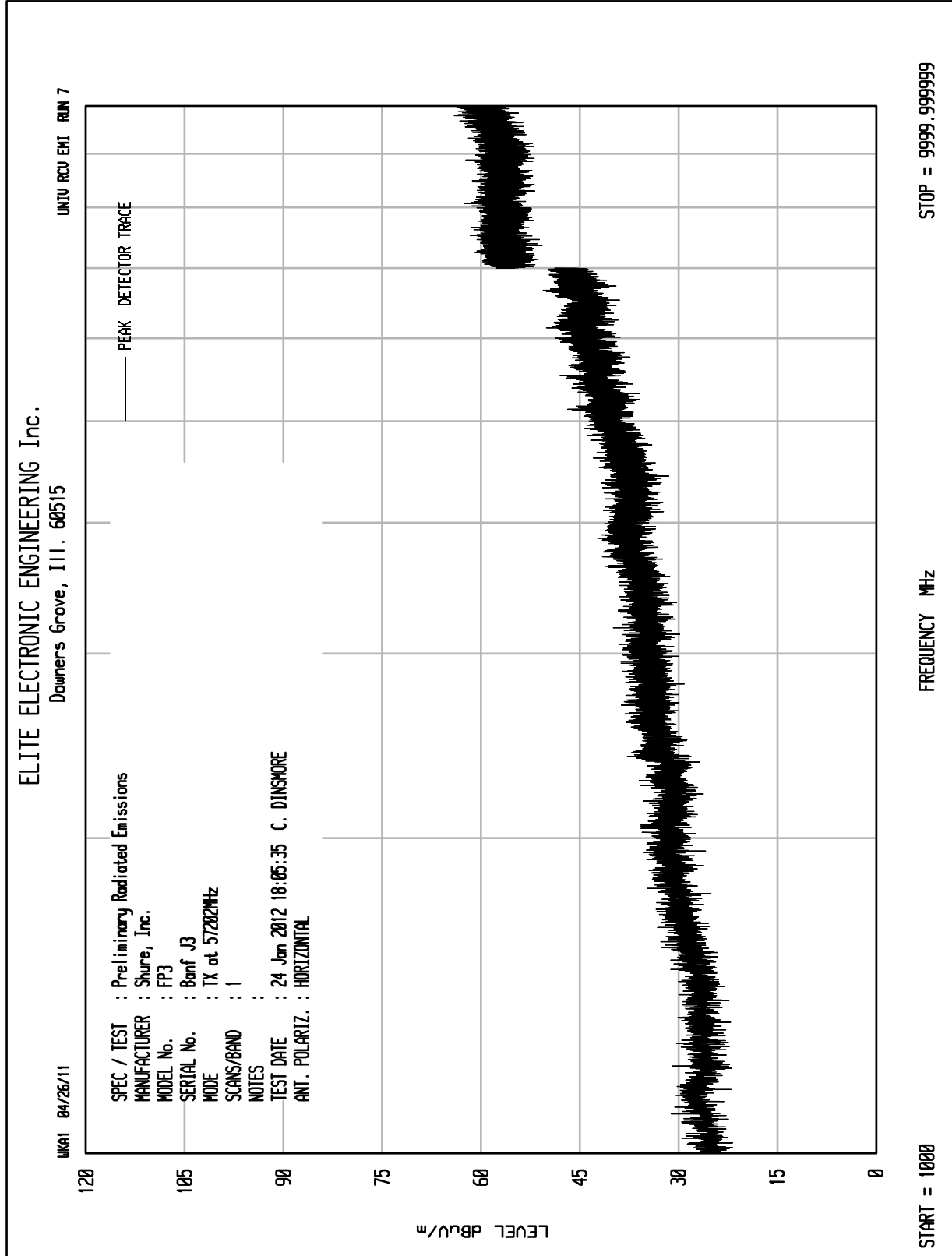


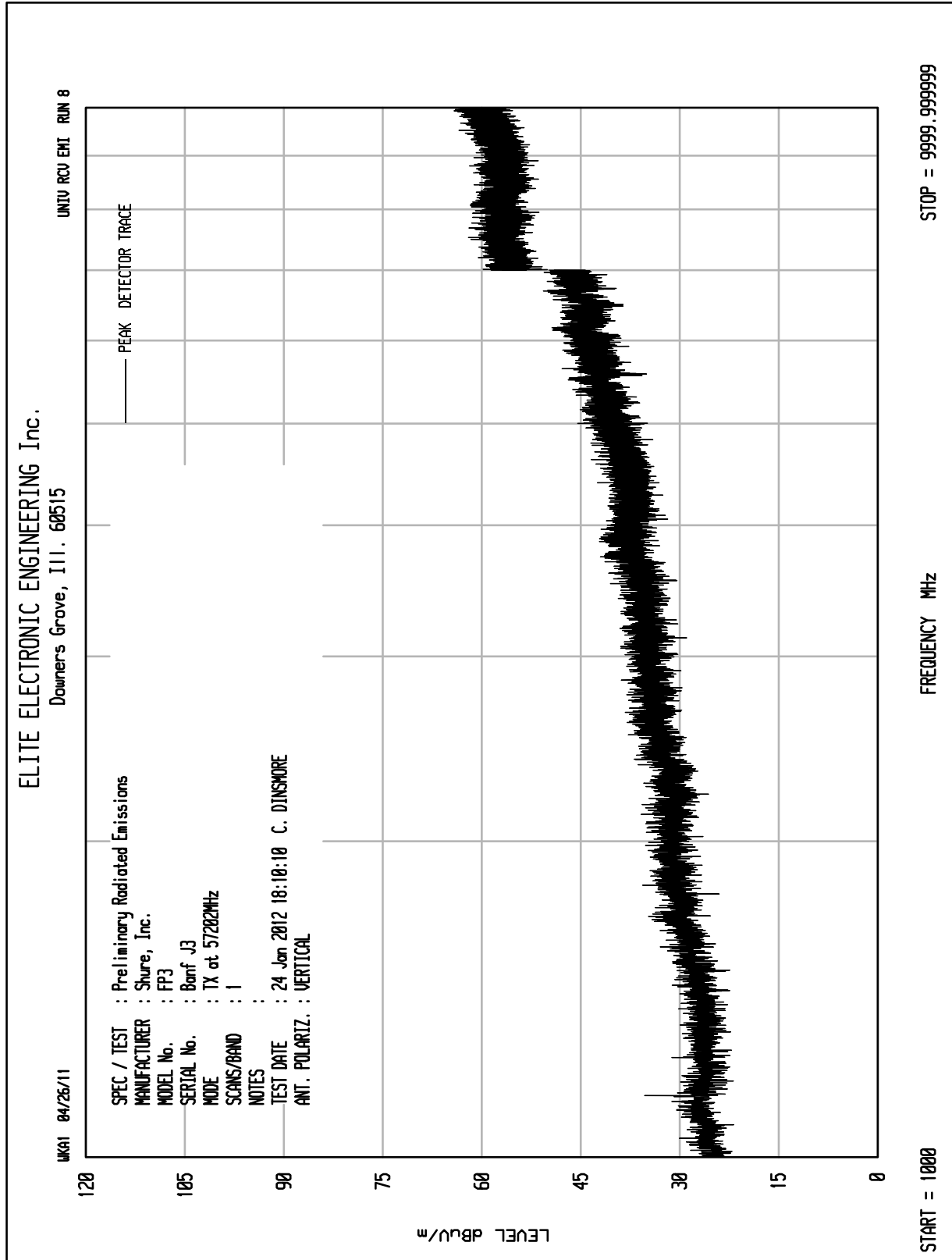


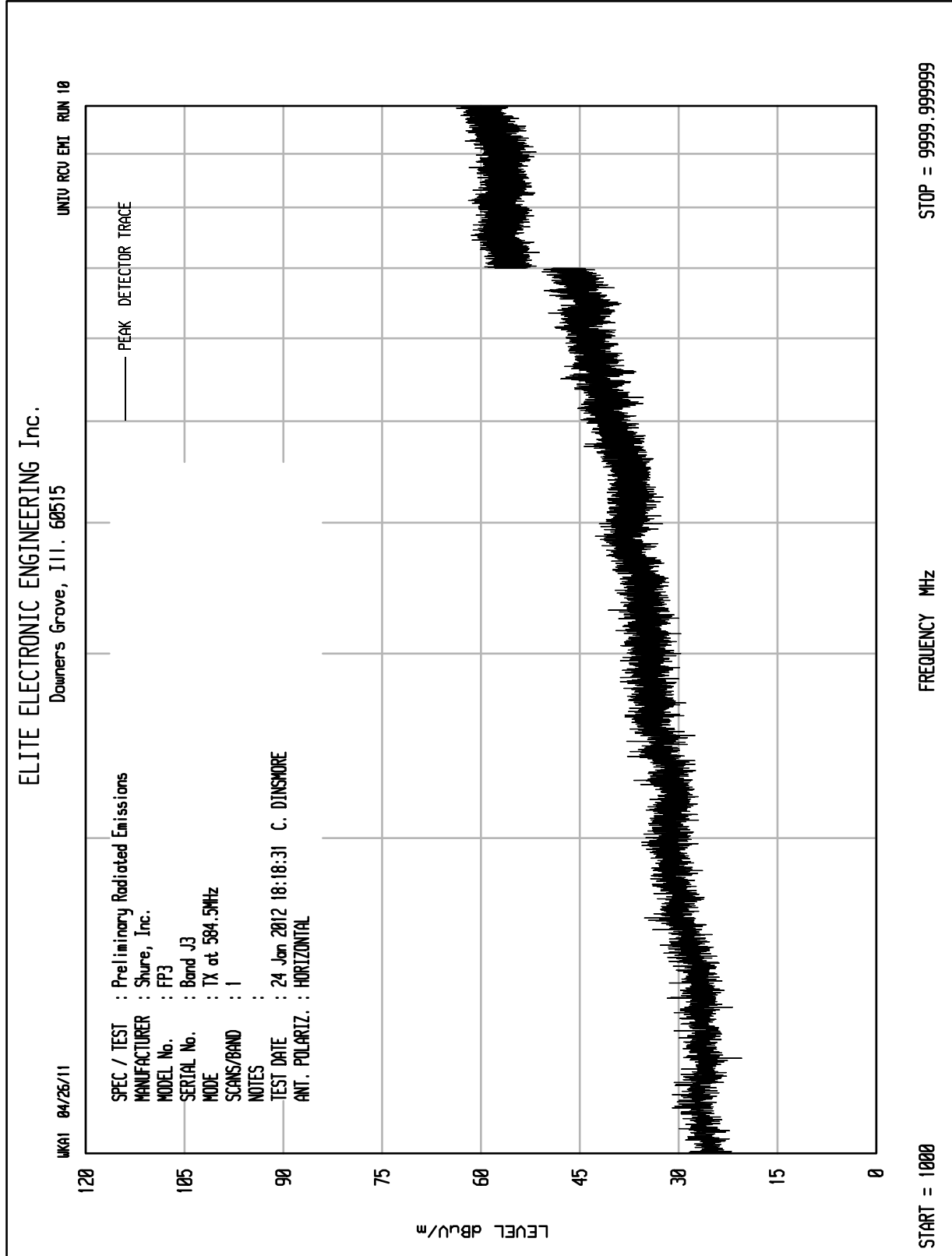


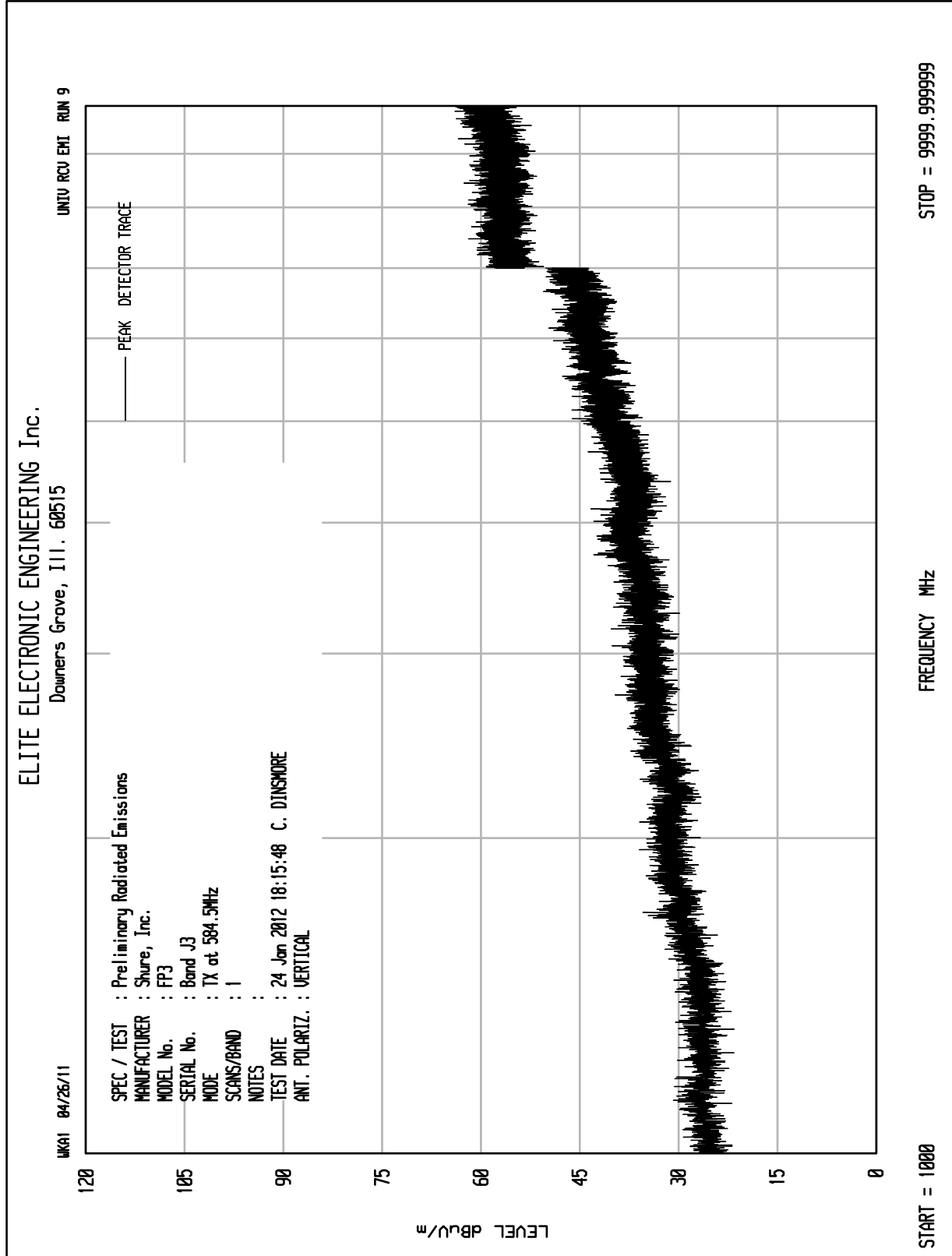


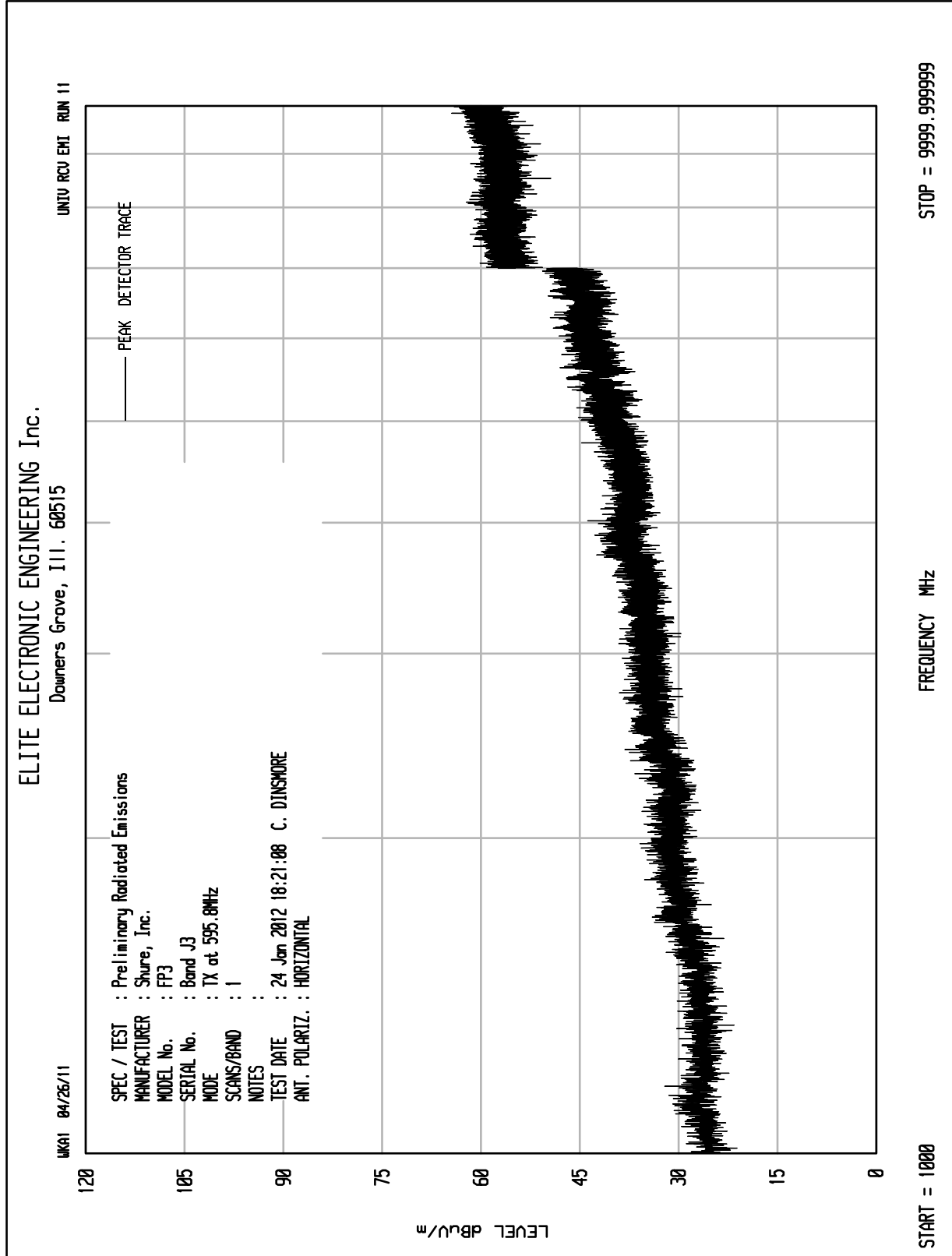










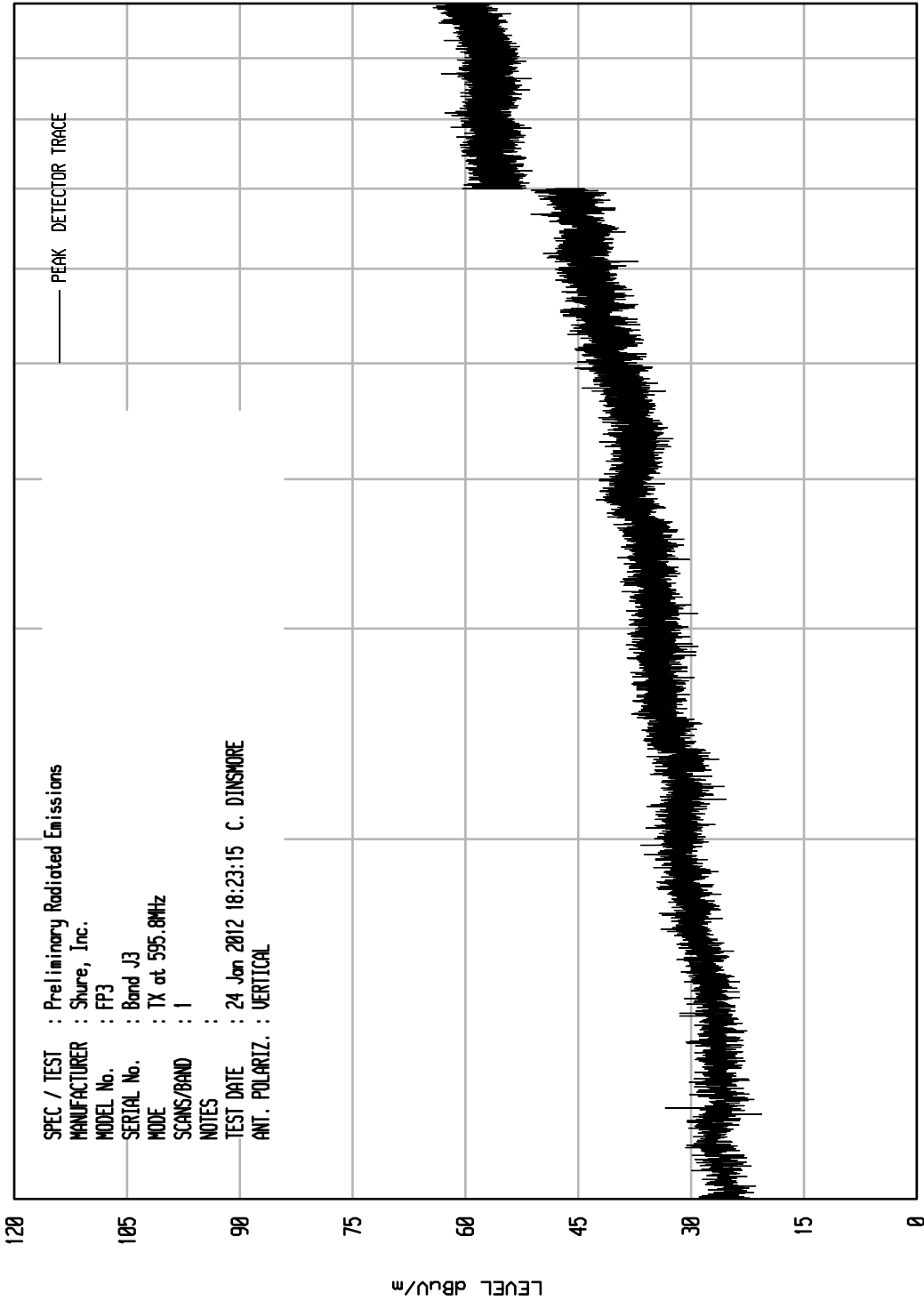


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515

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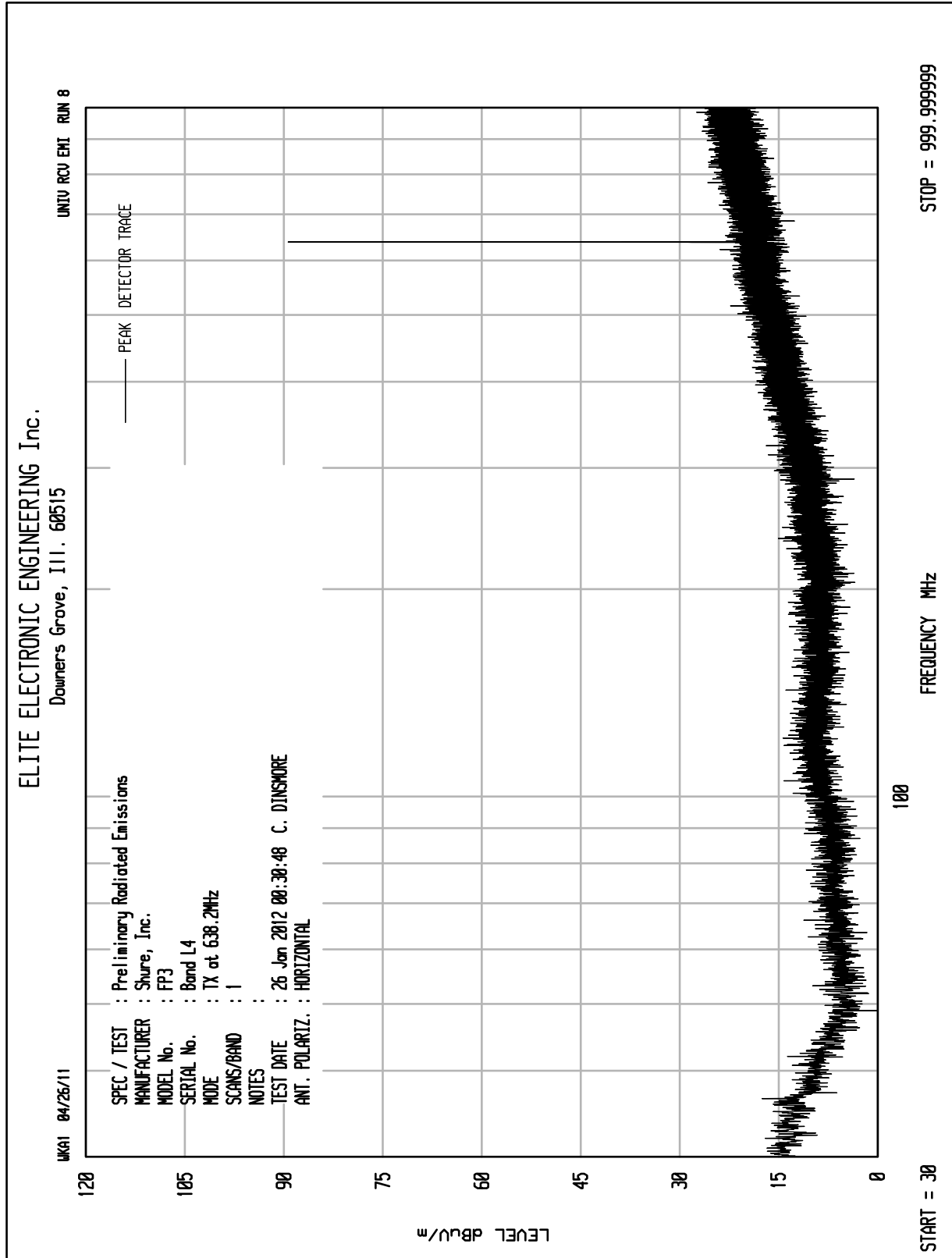
SPEC / TEST : Preliminary Radiated Emissions
 MANUFACTURER : Shure, Inc.
 MODEL No. : FP3
 SERIAL No. : Band J3
 MODE : TX at 595.8MHz
 SCANS/BAND : 1
 NOTES :
 TEST DATE : 24 Jan 2012 18:23:15 C. DINSMORE
 ANT. POLARIZ. : VERTICAL

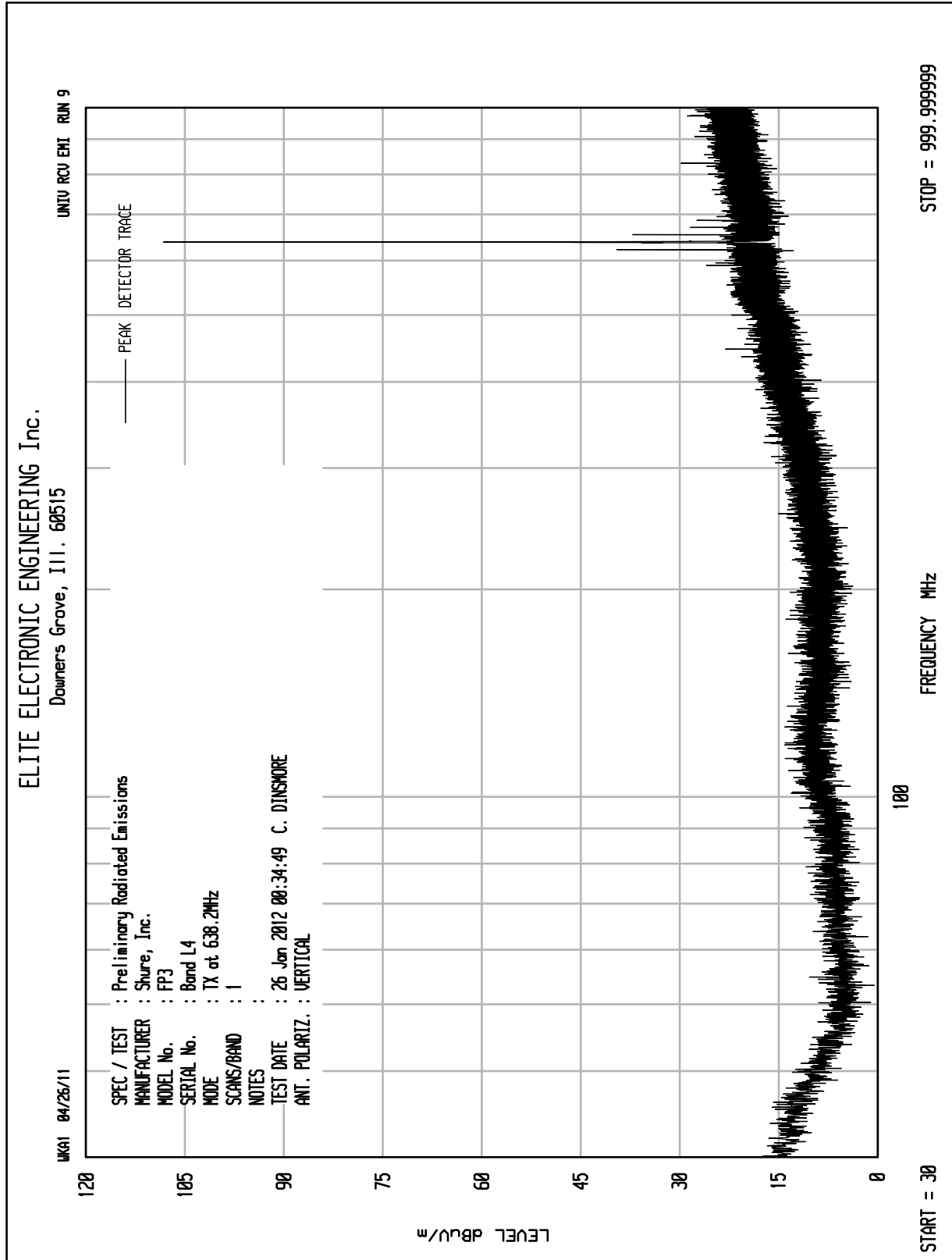


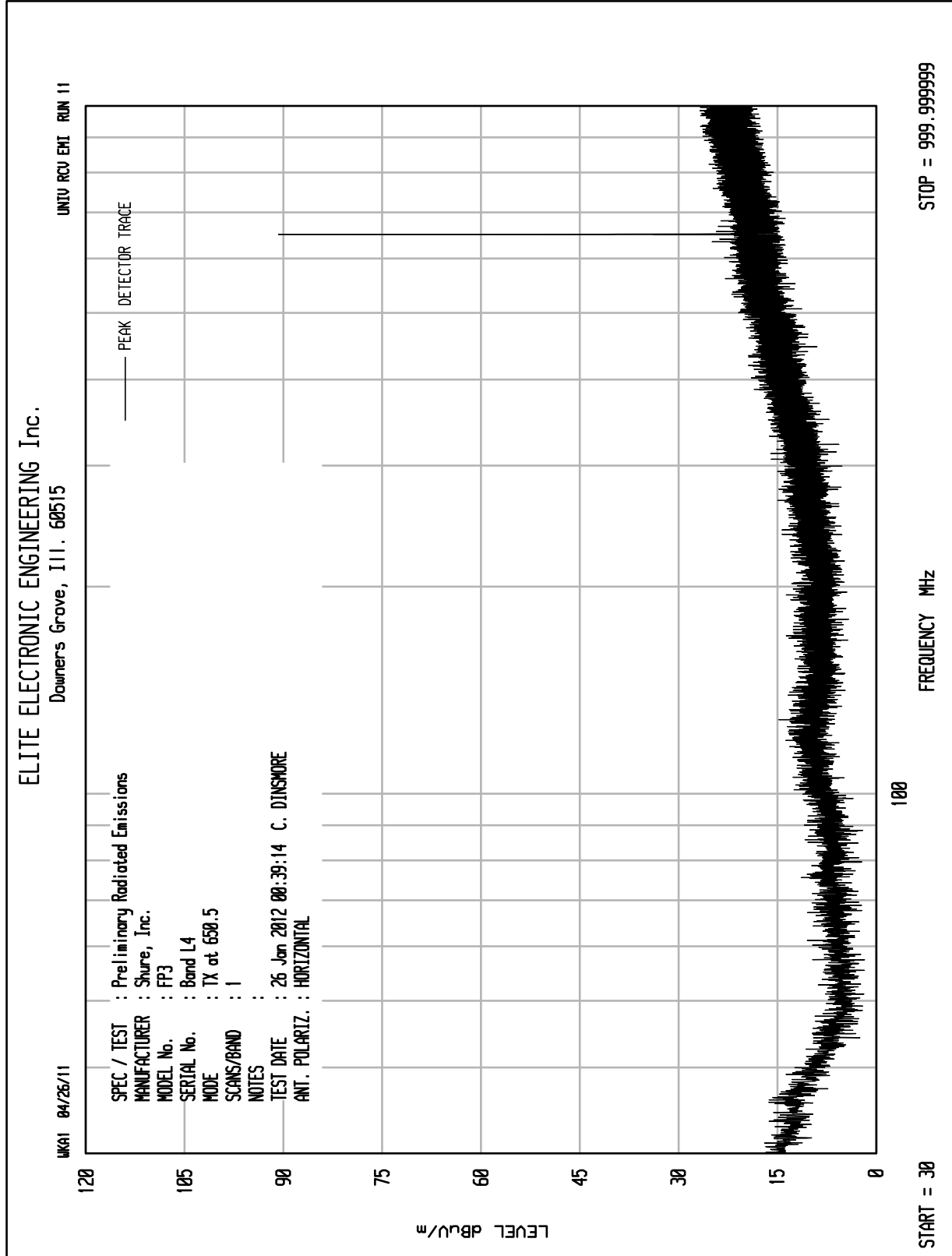
START = 1000

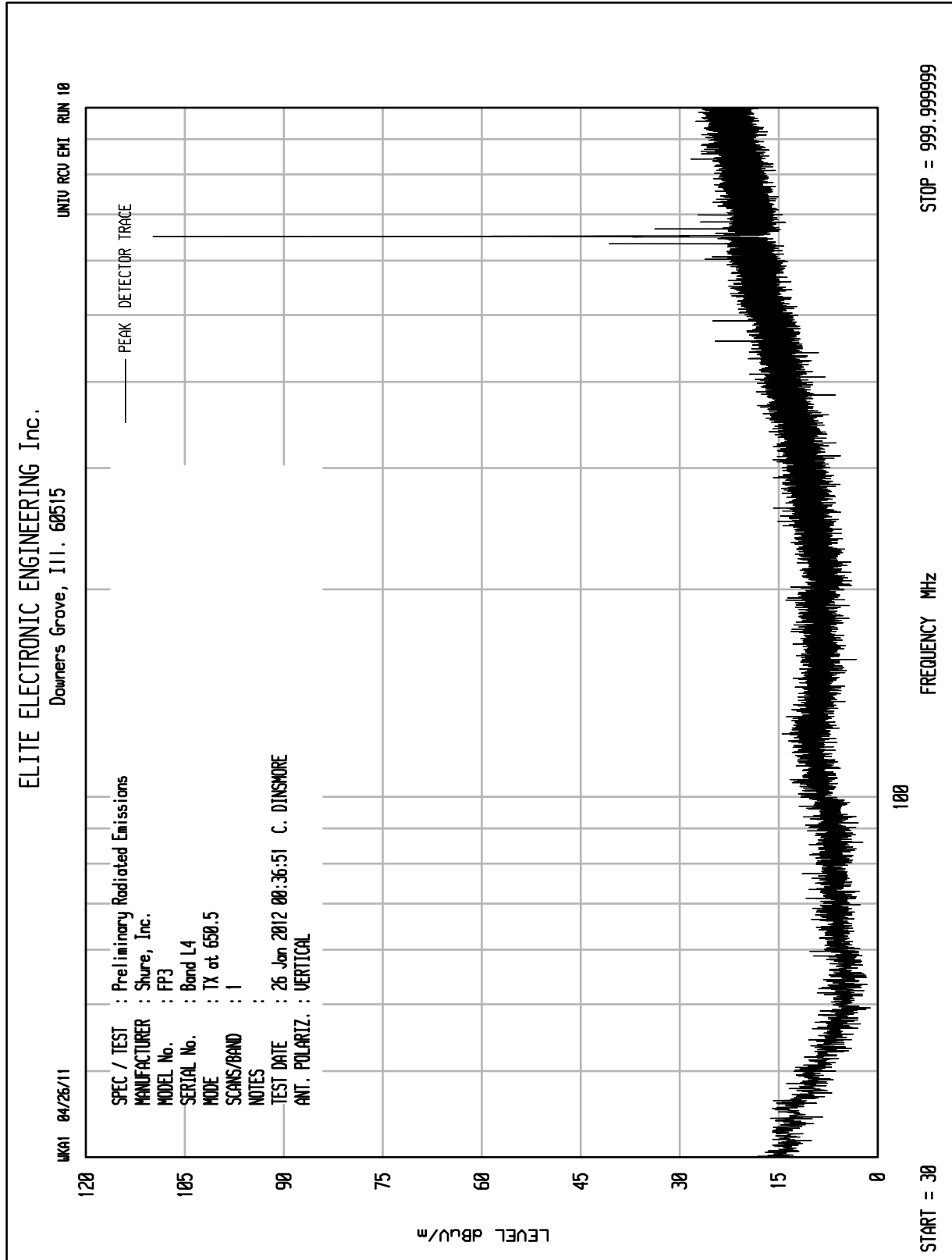
FREQUENCY MHz

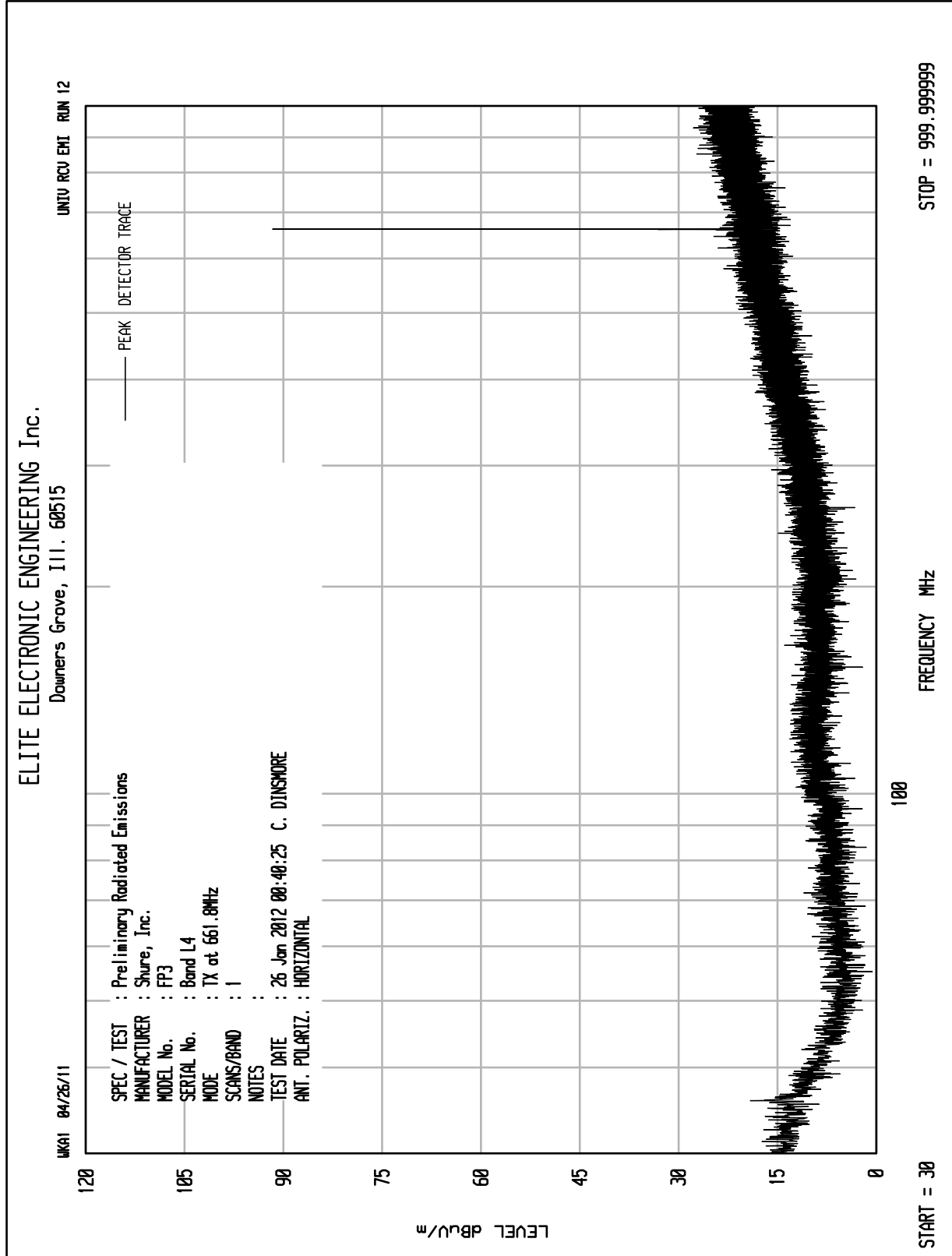
STOP = 9999.999999

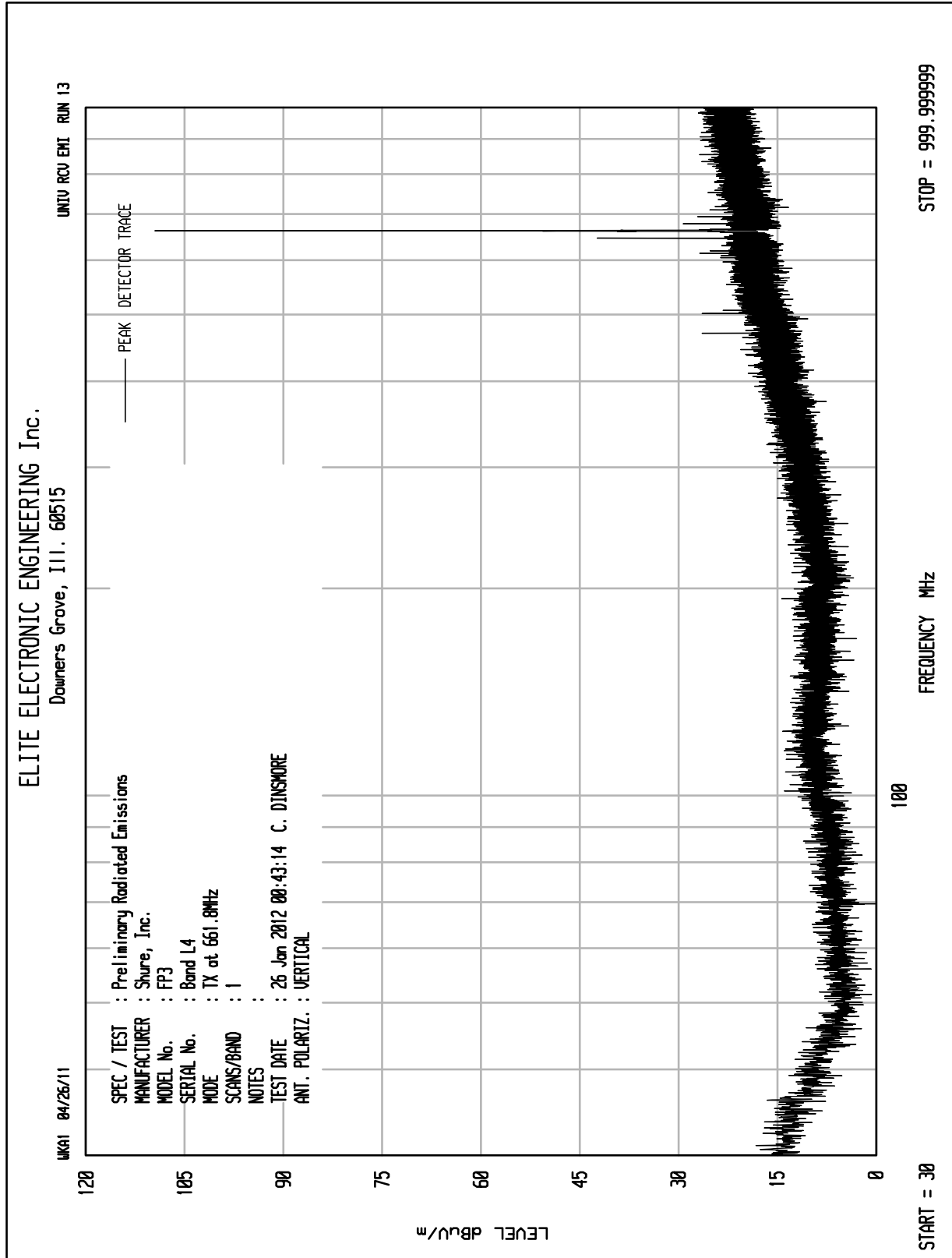


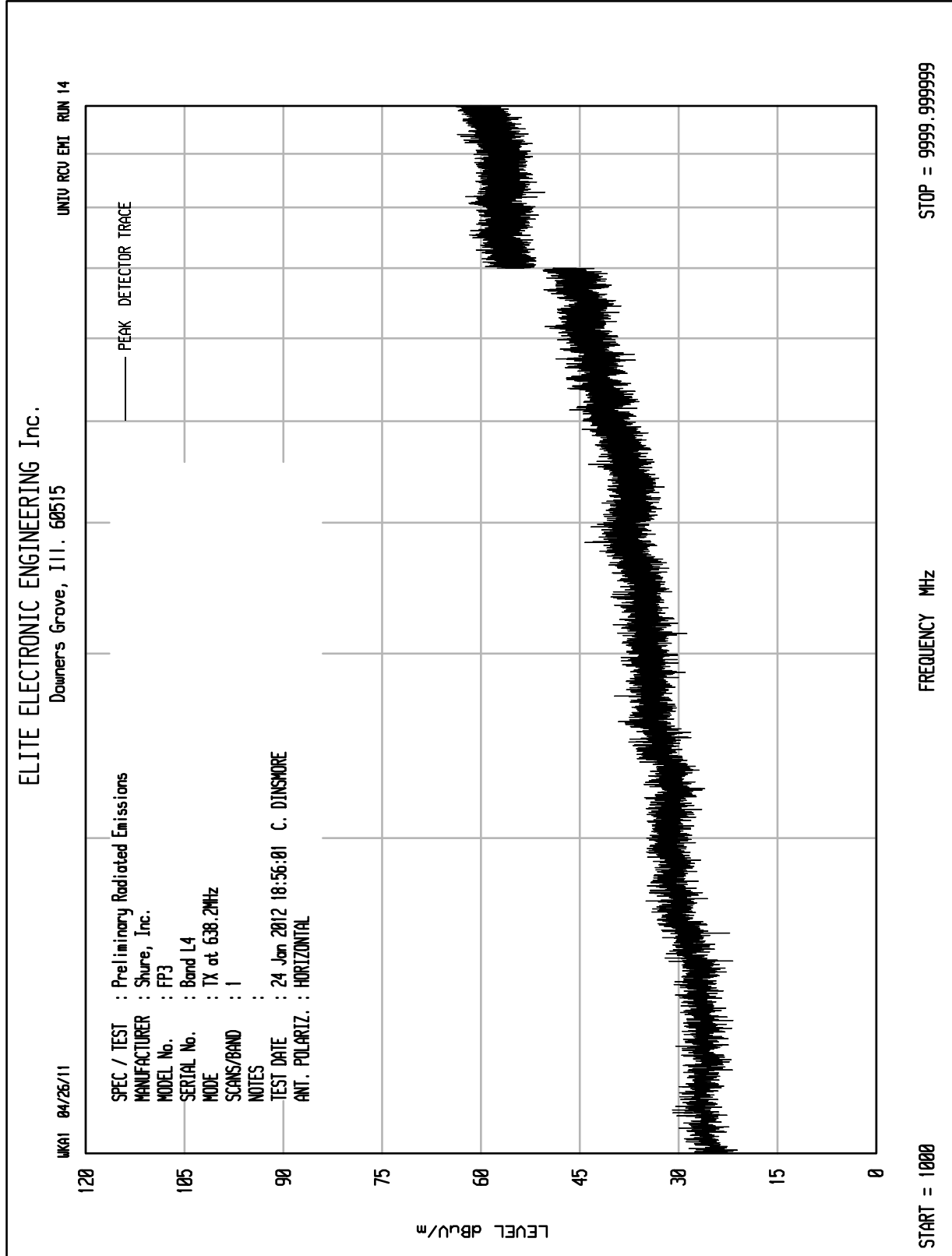


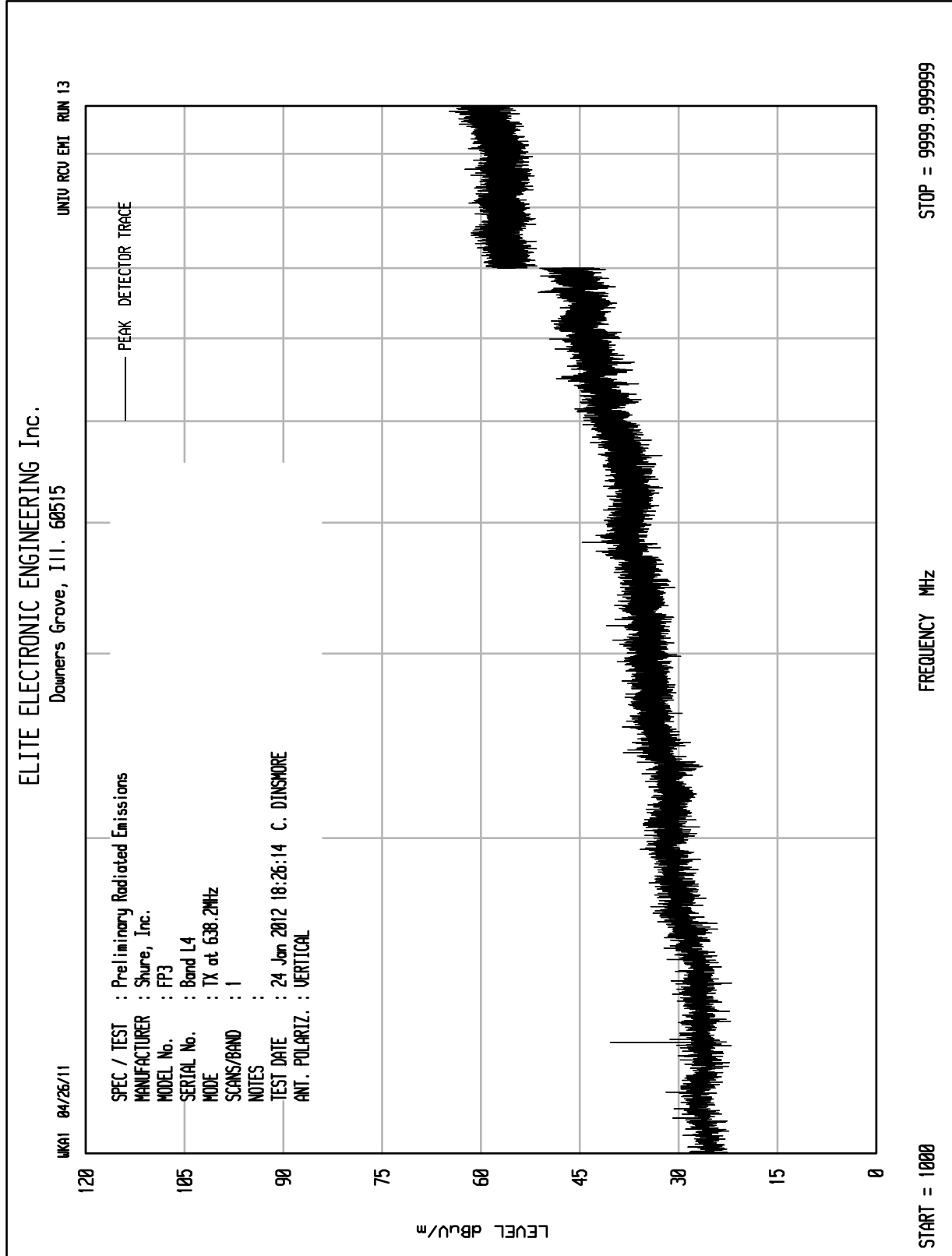


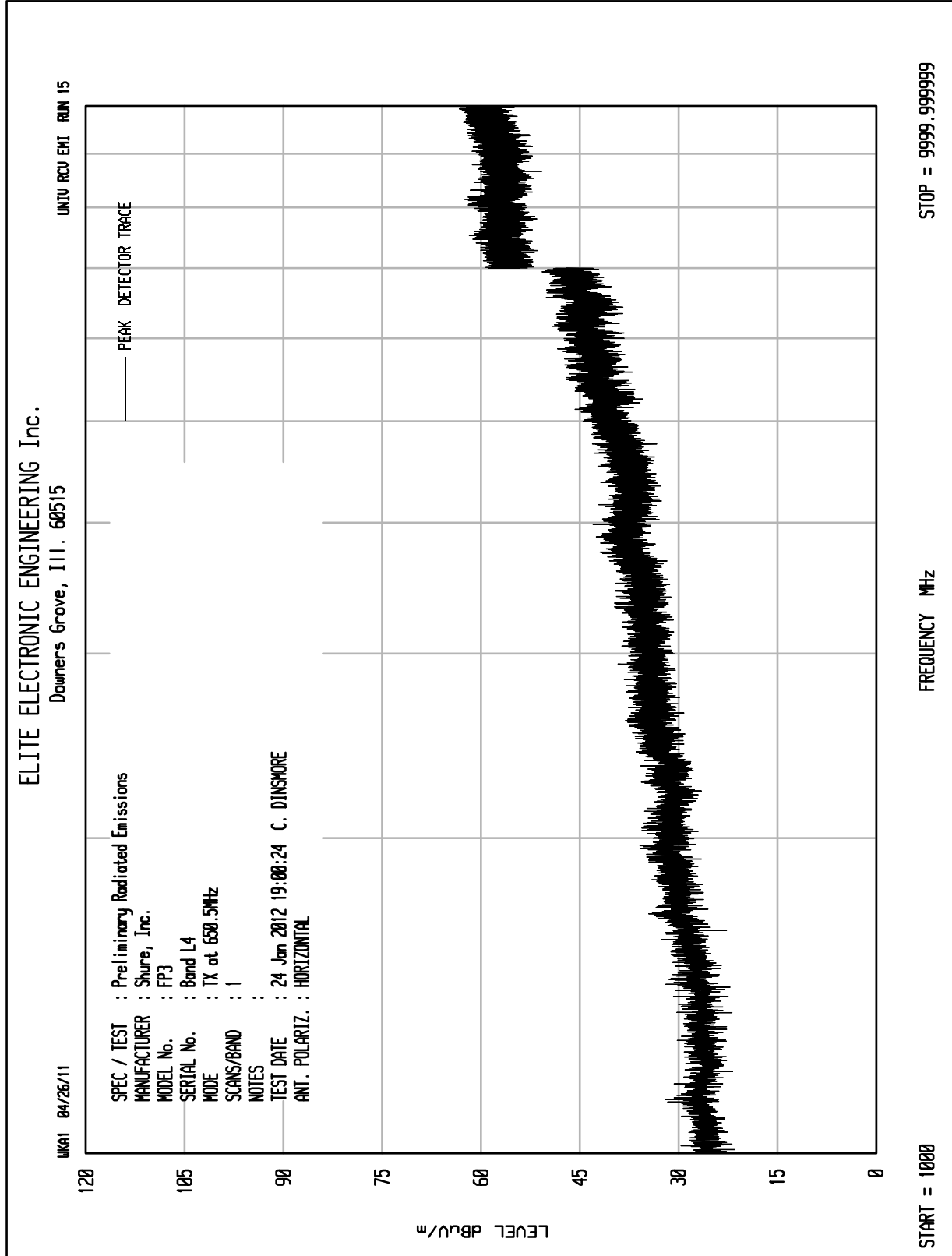


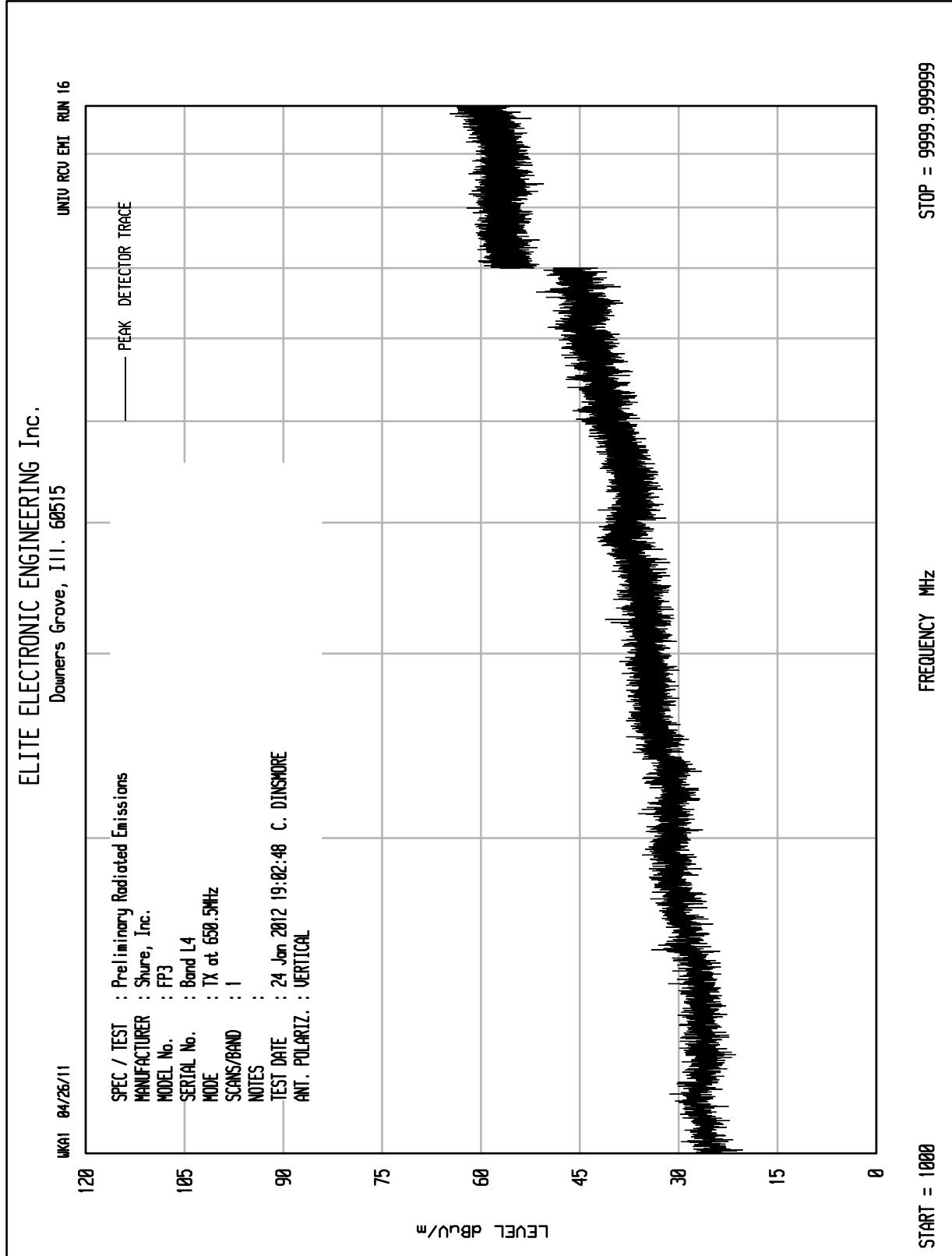


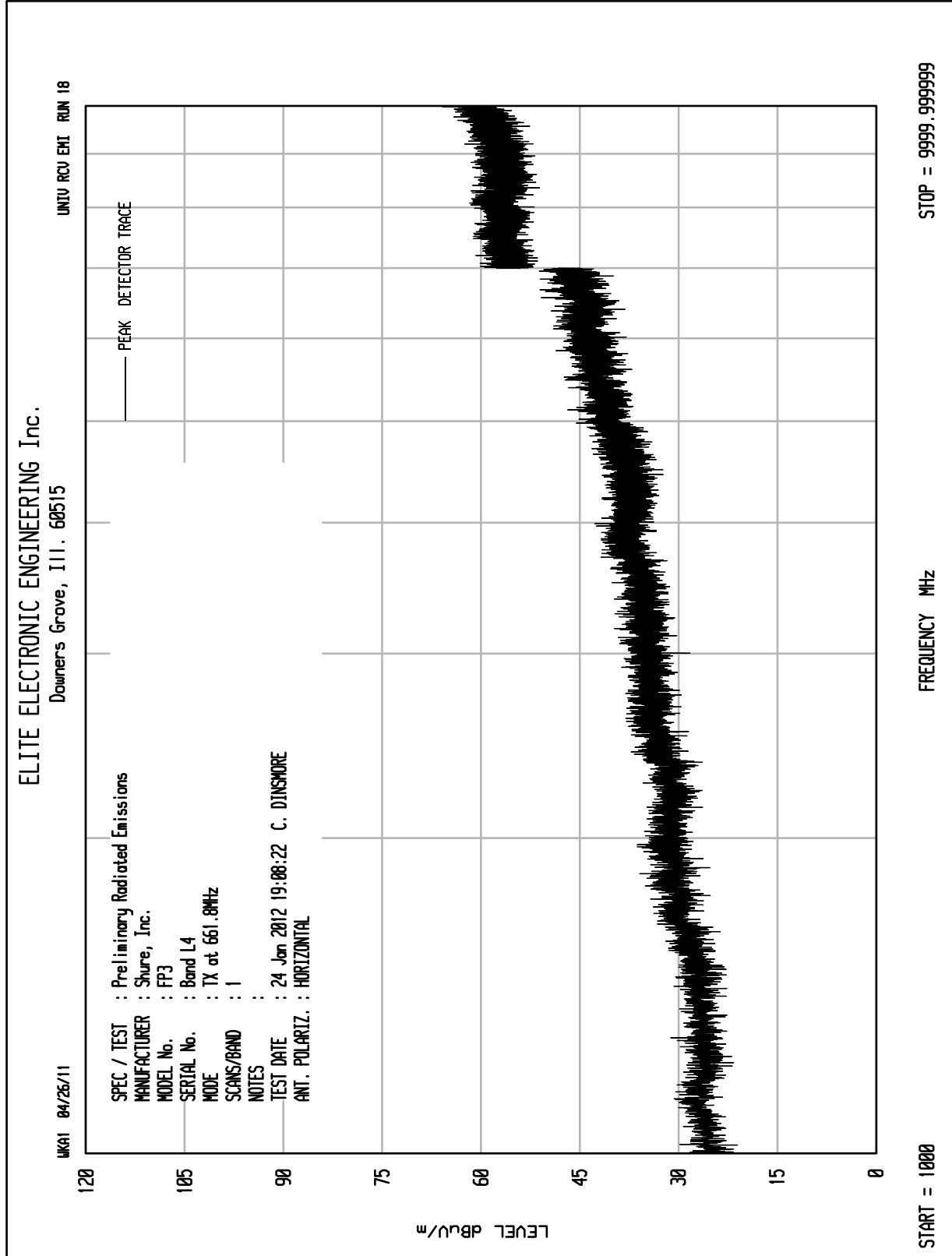


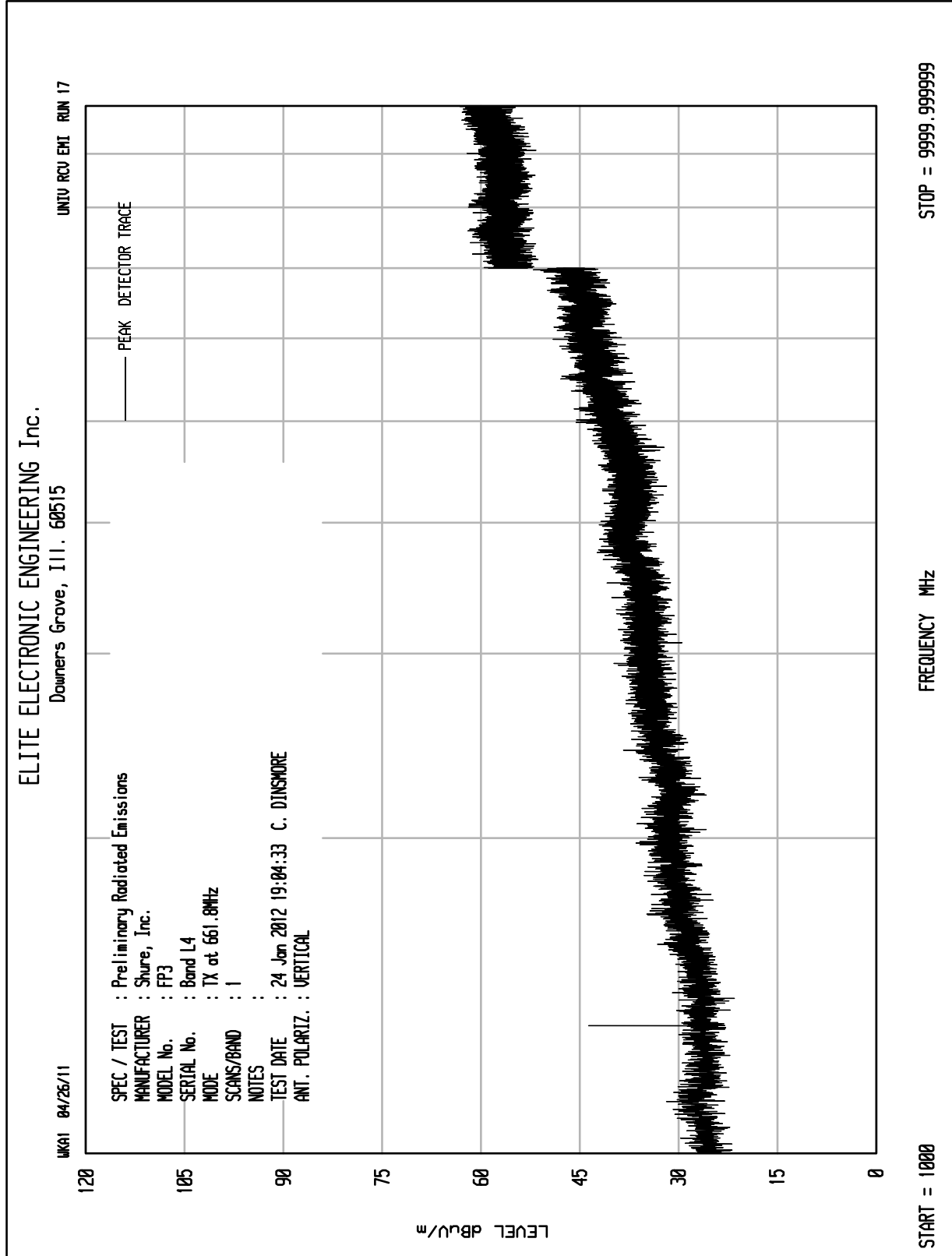














MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : December 16, 2011
 MODE : Transmit at 470.125MHz, 30mW (14.8dBm)
 BAND : G4
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
940.3	H	0.1		-73.7	0.0	2.0	-75.7	90.5	39.8
940.3	V	13.4		-58.3	0.0	2.0	-60.3	75.0	39.8
1410.4	H	2.8		-73.9	4.5	2.4	-71.7	86.5	39.8
1410.4	V	7.0		-69.5	4.5	2.4	-67.3	82.1	39.8
1880.5	H	0.5		-73.9	5.0	2.7	-71.6	86.3	39.8
1880.5	V	0.6		-73.0	5.0	2.7	-70.7	85.4	39.8
2350.6	H	2.5		-70.3	5.7	3.2	-67.8	82.6	39.8
2350.6	V	1.1		-69.7	5.7	3.2	-67.2	82.0	39.8
2820.8	H	1.8		-69.4	6.0	3.6	-67.0	81.8	39.8
2820.8	V	0.8		-68.0	6.0	3.6	-65.6	80.4	39.8
3290.9	H	1.9		-67.9	6.5	3.9	-65.2	80.0	39.8
3290.9	V	0.6		-67.3	6.5	3.9	-64.7	79.5	39.8
3761.0	H	6.8		-60.5	6.9	4.2	-57.8	72.6	39.8
3761.0	V	1.9		-64.4	6.9	4.2	-61.7	76.5	39.8
4231.1	H	3.2		-62.4	7.6	4.4	-59.2	74.0	39.8
4231.1	V	2.3		-63.2	7.6	4.4	-60.0	74.8	39.8
4701.3	H	1.2		-63.0	8.2	4.7	-59.5	74.3	39.8
4701.3	V	1.0		-63.5	8.2	4.7	-60.0	74.8	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Factor (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 481.75MHz, 30mW (14.8dBm)
 BAND : G4
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
963.5	H	0.9		-72.4	0.0	2.0	-74.4	89.2	39.8
963.5	V	11.1		-60.2	0.0	2.0	-62.2	77.0	39.8
1445.3	H	5.2		-71.5	4.7	2.4	-69.2	84.0	39.8
1445.3	V	8.2		-68.4	4.7	2.4	-66.1	80.9	39.8
1927.0	H	0.8		-73.4	5.1	2.8	-71.1	85.9	39.8
1927.0	V	2.6		-70.8	5.1	2.8	-68.5	83.2	39.8
2408.8	H	2.4		-70.2	5.8	3.2	-67.7	82.4	39.8
2408.8	V	2.8		-67.7	5.8	3.2	-65.1	79.9	39.8
2890.5	H	0.8		-70.2	6.0	3.6	-67.8	82.6	39.8
2890.5	V	0.6		-68.0	6.0	3.6	-65.6	80.4	39.8
3372.3	H	1.6		-67.9	6.6	3.9	-65.2	80.0	39.8
3372.3	V	2.0		-65.8	6.6	3.9	-63.1	77.9	39.8
3854.0	H	3.0		-63.7	6.9	4.2	-61.0	75.8	39.8
3854.0	V	2.8		-63.0	6.9	4.2	-60.4	75.1	39.8
4335.8	H	2.6		-62.9	7.9	4.5	-59.5	74.3	39.8
4335.8	V	3.9		-61.7	7.9	4.5	-58.4	73.1	39.8
4817.5	H	1.5		-62.0	8.1	4.7	-58.7	73.4	39.8
4817.5	V	1.6		-62.2	8.1	4.7	-58.8	73.6	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 493.82MHz, 30mW (14.8dBm)
 BAND : G4
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GX1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
987.7	H	1.6		-71.4	0.0	2.0	-73.4	88.1	39.8
987.7	V	11.0		-60.8	0.0	2.0	-62.8	77.6	39.8
1481.5	H	3.5		-73.2	4.8	2.5	-70.8	85.6	39.8
1481.5	V	4.5		-72.2	4.8	2.5	-69.8	84.6	39.8
1975.3	H	3.8		-70.2	5.1	2.8	-67.9	82.7	39.8
1975.3	V	5.2		-67.9	5.1	2.8	-65.6	80.4	39.8
2469.1	H	0.5		-72.0	5.9	3.3	-69.4	84.1	39.8
2469.1	V	0.7		-69.5	5.9	3.3	-66.9	81.6	39.8
2963.0	H	0.4		-70.3	6.0	3.7	-68.0	82.8	39.8
2963.0	V	1.0		-67.3	6.0	3.7	-65.0	79.8	39.8
3456.8	H	0.4		-68.9	6.8	4.0	-66.1	80.9	39.8
3456.8	V	-0.8		-68.5	6.8	4.0	-65.8	80.5	39.8
3950.6	H	0.2		-65.8	6.9	4.3	-63.2	78.0	39.8
3950.6	V	0.8		-64.5	6.9	4.3	-61.9	76.7	39.8
4444.4	H	0.8		-64.6	8.2	4.5	-61.0	75.8	39.8
4444.4	V	2.2		-63.6	8.2	4.5	-60.0	74.8	39.8
4938.3	H	0.2		-62.6	8.0	4.8	-59.4	74.2	39.8
4938.3	V	1.0		-62.0	8.0	4.8	-58.8	73.5	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : FCC-74 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 481.75MHz, 30mW (14.8dBm)
 BAND : G4
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	Part 74 Min. Attn. dB
963.5	H	4.2		-69.1	0.0	2.0	-71.1	85.9	27.8
963.5	V	13.2		-58.1	0.0	2.0	-60.1	74.9	27.8
1445.3	H	15.8		-60.9	4.7	2.4	-58.6	73.4	27.8
1445.3	V	17.3		-59.3	4.7	2.4	-57.0	71.8	27.8
1927.0	H	15.7		-58.5	5.1	2.8	-56.2	71.0	27.8
1927.0	V	16.0		-57.4	5.1	2.8	-55.1	69.8	27.8
2408.8	H	16.2		-56.4	5.8	3.2	-53.9	68.6	27.8
2408.8	V	16.5		-54.0	5.8	3.2	-51.4	66.2	27.8
2890.5	H	14.9		-56.1	6.0	3.6	-53.7	68.5	27.8
2890.5	V	15.2		-53.4	6.0	3.6	-51.0	65.8	27.8
3372.3	H	15.9		-53.6	6.6	3.9	-50.9	65.7	27.8
3372.3	V	15.8		-52.0	6.6	3.9	-49.3	64.1	27.8
3854.0	H	16.2		-50.5	6.9	4.2	-47.8	62.6	27.8
3854.0	V	16.0		-49.8	6.9	4.2	-47.2	61.9	27.8
4335.8	H	15.9		-49.6	7.9	4.5	-46.2	61.0	27.8
4335.8	V	16.2		-49.4	7.9	4.5	-46.1	60.8	27.8
4817.5	H	16.5		-47.0	8.1	4.7	-43.7	58.4	27.8
4817.5	V	16.2		-47.6	8.1	4.7	-44.2	59.0	27.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : December 16, 2011
 MODE : Transmit at 494.125MHz, 30mW (14.8dBm)
 BAND : G5
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GX A1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
988.3	H	3.2		-69.8	0.0	2.0	-71.8	86.5	39.8
988.3	V	11.6		-60.2	0.0	2.0	-62.2	77.0	39.8
1482.4	H	-1.1		-77.8	4.8	2.5	-75.4	90.2	39.8
1482.4	V	2.7		-74.0	4.8	2.5	-71.6	86.4	39.8
1976.5	H	-0.2		-74.2	5.1	2.8	-71.9	86.7	39.8
1976.5	V	7.2		-65.9	5.1	2.8	-63.6	78.4	39.8
2470.6	H	0.4		-72.1	5.9	3.3	-69.5	84.2	39.8
2470.6	V	2.2		-68.0	5.9	3.3	-65.3	80.1	39.8
2964.8	H	0.0		-70.7	6.0	3.7	-68.4	83.2	39.8
2964.8	V	1.5		-66.8	6.0	3.7	-64.5	79.3	39.8
3458.9	H	0.2		-69.2	6.8	4.0	-66.4	81.1	39.8
3458.9	V	1.8		-65.9	6.8	4.0	-63.2	77.9	39.8
3953.0	H	0.4		-65.6	6.9	4.3	-63.0	77.8	39.8
3953.0	V	0.5		-64.8	6.9	4.3	-62.2	77.0	39.8
4447.1	H	-0.2		-65.6	8.2	4.5	-62.0	76.8	39.8
4447.1	V	0.2		-65.6	8.2	4.5	-62.0	76.8	39.8
4941.3	H	0.3		-62.5	8.0	4.8	-59.3	74.1	39.8
4941.3	V	0.2		-62.8	8.0	4.8	-59.6	74.3	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Factor (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 505.75MHz, 30mW (14.8dBm)
 BAND : G5
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
1011.5	H	4.2		-71.2	2.6	2.0	-70.6	85.3	39.8
1011.5	V	7.2		-69.1	2.6	2.0	-68.5	83.2	39.8
1517.3	H	1.8		-74.8	4.9	2.5	-72.4	87.1	39.8
1517.3	V	3.8		-72.7	4.9	2.5	-70.3	85.1	39.8
2023.0	H	11.5		-62.3	5.1	2.8	-60.0	74.8	39.8
2023.0	V	8.9		-63.9	5.1	2.8	-61.6	76.4	39.8
2528.8	H	0.8		-71.5	5.9	3.3	-68.9	83.6	39.8
2528.8	V	0.4		-69.5	5.9	3.3	-66.9	81.6	39.8
3034.5	H	-0.3		-70.8	6.1	3.7	-68.4	83.2	39.8
3034.5	V	-0.4		-68.6	6.1	3.7	-66.2	81.0	39.8
3540.3	H	-0.3		-69.2	6.8	4.0	-66.4	81.2	39.8
3540.3	V	-0.5		-68.0	6.8	4.0	-65.2	79.9	39.8
4046.0	H	1.1		-64.6	7.0	4.3	-61.9	76.6	39.8
4046.0	V	0.4		-64.8	7.0	4.3	-62.1	76.8	39.8
4551.8	H	1.1		-64.0	8.3	4.6	-60.3	75.1	39.8
4551.8	V	2.6		-62.9	8.3	4.6	-59.3	74.0	39.8
5057.5	H	0.5		-61.9	7.8	4.8	-58.9	73.7	39.8
5057.5	V	0.8		-61.8	7.8	4.8	-58.7	73.5	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 517.75MHz, 30mW (14.8dBm)
 BAND : G5
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GX1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
1035.5	H	2.2		-73.3	2.8	2.0	-72.6	87.4	39.8
1035.5	V	8.7		-67.5	2.8	2.0	-66.8	81.6	39.8
1553.3	H	0.2		-76.1	4.9	2.5	-73.7	88.5	39.8
1553.3	V	2.4		-73.8	4.9	2.5	-71.4	86.2	39.8
2071.0	H	11.7		-62.0	5.2	2.9	-59.6	74.4	39.8
2071.0	V	9.4		-63.1	5.2	2.9	-60.8	75.6	39.8
2588.8	H	0.6		-71.5	5.9	3.4	-68.9	83.7	39.8
2588.8	V	0.5		-69.2	5.9	3.4	-66.6	81.4	39.8
3106.5	H	0.3		-70.0	6.2	3.8	-67.6	82.3	39.8
3106.5	V	0.9		-67.2	6.2	3.8	-64.8	79.5	39.8
3624.3	H	1.1		-67.2	6.9	4.1	-64.4	79.2	39.8
3624.3	V	0.2		-66.8	6.9	4.1	-64.1	78.8	39.8
4142.0	H	1.1		-64.5	7.3	4.4	-61.6	76.3	39.8
4142.0	V	1.0		-64.3	7.3	4.4	-61.4	76.2	39.8
4659.8	H	4.0		-60.4	8.2	4.6	-56.9	71.7	39.8
4659.8	V	3.2		-61.6	8.2	4.6	-58.1	72.8	39.8
5177.5	H	0.3		-62.0	7.6	4.9	-59.2	74.0	39.8
5177.5	V	1.1		-61.4	7.6	4.9	-58.6	73.4	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : FCC-74 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 505.75MHz, 30mW (14.8dBm)
 BAND : G5
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	Part 74 Min. Attn. dB
1011.5	H	14.6		-60.8	2.6	2.0	-60.2	74.9	27.8
1011.5	V	14.2		-62.1	2.6	2.0	-61.5	76.2	27.8
1517.3	H	14.8		-61.8	4.9	2.5	-59.4	74.1	27.8
1517.3	V	14.9		-61.6	4.9	2.5	-59.2	74.0	27.8
2023.0	H	18.4		-55.4	5.1	2.8	-53.1	67.9	27.8
2023.0	V	16.9		-55.9	5.1	2.8	-53.6	68.4	27.8
2528.8	H	15.3		-57.0	5.9	3.3	-54.4	69.1	27.8
2528.8	V	14.9		-55.0	5.9	3.3	-52.4	67.1	27.8
3034.5	H	14.9		-55.6	6.1	3.7	-53.2	68.0	27.8
3034.5	V	15.6		-52.6	6.1	3.7	-50.2	65.0	27.8
3540.3	H	15.4		-53.5	6.8	4.0	-50.7	65.5	27.8
3540.3	V	14.6		-52.9	6.8	4.0	-50.1	64.8	27.8
4046.0	H	15.7		-50.0	7.0	4.3	-47.3	62.0	27.8
4046.0	V	15.8		-49.4	7.0	4.3	-46.7	61.4	27.8
4551.8	H	16.1		-49.0	8.3	4.6	-45.3	60.1	27.8
4551.8	V	16.1		-49.4	8.3	4.6	-45.8	60.5	27.8
5057.5	H	15.9		-46.5	7.8	4.8	-43.5	58.3	39.8
5057.5	V	16.0		-46.6	7.8	4.8	-43.5	58.3	39.8

* - Ambient

$$\text{ERP Total (dBm)} = \text{Matched Sig Gen (dBm)} + \text{Antenna Gain (dB)} - \text{Cable Loss (dB)}$$

$$\text{Atten. (dB)} = \text{Output Power (dBm)} - \text{ERP (dBm)}$$

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : December 16, 2011
 MODE : Transmit at 518.2MHz, 30mW (14.8dBm)
 BAND : H5
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
1036.4	H	1.9		-73.7	2.8	2.0	-72.9	87.7	39.8
1036.4	V	9.2		-67.0	2.8	2.0	-66.3	81.1	39.8
1554.6	H	0.3		-76.0	4.9	2.5	-73.6	88.4	39.8
1554.6	V	-0.1		-76.3	4.9	2.5	-73.9	88.6	39.8
2072.8	H	5.0		-68.7	5.2	2.9	-66.3	81.1	39.8
2072.8	V	6.4		-66.1	5.2	2.9	-63.8	78.6	39.8
2591.0	H	0.5		-71.5	5.9	3.4	-69.0	83.7	39.8
2591.0	V	1.8		-67.8	5.9	3.4	-65.3	80.0	39.8
3109.2	H	-0.2		-70.5	6.2	3.8	-68.0	82.8	39.8
3109.2	V	0.1		-68.0	6.2	3.8	-65.6	80.3	39.8
3627.4	H	1.3		-67.0	6.9	4.1	-64.2	79.0	39.8
3627.4	V	1.5		-65.5	6.9	4.1	-62.7	77.5	39.8
4145.6	H	0.1		-65.5	7.3	4.4	-62.6	77.3	39.8
4145.6	V	0.6		-64.7	7.3	4.4	-61.8	76.6	39.8
4663.8	H	3.0		-61.4	8.2	4.6	-57.9	72.6	39.8
4663.8	V	2.0		-62.8	8.2	4.6	-59.2	74.0	39.8
5182.0	H	2.2		-60.1	7.6	4.9	-57.3	72.1	39.8
5182.0	V	2.7		-59.7	7.6	4.9	-57.0	71.8	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Factor (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 530.5MHz, 30mW (14.8dBm)
 BAND : H5
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
1061.0	H	2.8		-72.9	2.9	2.1	-72.1	86.9	39.8
1061.0	V	8.6		-67.6	2.9	2.1	-66.7	81.5	39.8
1591.5	H	0.4		-75.7	4.9	2.5	-73.3	88.0	39.8
1591.5	V	0.4		-75.4	4.9	2.5	-73.0	87.8	39.8
2122.0	H	5.3		-68.2	5.3	2.9	-65.8	80.6	39.8
2122.0	V	7.6		-64.6	5.3	2.9	-62.2	77.0	39.8
2652.5	H	1.0		-70.8	5.9	3.4	-68.3	83.1	39.8
2652.5	V	2.7		-66.7	5.9	3.4	-64.2	79.0	39.8
3183.0	H	6.0		-64.1	6.3	3.8	-61.6	76.3	39.8
3183.0	V	0.1		-67.9	6.3	3.8	-65.4	80.2	39.8
3713.5	H	1.6		-66.0	6.9	4.2	-63.3	78.1	39.8
3713.5	V	2.3		-64.2	6.9	4.2	-61.5	76.3	39.8
4244.0	H	0.2		-65.3	7.6	4.4	-62.2	76.9	39.8
4244.0	V	0.9		-64.6	7.6	4.4	-61.4	76.2	39.8
4774.5	H	6.0		-57.8	8.1	4.7	-54.4	69.1	39.8
4774.5	V	5.9		-58.1	8.1	4.7	-54.7	69.5	39.8
5305.0	H	2.3		-59.8	7.4	4.9	-57.4	72.1	39.8
5305.0	V	2.4		-60.0	7.4	4.9	-57.5	72.3	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 541.8MHz, 30mW (14.8dBm)
 BAND : H5
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
1083.6	H	2.9		-73.0	3.0	2.1	-72.0	86.8	39.8
1083.6	V	12.1		-64.0	3.0	2.1	-63.1	77.9	39.8
1625.4	H	0.5		-75.3	4.9	2.6	-72.9	87.7	39.8
1625.4	V	0.9		-74.6	4.9	2.6	-72.2	87.0	39.8
2167.2	H	7.1		-66.3	5.4	3.0	-63.9	78.6	39.8
2167.2	V	10.9		-61.0	5.4	3.0	-58.6	73.4	39.8
2709.0	H	2.7		-68.9	6.0	3.5	-66.4	81.2	39.8
2709.0	V	5.2		-64.0	6.0	3.5	-61.5	76.3	39.8
3250.8	H	0.8		-69.1	6.4	3.9	-66.5	81.3	39.8
3250.8	V	0.7		-67.2	6.4	3.9	-64.7	79.4	39.8
3792.6	H	2.7		-64.4	6.9	4.2	-61.7	76.5	39.8
3792.6	V	4.5		-61.6	6.9	4.2	-59.0	73.7	39.8
4334.4	H	1.6		-63.9	7.9	4.5	-60.5	75.3	39.8
4334.4	V	1.0		-64.6	7.9	4.5	-61.3	76.0	39.8
4876.2	H	5.6		-57.6	8.0	4.7	-54.3	69.1	39.8
4876.2	V	5.3		-58.1	8.0	4.7	-54.8	69.6	39.8
5418.0	H	2.3		-59.7	7.2	5.0	-57.5	72.2	39.8
5418.0	V	2.6		-59.7	7.2	5.0	-57.4	72.2	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : FCC-74 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 530.5MHz, 30mW (14.8dBm)
 BAND : H5
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	Part 74 Min. Attn. dB
1061.0	H	15.0		-60.7	2.9	2.1	-59.9	74.7	27.8
1061.0	V	16.4		-59.8	2.9	2.1	-58.9	73.7	27.8
1591.5	H	15.2		-60.9	4.9	2.5	-58.5	73.2	27.8
1591.5	V	15.6		-60.2	4.9	2.5	-57.8	72.6	27.8
2122.0	H	15.4		-58.1	5.3	2.9	-55.7	70.5	27.8
2122.0	V	16.3		-55.9	5.3	2.9	-53.5	68.3	27.8
2652.5	H	15.7		-56.1	5.9	3.4	-53.6	68.4	27.8
2652.5	V	16.0		-53.4	5.9	3.4	-50.9	65.7	27.8
3183.0	H	15.6		-54.5	6.3	3.8	-52.0	66.7	27.8
3183.0	V	15.7		-52.3	6.3	3.8	-49.8	64.6	27.8
3713.5	H	16.8		-50.8	6.9	4.2	-48.1	62.9	27.8
3713.5	V	16.1		-50.4	6.9	4.2	-47.7	62.5	27.8
4244.0	H	15.7		-49.8	7.6	4.4	-46.7	61.4	27.8
4244.0	V	16.6		-48.9	7.6	4.4	-45.7	60.5	27.8
4774.5	H	16.5		-47.3	8.1	4.7	-43.9	58.6	27.8
4774.5	V	16.8		-47.2	8.1	4.7	-43.8	58.6	27.8
5305.0	H	0.0		-62.1	7.4	4.9	-59.7	74.4	27.8
5305.0	V	17.8		-44.6	7.4	4.9	-42.1	56.9	27.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : December 16, 2011
 MODE : Transmit at 572.2MHz, 30mW (14.8dBm)
 BAND : J3
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GX1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
1144.4	H	1.2		-75.1	3.3	2.2	-73.9	88.7	39.8
1144.4	V	20.8		-55.2	3.3	2.2	-54.0	68.8	39.8
1716.6	H	0.6		-74.6	5.0	2.6	-72.3	87.0	39.8
1716.6	V	40.0		-34.7	5.0	2.6	-32.4	47.1	39.8
2288.8	H	2.1		-70.9	5.6	3.1	-68.4	83.2	39.8
2288.8	V	4.9		-66.3	5.6	3.1	-63.8	78.6	39.8
2861.0	H	0.2		-70.9	6.0	3.6	-68.5	83.2	39.8
2861.0	V	1.2		-67.5	6.0	3.6	-65.1	79.8	39.8
3433.2	H	-0.4		-69.8	6.7	4.0	-67.0	81.8	39.8
3433.2	V	0.3		-67.5	6.7	4.0	-64.7	79.5	39.8
4005.4	H	-0.8		-66.5	6.9	4.3	-63.9	78.7	39.8
4005.4	V	0.8		-64.3	6.9	4.3	-61.7	76.5	39.8
4577.6	H	0.5		-64.4	8.3	4.6	-60.8	75.5	39.8
4577.6	V	1.6		-63.8	8.3	4.6	-60.1	74.9	39.8
5149.8	H	0.1		-62.2	7.7	4.9	-59.4	74.2	39.8
5149.8	V	1.1		-61.4	7.7	4.9	-58.6	73.3	39.8
5722.0	H	1.0		-60.8	7.5	5.1	-58.4	73.1	39.8
5722.0	V	1.2		-60.9	7.5	5.1	-58.5	73.2	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Factor (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 584.5MHz, 30mW (14.8dBm)
 BAND : J3
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
1169.0	H	0.3		-76.1	3.5	2.2	-74.8	89.6	39.8
1169.0	V	18.8		-57.2	3.5	2.2	-55.9	70.7	39.8
1753.5	H	0.2		-74.8	5.0	2.6	-72.4	87.2	39.8
1753.5	V	1.5		-72.9	5.0	2.6	-70.5	85.3	39.8
2338.0	H	1.2		-71.7	5.7	3.1	-69.1	83.9	39.8
2338.0	V	2.1		-68.8	5.7	3.1	-66.3	81.0	39.8
2922.5	H	1.0		-69.9	6.0	3.6	-67.5	82.3	39.8
2922.5	V	1.2		-67.3	6.0	3.6	-64.9	79.7	39.8
3507.0	H	-1.2		-70.3	6.8	4.0	-67.5	82.3	39.8
3507.0	V	1.9		-65.8	6.8	4.0	-62.9	77.7	39.8
4091.5	H	-0.5		-66.1	7.2	4.4	-63.3	78.1	39.8
4091.5	V	-0.2		-65.5	7.2	4.4	-62.6	77.4	39.8
4676.0	H	5.0		-59.3	8.2	4.7	-55.8	70.6	39.8
4676.0	V	6.7		-58.0	8.2	4.7	-54.5	69.2	39.8
5260.5	H	0.2		-62.0	7.5	4.9	-59.4	74.2	39.8
5260.5	V	-0.5		-62.9	7.5	4.9	-60.3	75.1	39.8
5845.0	H	1.0		-60.8	7.8	5.1	-58.1	72.9	39.8
5845.0	V	1.2		-60.9	7.8	5.1	-58.2	73.0	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 595.8MHz, 30mW (14.8dBm)
 BAND : J3
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
1191.6	H	-0.7		-77.2	3.6	2.2	-75.9	90.7	39.8
1191.6	V	22.1		-53.8	3.6	2.2	-52.5	67.2	39.8
1787.4	H	1.2		-73.6	5.0	2.7	-71.2	86.0	39.8
1787.4	V	2.8		-71.3	5.0	2.7	-69.0	83.7	39.8
2383.2	H	4.4		-68.3	5.7	3.2	-65.8	80.5	39.8
2383.2	V	5.2		-65.4	5.7	3.2	-62.9	77.7	39.8
2979.0	H	0.2		-70.5	6.0	3.7	-68.1	82.9	39.8
2979.0	V	0.3		-68.0	6.0	3.7	-65.6	80.4	39.8
3574.8	H	-0.2		-68.8	6.9	4.1	-66.1	80.8	39.8
3574.8	V	-0.2		-67.5	6.9	4.1	-64.7	79.5	39.8
4170.6	H	-0.4		-66.0	7.4	4.4	-63.0	77.8	39.8
4170.6	V	-0.3		-65.7	7.4	4.4	-62.7	77.5	39.8
4766.4	H	5.1		-58.7	8.1	4.7	-55.3	70.1	39.8
4766.4	V	7.1		-57.0	8.1	4.7	-53.6	68.4	39.8
5362.2	H	1.2		-60.9	7.3	5.0	-58.5	73.3	39.8
5362.2	V	1.1		-61.2	7.3	5.0	-58.9	73.6	39.8
5958.0	H	2.1		-59.6	8.0	5.2	-56.8	71.5	39.8
5958.0	V	2.3		-59.7	8.0	5.2	-56.9	71.6	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : FCC-74 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 584.5MHz, 30mW (14.8dBm)
 BAND : J3
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	Part 74 Min. Attn. dB
1169.0	H	14.0		-62.4	3.5	2.2	-61.1	75.9	27.8
1169.0	V	21.6		-54.4	3.5	2.2	-53.1	67.9	27.8
1753.5	H	15.1		-59.9	5.0	2.6	-57.5	72.3	27.8
1753.5	V	15.3		-59.1	5.0	2.6	-56.7	71.5	27.8
2338.0	H	14.9		-58.0	5.7	3.1	-55.4	70.2	27.8
2338.0	V	14.8		-56.1	5.7	3.1	-53.6	68.3	27.8
2922.5	H	14.5		-56.4	6.0	3.6	-54.0	68.8	27.8
2922.5	V	15.1		-53.4	6.0	3.6	-51.0	65.8	27.8
3507.0	H	14.8		-54.3	6.8	4.0	-51.5	66.3	27.8
3507.0	V	15.0		-52.7	6.8	4.0	-49.8	64.6	27.8
4091.5	H	14.8		-50.8	7.2	4.4	-48.0	62.8	27.8
4091.5	V	14.9		-50.4	7.2	4.4	-47.5	62.3	27.8
4676.0	H	16.5		-47.8	8.2	4.7	-44.3	59.1	27.8
4676.0	V	17.9		-46.8	8.2	4.7	-43.3	58.0	27.8
5260.5	H	15.2		-47.0	7.5	4.9	-44.4	59.2	27.8
5260.5	V	14.9		-47.5	7.5	4.9	-44.9	59.7	27.8
5845.0	H	15.2		-46.6	7.8	5.1	-43.9	58.7	27.8
5845.0	V	15.3		-46.8	7.8	5.1	-44.1	58.9	27.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : December 16, 2011
 MODE : Transmit at 638.2MHz, 30mW (14.8dBm)
 BAND : L4
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GX1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
1276.4	H	0.1		-76.5	4.0	2.3	-74.9	89.6	39.8
1276.4	V	21.4		-54.7	4.0	2.3	-53.0	67.8	39.8
1914.6	H	0.8		-73.4	5.1	2.7	-71.1	85.9	39.8
1914.6	V	0.9		-72.5	5.1	2.7	-70.2	85.0	39.8
2552.8	H	0.8		-71.4	5.9	3.3	-68.8	83.6	39.8
2552.8	V	1.1		-68.7	5.9	3.3	-66.1	80.9	39.8
3191.0	H	-1.2		-71.2	6.3	3.8	-68.7	83.5	39.8
3191.0	V	-0.5		-68.5	6.3	3.8	-66.0	80.8	39.8
3829.2	H	0.8		-66.0	6.9	4.2	-63.4	78.2	39.8
3829.2	V	1.2		-64.7	6.9	4.2	-62.1	76.9	39.8
4467.4	H	1.1		-64.3	8.2	4.6	-60.6	75.4	39.8
4467.4	V	2.6		-63.3	8.2	4.6	-59.6	74.3	39.8
5105.6	H	2.4		-60.0	7.7	4.8	-57.1	71.8	39.8
5105.6	V	2.1		-60.4	7.7	4.8	-57.5	72.3	39.8
5743.8	H	2.2		-59.6	7.6	5.1	-57.1	71.9	39.8
5743.8	V	2.3		-59.8	7.6	5.1	-57.3	72.1	39.8
6382.0	H	2.9		-58.2	9.4	5.7	-54.6	69.3	39.8
6382.0	V	3.1		-58.8	9.4	5.7	-55.1	69.9	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Factor (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 650.5MHz, 30mW (14.8dBm)
 BAND : L4
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
1301.0	H	1.8		-74.8	4.1	2.3	-73.1	87.8	39.8
1301.0	V	26.9		-49.3	4.1	2.3	-47.5	62.3	39.8
1951.5	H	6.3		-67.8	5.1	2.8	-65.5	80.3	39.8
1951.5	V	16.9		-56.3	5.1	2.8	-54.0	68.8	39.8
2602.0	H	0.8		-71.2	5.9	3.4	-68.6	83.4	39.8
2602.0	V	1.3		-68.3	5.9	3.4	-65.7	80.5	39.8
3252.5	H	-0.4		-70.3	6.4	3.9	-67.7	82.5	39.8
3252.5	V	0.5		-67.4	6.4	3.9	-64.9	79.6	39.8
3903.0	H	5.2		-61.1	6.9	4.3	-58.5	73.3	39.8
3903.0	V	3.9		-61.7	6.9	4.3	-59.0	73.8	39.8
4553.5	H	4.4		-60.7	8.3	4.6	-57.0	71.8	39.8
4553.5	V	9.2		-56.3	8.3	4.6	-52.6	67.4	39.8
5204.0	H	1.2		-61.0	7.6	4.9	-58.4	73.1	39.8
5204.0	V	1.6		-60.8	7.6	4.9	-58.1	72.9	39.8
5854.5	H	4.1		-57.7	7.8	5.1	-55.0	69.7	39.8
5854.5	V	5.1		-57.0	7.8	5.1	-54.3	69.0	39.8
6505.0	H	3.3		-57.6	9.7	5.9	-53.8	68.6	39.8
6505.0	V	3.5		-58.3	9.7	5.9	-54.5	69.3	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : RSS-123 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 661.8MHz, 30mW (14.8dBm)
 BAND : L4
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GX1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	RSS-123 Min. Attn. dB
1323.6	H	3.3		-73.3	4.2	2.3	-71.5	86.3	39.8
1323.6	V	24.0		-52.3	4.2	2.3	-50.4	65.2	39.8
1985.4	H	5.5		-68.5	5.1	2.8	-66.2	80.9	39.8
1985.4	V	13.0		-60.1	5.1	2.8	-57.8	72.6	39.8
2647.2	H	1.6		-70.2	5.9	3.4	-67.7	82.5	39.8
2647.2	V	2.0		-67.4	5.9	3.4	-64.9	79.7	39.8
3309.0	H	4.1		-65.6	6.5	3.9	-63.0	77.7	39.8
3309.0	V	3.6		-64.3	6.5	3.9	-61.6	76.4	39.8
3970.8	H	2.5		-63.4	6.9	4.3	-60.8	75.6	39.8
3970.8	V	2.7		-62.5	6.9	4.3	-59.9	74.7	39.8
4632.6	H	4.9		-59.7	8.2	4.6	-56.1	70.9	39.8
4632.6	V	7.6		-57.4	8.2	4.6	-53.8	68.6	39.8
5294.4	H	1.1		-61.0	7.4	4.9	-58.5	73.3	39.8
5294.4	V	0.3		-62.1	7.4	4.9	-59.6	74.3	39.8
5956.2	H	3.4		-58.3	8.0	5.2	-55.5	70.2	39.8
5956.2	V	3.3		-58.7	8.0	5.2	-55.9	70.6	39.8
6618.0	H	3.8		-56.9	9.4	6.0	-53.6	68.4	39.8
6618.0	V	3.7		-58.1	9.4	6.0	-54.7	69.5	39.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore



MANUFACTURER : Shure Inc.
 MODEL : FP3 VIVA FP3 Adaptor Transmitter
 SERIAL NO. : See text
 SPECIFICATION : FCC-74 Spurious Radiated Emissions
 DATE : November 30, 2011
 MODE : Transmit at 650.5MHz, 30mW (14.8dBm)
 BAND : L4
 EQUIPMENT USED : RBB0, CMA1, NTA2, NWH0, NWF0, NDQ1, GXA1

Freq. MHz	Ant Pol	Meter Reading dBuV	Amb	Matched Sig Gen dBm	Antenna Gain dB	Cable Factor dB	ERP Total dBm	Atten dB	Part 74 Min. Attn. dB
1301.0	H	14.9		-61.7	4.1	2.3	-60.0	74.7	27.8
1301.0	V	28.7		-47.5	4.1	2.3	-45.7	60.5	27.8
1951.5	H	15.4		-58.7	5.1	2.8	-56.4	71.2	27.8
1951.5	V	21.1		-52.1	5.1	2.8	-49.8	64.6	27.8
2602.0	H	14.8		-57.2	5.9	3.4	-54.6	69.4	27.8
2602.0	V	15.6		-54.0	5.9	3.4	-51.4	66.2	27.8
3252.5	H	14.8		-55.1	6.4	3.9	-52.5	67.3	27.8
3252.5	V	15.2		-52.7	6.4	3.9	-50.2	64.9	27.8
3903.0	H	16.3		-50.0	6.9	4.3	-47.4	62.2	27.8
3903.0	V	16.0		-49.6	6.9	4.3	-46.9	61.7	27.8
4553.5	H	16.2		-48.9	8.3	4.6	-45.2	60.0	27.8
4553.5	V	18.7		-46.8	8.3	4.6	-43.1	57.9	27.8
5204.0	H	14.8		-47.4	7.6	4.9	-44.8	59.5	27.8
5204.0	V	15.3		-47.1	7.6	4.9	-44.4	59.2	27.8
5854.5	H	18.5		-43.3	7.8	5.1	-40.6	55.3	27.8
5854.5	V	19.2		-42.9	7.8	5.1	-40.2	54.9	27.8
6505.0	H	15.8		-45.1	9.7	5.9	-41.3	56.1	27.8
6505.0	V	16.2		-45.6	9.7	5.9	-41.8	56.6	27.8

* - Ambient

ERP Total (dBm) = Matched Sig Gen (dBm) + Antenna Gain (dB) – Cable Loss (dB)

Atten. (dB) = Output Power (dBm) – ERP (dBm)

Checked By: 
 Craig M. Dinsmore