Measurement of RF Emissions from a LSM01 Radio Module Transmitter

For	Life Shadow LLC 21805 W Field Parkway Deer Park, IL 60010
P.O. Number	05311301
Date Tested	June 3, 2013 through June 5, 2013
Test Personnel	Mark Longinotti
Test Specification	FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Section 15.247 for Digital Modulation Intentional Radiators Operating within the band 2400-2483.5MHz Industry Canada RSS-GEN Industry Canada RSS-210

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TABLE OF CONTENTS

PARAGRAPH	DESCRIPTION OF CONTENTS	PAGE NO.
1.	Introduction	5
1.1.	Scope of Tests	5
1.2.	Purpose	5
1.3.	Deviations, Additions and Exclusions	5
1.4.	EMC Laboratory Identification	5
1.5.	Laboratory Conditions	5
2.	Applicable Documents	5
3.	EUT Setup and Operation	6
3.1.	General Description	6
3.1.1.	Power Input	6
3.1.2.	Peripheral Equipment	6
3.1.3.	Signal Input/Output Leads	6
3.1.4.	Grounding	6
3.2.	Software	6
3.3.	Operational Mode	6
3.4.	EUT Modifications	7
4.	Test Facility and Test Instrumentation	7
4.1.	Shielded Enclosure	7
4.2.	Test Instrumentation	7
4.3.	Calibration Traceability	7
4.4.	Measurement Uncertainty	7
5.	Test Procedures	7
5.1.	Powerline Conducted Emissions	7
5.1.1.	Requirements	7
5.2.	6dB Bandwidth	8
5.2.1.	Requirement	8
5.2.2.	Procedures	8
5.2.3.	Results	8
5.3.	Maximum Peak Conducted Output Power	8
5.3.1.	Requirements	8
5.3.2.	Procedures	8
5.3.3.	Results	9
5.4.	Maximum Effective Isotropic Radiated Power (EIRP)	9
5.4.1.	Requirements	9
5.4.2.	Procedures	9
5.4.3.	Results	9
5.5.	Radiated Spurious Emissions Measurements	9
5.5.1.	Requirements	9
5.5.2.	Procedures	9
5.5.3.	Results	11
5.6.	Band Edge Compliance	11
5.6.1.	Requirement	11

TABLE OF CONTENTS

PARAGRAPH	DESCRIPTION OF CONTENTS	PAGE NO.
5.6.2.	Procedures	11
5.4.2.1	Low Band Edge	11
5.4.2.2	High Band Edge	11
5.6.3.	Results	12
5.7.	Power Spectral Density	12
5.7.1.	Requirements	12
5.7.2.	Procedures	12
5.7.3.	Results	12
6.	Other Test Conditions	13
6.1.	Test Personnel and Witnesses	13
6.2.	Disposition of the EUT	13
7.	Conclusions	13
8.	Certification	13
9.	Equipment List	14

REVISION HISTORY

Revision	Date	Description
—	June 12, 2013	Initial release

Measurement of RF Emissions from a Radio Module, Model No. LSM01 Transmitter

1. INTRODUCTION

1.1. Scope of Tests

This report represents the results of the series of radio interference measurements performed on a Life Shadow LLC Radio Module, Model No. LSM01, Serial No. None Assigned, transmitter (hereinafter referred to as the EUT). The EUT is a digital modulation transmitter. The transmitter was designed to transmit in the 2400-2483.5 MHz, band using an internal antenna. The EUT was manufactured and submitted for testing by Life Shadow LLC located in Deer Park, IL.

1.2. Purpose

The test series was performed to determine if the EUT meets the conducted and radiated RF emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Sections 15.207 and 15.247 for Intentional Radiators.

The test series was also performed to determine if the EUT meets the conducted RF emission requirements of the Industry Canada Radio Standards Specification, RSS-Gen, Section 7.2.4 and the radiated RF emission requirements of the Industry Canada Radio Standards Specification, RSS-210, Annex 8 for transmitters. Testing was performed in accordance with ANSI C63.4-2009.

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

This series of tests was performed by Elite Electronic Engineering Incorporated of Downers Grove, Illinois. The laboratory is accredited by The American Association for Laboratory Accreditation (A2LA). A2LA Certificate Number: 1786.01.

1.5. Laboratory Conditions

The temperature at the time of the test was 24°C and the relative humidity was 35%.

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 15, Subpart C, dated 1 October 2012

- ANSI C63.4-2009, "American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz"

- Federal Communications Commission Office of Engineering and Technology Laboratory Division Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under Section 15.247, April 9, 2013

- Industry Canada Radio Standards Specification, RSS-Gen, “General Requirements and Information for the Certification of Radio Apparatus”, Issue 3, December 2010

- Industry Canada Radio Standards Specification, RSS-210, “License-exempt Radio Apparatus (All

Frequency Bands): Category I Equipment", Issue 8, December 2010

3. EUT SETUP AND OPERATION

3.1. General Description

The EUT is a Life Shadow LLC, Radio Module, Model No. LSM01. A block diagram of the EUT setup is shown as Figure 1.

3.1.1. Power Input

The EUT was powered with 3.7VDC from an external rechargeable lithium polymer battery.

3.1.2. Peripheral Equipment

The following peripheral equipment was submitted with the EUT:

Item	Description
MacBook Pro	Model a1226 used to program the EUT

3.1.3. Signal Input/Output Leads

The following interconnect cables were submitted with the EUT:

Item	Description
Interconnect Cable	1 meter USB unshielded cable to provide programming connection to the EUT

3.1.4. Grounding

The EUT was not grounded during the tests.

3.2. Software

The EUT requires Software Version 30700200 to control the device during testing

3.3. Operational Mode

For all tests, the EUT was placed on an 80cm high non-conductive stand. The EUT was energized. The unit was programmed to operate in one of the following modes:

- Transmit at 2412MHz, CH. 1
- Transmit at 2437MHz, CH. 6
- Transmit at 2462MHz, CH. 11

The EUT was also programmed to operate with one of the following data rates:

- 1MBps, 802.11 b
- 2MBps, 802.11 b
- 5.5MBps, 802.11 b
- 11MBps, 802.11 b
- 6MBps, 802.11 g
- 9MBps, 802.11 g
- 12MBps, 802.11 g
- 18MBps, 802.11 g

- 24MBps, 802.11 g
- 36MBps, 802.11 g
- 48MBps, 802.11 g
- 54MBps, 802.11 g

3.4. EUT Modifications

No modifications were required for compliance to the 15.247 requirements.

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 C63.4-2009 for site attenuation.

4.2. Test Instrumentation

The test instrumentation and auxiliary equipment used during the tests are listed in Table 9-1. Conducted and radiated emission measurements were performed with a spectrum analyzer. This receiver allows measurements with the bandwidths and detector functions listed in the requirements.

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:

Conducted Emissions Measurements		
Combined Standard Uncertainty	1.07	-1.07
Expanded Uncertainty (95% confidence)	2.1	-2.1

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

5. TEST PROCEDURES

5.1. Powerline Conducted Emissions

5.1.1.Requirements

Since the EUT was powered by batteries and has no connected to AC lines, no conducted emissions tests are required.

5.2. 6dB Bandwidth

5.2.1.Requirement

Per 15.247(a)(2), the minimum 6dB bandwidth shall be at least 500kHz for all systems using digital modulation techniques.

5.2.2.Procedures

a) The antenna port of the EUT was connected to the spectrum analyzer through 40dB of attenuation.
b) DTS Bandwidth Option 1 Procedure of the Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) was used.
c) The EUT was allowed to transmit continuously at the lowest channel.
d) The center frequency of the spectrum analyzer was set to the transmit frequency of the EUT
e) The resolution bandwidth (RBW) of the spectrum analyzer was set to 100kHz
f) The video bandwidth (VBW) of the spectrum analyzer was set to greater than or equal to 3 x RBW
g) The peak detector function of the spectrum analyzer was used
h) The max hold function of the spectrum analyzer was used
i) The trace on the spectrum analyzer was allowed to stabilize
j) The maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission is measured
k) The spectrum analyzer's display was plotted using a 'screen dump' utility.
l) Steps (d) through (k) were repeated with the EUT allowed to transmit continuously at the middle channel
m) Steps (d) through (k) were repeated with the EUT allowed to transmit continuously at the high channel
n) Steps (d) through (m) were repeated for each of the data rates listed in 3.2.

5.2.3.Results

The plots on pages 20 through 55 show that the minimum 6 dB bandwidth was 12.3MHz which is greater than minimum allowable 6dB bandwidth requirement of 500kHz for systems using digital modulation techniques. The 99% bandwidth was measured to be 18MHz.

5.3. Maximum Peak Conducted Output Power

5.3.1.Requirements

Per section 15.247(b)(3), for systems using digital modulation the maximum peak output conducted power shall not be greater than 1.0W (30dBm). Per section 15.247(b)(4), this limit is based on the use of antennas with directional gains that do not exceed 6dBi. Since the limit allows for a 6dBi antenna gain, the maximum EIRP can be increased by 6dB to 4 Watt (36dBm).

5.3.2.Procedures

a) The antenna port of the EUT was connected to the spectrum analyzer through 40dB of attenuation.
b) Integrated band power method of the Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) was used.
c) The EUT was allowed to transmit continuously at the lowest channel, 802.11b, 11MB/s rate.
d) The center frequency of the spectrum analyzer was set to the transmit frequency of the EUT
e) The resolution bandwidth (RBW) of the spectrum analyzer was set to 1MHz
f) The video bandwidth (VBW) of the spectrum analyzer was set to greater than or equal to 3 x RBW
g) The span of the spectrum analyzer was set to greater than or equal to 1.5 x DTS bandwidth of the EUT
h) The peak detector function of the spectrum analyzer was used
i) The max hold function of the spectrum analyzer was used
j) The trace on the spectrum analyzer was allowed to stabilize
k) The channel power measurement function of the spectrum analyzer was used
l) The band limits of the channel power measurement function was set equal to the DTS bandwidth edges of the EUT

m) The spectrum analyzer's display was plotted using a 'screen dump' utility.
n) Steps (d) through (m) were repeated with the EUT allowed to transmit continuously at the middle channel
o) Steps (d) through (m) were repeated with the EUT allowed to transmit continuously at the high channel
p) Steps (c) through (o) were repeated for 802.11g, 54MB/s rate.

5.3.3.Results

The results are presented on pages 56 through 61. The maximum peak conducted output power from the transmitter was 14.03dBm which is below the 30dBm limit.

5.4. Maximum Effective Isotropic Radiated Power (EIRP)

5.4.1.Requirements

Per section 15.247(b)(3), for systems using digital modulation the maximum peak output conducted power shall not be greater than 1.0W (30dBm). Per section 15.247(b)(4), this limit is based on the use of antennas with directional gains that do not exceed 6dBi. Since the limit allows for a 6dBi antenna gain, the maximum EIRP can be increased by 6dB to 4 Watt (36dBm).

5.4.2.Procedures

The maximum transmit antenna gain (dBi) was added to the measured maximum peak conducted output power (dBm) to determine the EIRP level. (The measured maximum peak conducted output power (dBm) was determined in 5.3.

5.4.3.Results

The results are presented on pages 62 and 63. The maximum EIRP measured from the transmitter was 14.53dBm which is below the 36dBm limit.

5.5. Radiated Spurious Emissions Measurements

5.5.1.Requirements

Per section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated emissions measurement. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a).

Paragraph 15.209(a) has the following radiated emission limits:

Frequency MHz	Field Strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	3
30.0-88.0	100	3
88.0-216.0	150	3
216.0-960.0	200	3
Above 960	500	3

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 C63.4-2009 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.

Preliminary radiated emissions tests were performed to determine the emission characteristics of the EUT. For the preliminary test, a broadband measuring antenna was positioned at a 3 meter distance from the EUT. The entire frequency range from 30MHz to 25GHz was investigated using a peak detector function.

The final emission tests were then manually performed over the frequency range of 30MHz to 25GHz.

1) For all harmonics not in the restricted bands, the following procedure was used:
   a) The field strength of the fundamental was measured using a double ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.
   b) The field strengths of all of the harmonics not in the restricted band were then measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.
   c) To ensure that maximum or worst case emission levels at the fundamental and harmonics were measured, the following steps were taken when measuring the fundamental emissions and the spurious emissions:
      i) The EUT was rotated so that all of its sides were exposed to the receiving antenna.
      ii) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
      iii) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
      iv) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer, the measuring antenna was not raised or lowered to ensure maximized readings. Instead the EUT was rotated through all axes to ensure the maximum readings were recorded for the EUT.
   d) All harmonics not in the restricted bands must be at least 20 dB below levels measured at the fundamental. However, attenuation below the general limits specified in §15.209(a) is not required.

2) For all emissions in the restricted bands, the following procedure was used:
   a) The field strengths of all emissions below 1 GHz were measured using a bi-log antenna. The bi-log antenna was positioned at a 3 meter distance from the EUT. A peak detector with a resolution bandwidth of 100 kHz was used on the spectrum analyzer.
   b) The field strengths of all emissions above 1 GHz were measured using a double-ridged waveguide antenna. The waveguide antenna was positioned at a 3 meter distance from the EUT. A peak detector with a resolution bandwidth of 1 MHz was used on the spectrum analyzer.
   c) To ensure that maximum or worst case emission levels were measured, the following steps were taken when taking all measurements:
      i) The EUT was rotated so that all of its sides were exposed to the receiving antenna.
      ii) Since the measuring antenna is linearly polarized, both horizontal and vertical field components were measured.
      iii) The measuring antenna was raised and lowered for each antenna polarization to maximize the readings.
      iv) In instances where it was necessary to use a shortened cable between the measuring antenna and the spectrum analyzer, the measuring antenna was not raised or lowered to ensure maximized readings. Instead the EUT was rotated through all axes to ensure the maximum readings were recorded for the EUT.
   d) For all radiated emissions measurements below 1 GHz, if the peak reading is below the limits listed in 15.209(a), no further measurements are required. If however, the peak readings exceed the limits listed in 15.209(a), then the emissions are remeasured using a quasi-peak detector.

e) For all radiated emissions measurements above 1 GHz, the peak readings must comply with the 15.35(b) limits. 15.35(b) states that when average radiated emissions measurements are specified, there also is a limit on the peak level of the radiated emissions. The limit on the peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. Therefore, all peak readings above 1 GHz must be no greater than 20 dB above the limits specified in 15.209(a).

f) Next, for all radiated emissions measurements above 1GHz, the resolution bandwidth was set to 1MHz. The analyzer was set to linear mode with a 10Hz video bandwidth in order to simulate an average detector. An average reading was taken.

If the emission is pulsed, the reading can be adjusted by a “duty cycle correction factor” derived from 20*log(on time/100msec). These readings must be no greater than the limits specified in 15.209(a).

5.5.3. Results

Preliminary radiated emissions plots with the EUT transmitting at 2412MHz, 2437MHz, and 2462MHz are shown on pages 64 through 87. Final radiated emissions data are presented on data pages 88 through 94. As can be seen from the data, all emissions measured from the EUT were within the specification limits. Photographs of the test configuration which yielded the highest or worst case radiated emission levels are shown on Figures 2 through 5.

5.6. Band Edge Compliance

5.6.1. Requirement

Per section 15.247(d), the emissions at the band-edges must be at least 20dB below the highest level measured within the band but attenuation below the general limits listed in 15.209(a) is not required.

In addition, the radiated emissions which fall in the restricted band beginning at 2483.5 MHz must meet the general limits of 15.209(a).

5.6.2. Procedures

5.4.2.1 Low Band Edge

1) The output of the EUT was connected to the spectrum analyzer through 40dB of attenuation.
2) The EUT was set to transmit continuously at the channel closest to the low band-edge.
3) To determine the band edge compliance, the following spectrum analyzer settings were used:

   a. Center frequency = low band-edge frequency.
   b. Span = Wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products which fall outside of the authorized band of operation.
   c. Resolution bandwidth (RBW) ≥ 1% of the span.
   d. The 'Max-Hold' function was engaged. The analyzer was allowed to scan until the envelope of the transmitter bandwidth was defined.
   e. The marker was set on the peak of the in-band emissions. A display line was placed 20dB down from the peak of the in-band emissions. All emissions which fall outside of the authorized band of operation must be below the 20dB down display line. (All emissions to the left of the center frequency (band-edge) must be below the display line.)
   f. The analyzer's display was plotted using a 'screen dump' utility.

5.4.2.2 High Band Edge

1) The EUT was set to transmit continuously at the channel closest to the high band-edge.

2) A double ridged waveguide was placed 3 meters away from the EUT. The antenna was connected to the input of a spectrum analyzer.
3) The center frequency of the analyzer was set to the high band edge (2483.5MHz)
4) The resolution bandwidth was set to 1MHz.
5) To ensure that the maximum or worst case emission level was measured, the following steps were taken:

    a. The EUT was rotated so that all of its sides were exposed to the receiving antenna.
    b. Since the measuring antenna is 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.

6) The highest measured peak reading was recorded.
7) The highest measured average reading was recorded.

5.6.3.Results

Pages 95through 100 show the band-edge compliance results. As can be seen from these plots, the conducted emissions at the low end band edge are within the 20 dB down limits. The radiated emissions at the high end band edge are within the general limits.

5.7. Power Spectral Density

5.7.1.Requirements

Per section 15.247(d), the peak power spectral density from the intentional radiator shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

5.7.2.Procedures

1) The output of the EUT was connected to the spectrum analyzer through 40dB of attenuation.
2) The EUT was set to transmit at the low channel.
3) The measurement procedure PKPSD of the Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) was used.
4) To determine the power spectral density, the following spectrum analyzer settings were used:

    a. Spectrum analyzer frequency = DTS channel center frequency
    b. Spectrum analyzer span = 1.5 times the DTS bandwidth
    c. Spectrum analyzer RBW = 100kHz
    d. Spectrum analyzer detector = peak
    e. Spectrum analyzer sweep time = auto
    f. Spectrum analyzer trace mode = max hold
    g. The spectrum analyzer trace was allowed to fully stabilize
    h. The spectrum analyzer peak marker function was used to determine the maximum amplitude level within the RBW
    i. If the measured value exceeds the limit of 8dBm, the RBW is reduced (no less than 3kHz) and repeated
    j. The analyzer's display was plotted using a 'screen dump' utility.
    k. Steps (a) through (j) were repeated with the EUT allowed to transmit continuously at the middle channel
    l. Steps (a) through (j) were repeated with the EUT allowed to transmit continuously at the high channel
    m. Steps (a) through (j) were repeated for each of the data rates listed in 3.2.

5.7.3.Results

Pages 101 through 136 show the power spectral density results. As can be seen from the plots, the peak power density is less than 8dBm in a 3kHz band during any time interval of continuous transmission.

6. OTHER TEST CONDITIONS

6.1. Test Personnel and Witnesses

All tests were performed by qualified personnel from Elite Electronic Engineering Incorporated. The test series was witnessed by Life Shadow LLC personnel.

6.2. Disposition of the EUT

The EUT and all associated equipment were returned to Life Shadow LLC upon completion of the tests.

7. CONCLUSIONS

It was determined that the Life Shadow LLC Radio Module, Model No. LSM01, digital modulation transmitter, Serial No. None Assigned, did fully meet the conducted and radiated emission requirements of the FCC "Code of Federal Regulations" Title 47, Part 15, Subpart C, Sections 15.207 and 15.247 for Intentional Radiators Operating within the 2400-2483.5 MHz band.

It was also determined that the Life Shadow LLC Radio Module, Model No. LSM01, digital modulation transmitter, Serial No. None Assigned, did fully meet the conducted and radiated RF emission requirements of the Industry Canada Radio Standards Specification, RSS-Gen Section 7.2.4 and RSS-210 Annex 8, for transmitters.

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 specifications.

The data presented in this test report pertains to the EUT at the test date as operated by Life Shadow LLC personnel. Any electrical or mechanical modification made to the EUT subsequent to the specified test date will serve to invalidate the data and void this certification. This report must not be used to claim product endorsement by NVLAP or any agency of the US Government.

9. EQUIPMENT LIST

Table 9-1 Equipment List

Eq ID	Equipment Description	Manufacturer	Model No.	Serial No.	Frequency Range	Cal Date	Due Date
APW0	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-30-20G20R6G	PL2926/0646	20GHZ-26.5GHZ	3/8/2013	3/8/2014
APW3	PREAMPLIFIER	PLANAR ELECTRONICS	PE2-35-120-5R0-10-12	PL2924	1GHZ-20GHZ	8/22/2012	8/22/2013
CMA1	Controllers	EMCO	2090	9701-1213	---	N/A	
NHG0	STANDARD GAIN HORN ANTENNA	NARDA	638	---	18-26.5GHZ	NOTE 1	
NTA2	BILOG ANTENNA	TESEQ	6112D	28040	25-1000MHz	7/30/2012	7/30/2013
NWQ2	DOUBLE RIDGED WAVEGUIDE ANTENNA	ETS LINDGREN	3117	66659	1GHZ-18GHZ	3/18/2013	3/18/2014
RBB0	EMI TEST RECEIVER 20HZ TO 40 GHZ	ROHDE & SCHWARZ	ESIB40	100250	20 HZ TO 40GHZ	3/7/2013	3/7/2014
T2S3	20DB 25W ATTENUATOR	WEINSCHEL	46-20-34	BV3544	DC-18GHZ	1/2/2013	1/2/2014
T2S6	20DB 25W ATTENUATOR	WEINSCHEL	46-20-34	BV3539	DC-18GHZ	1/7/2013	1/7/2014
XOB2	ADAPTER	HEWLETT PACKARD	K281C,012	09407	18-26.5GHZ	NOTE 1	
XPR0	HIGH PASS FILTER	K&L MICROWAVE	11SH10-4800/X20000	001	4.8-20GHZ	8/22/2012	8/22/2013

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.

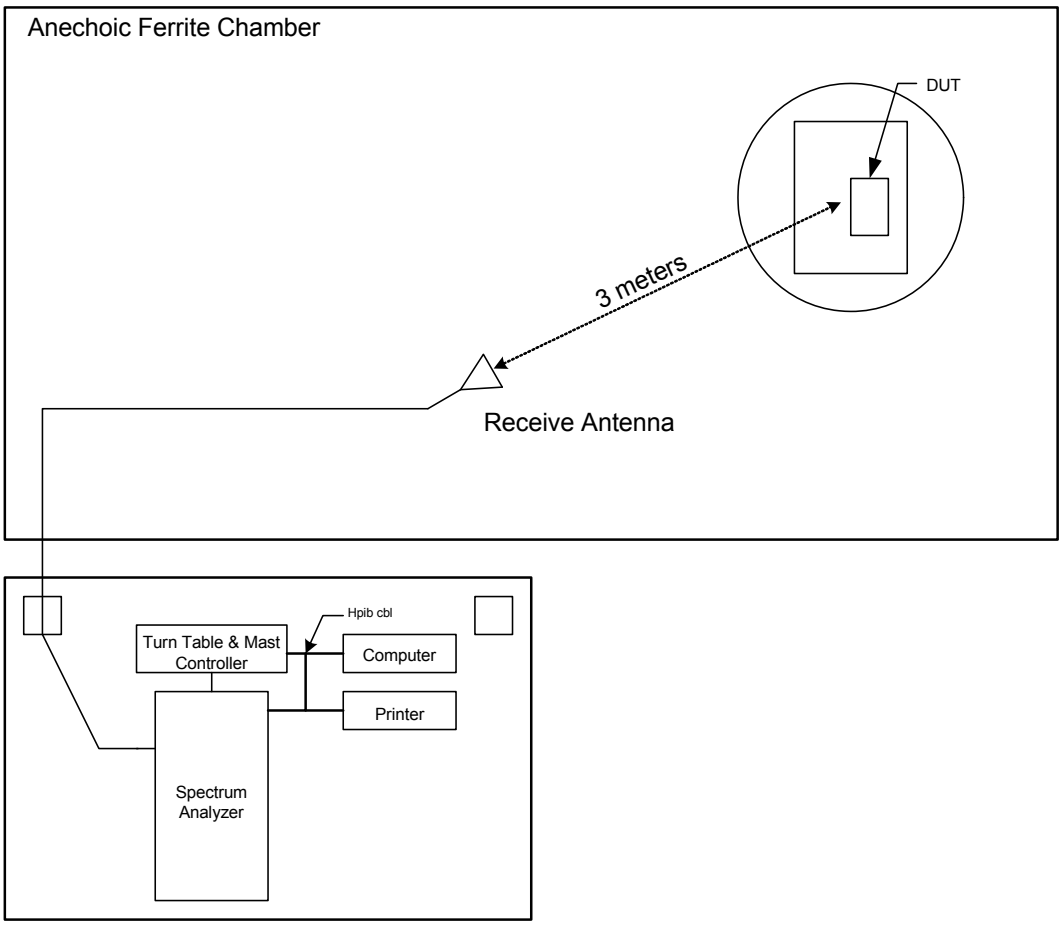
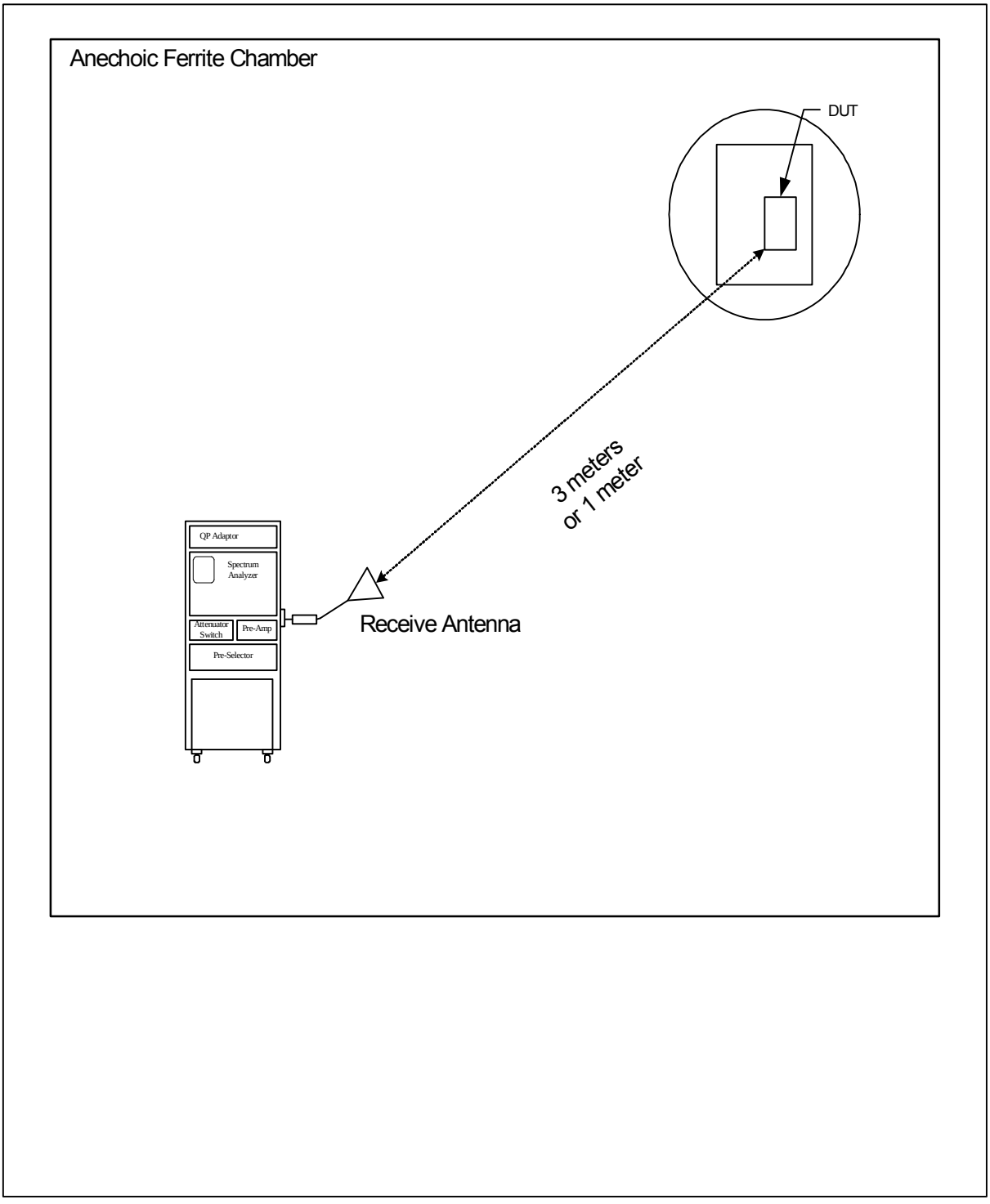


FIGURE 1 BLOCKDIAGRAM OF TEST SETUP


Anechoic Ferrite Chamber
DUT
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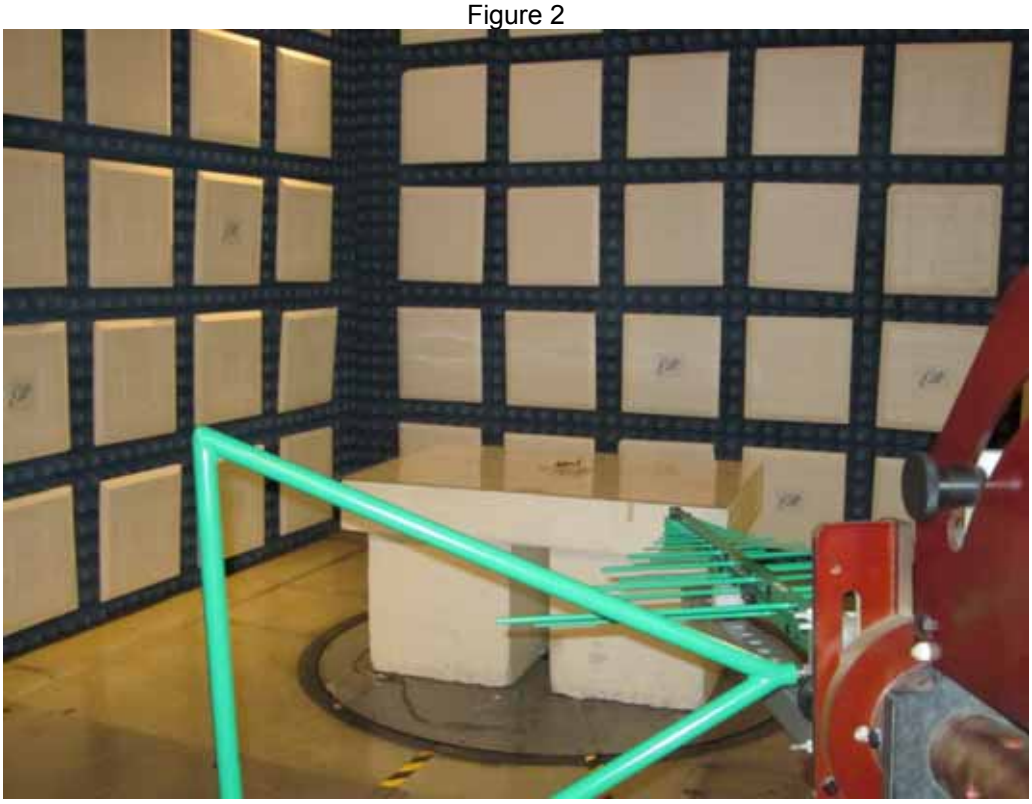
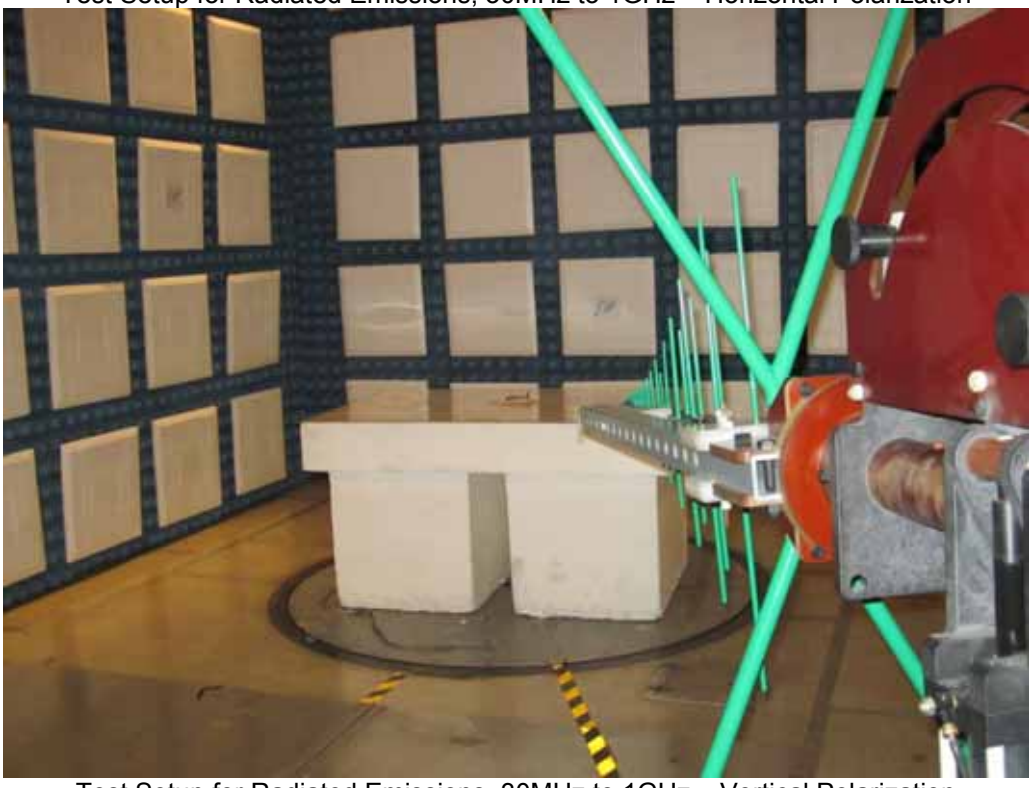
or 1 meter
QP Adaptor
Spectrum
Analyzer
Attenuator
Switch
Pre-Amp
Pre-Selector
Receive Antenna

Figure 2



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



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

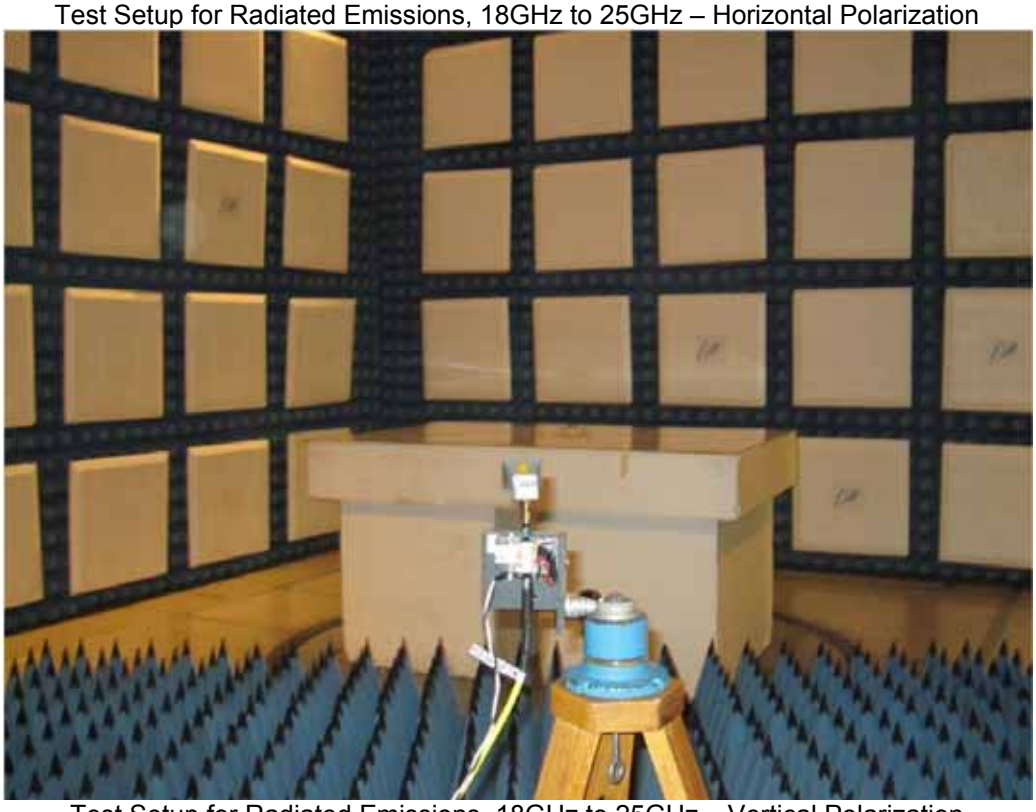
Figure 3

Test Setup for Radiated Emissions, 1GHz to 18GHz – Horizontal Polarization

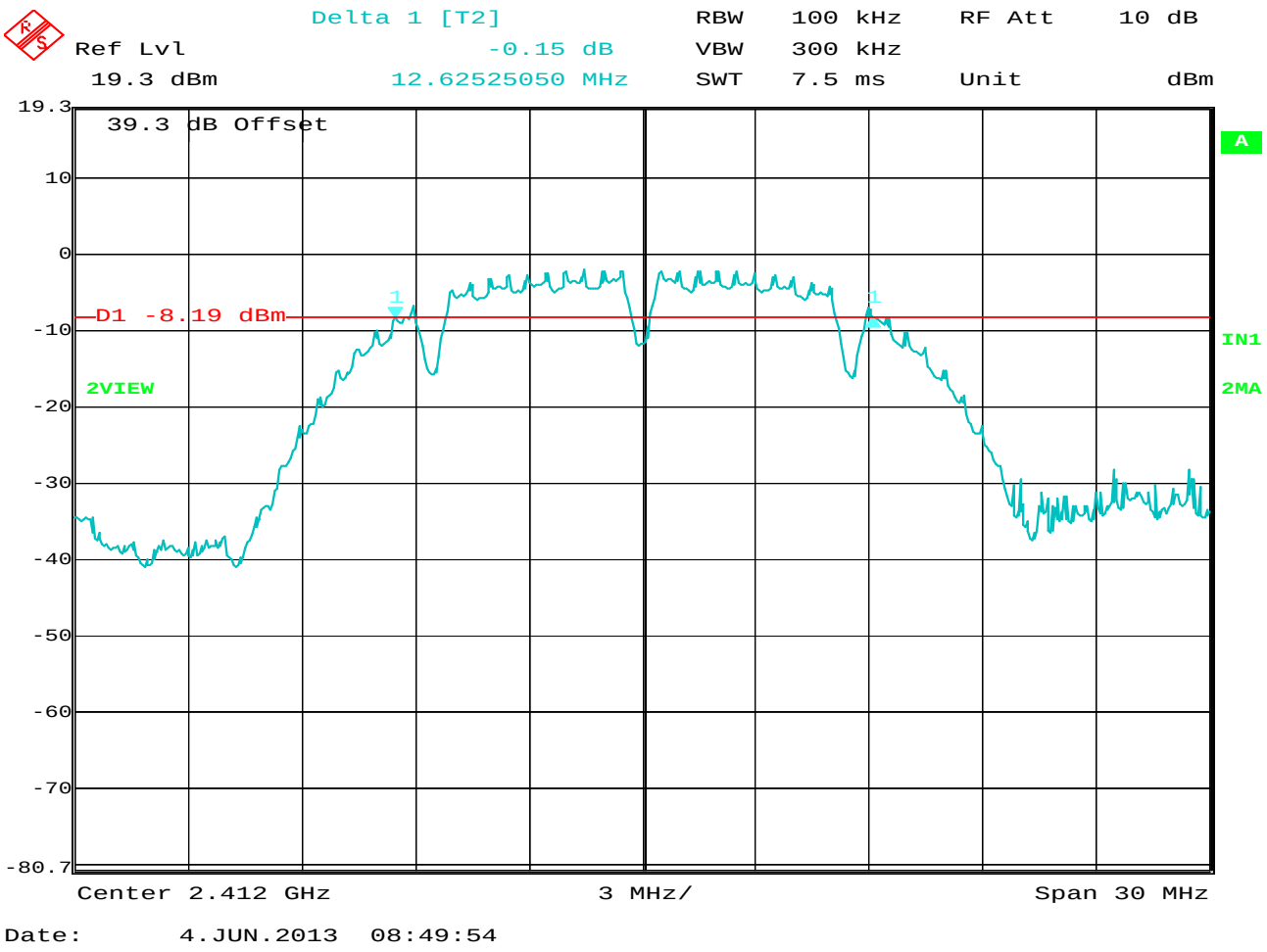
Test Setup for Radiated Emissions, 1GHz to 18GHz – Vertical Polarization

Figure 4

Test Setup for Radiated Emissions, 18GHz to 25GHz – Horizontal Polarization

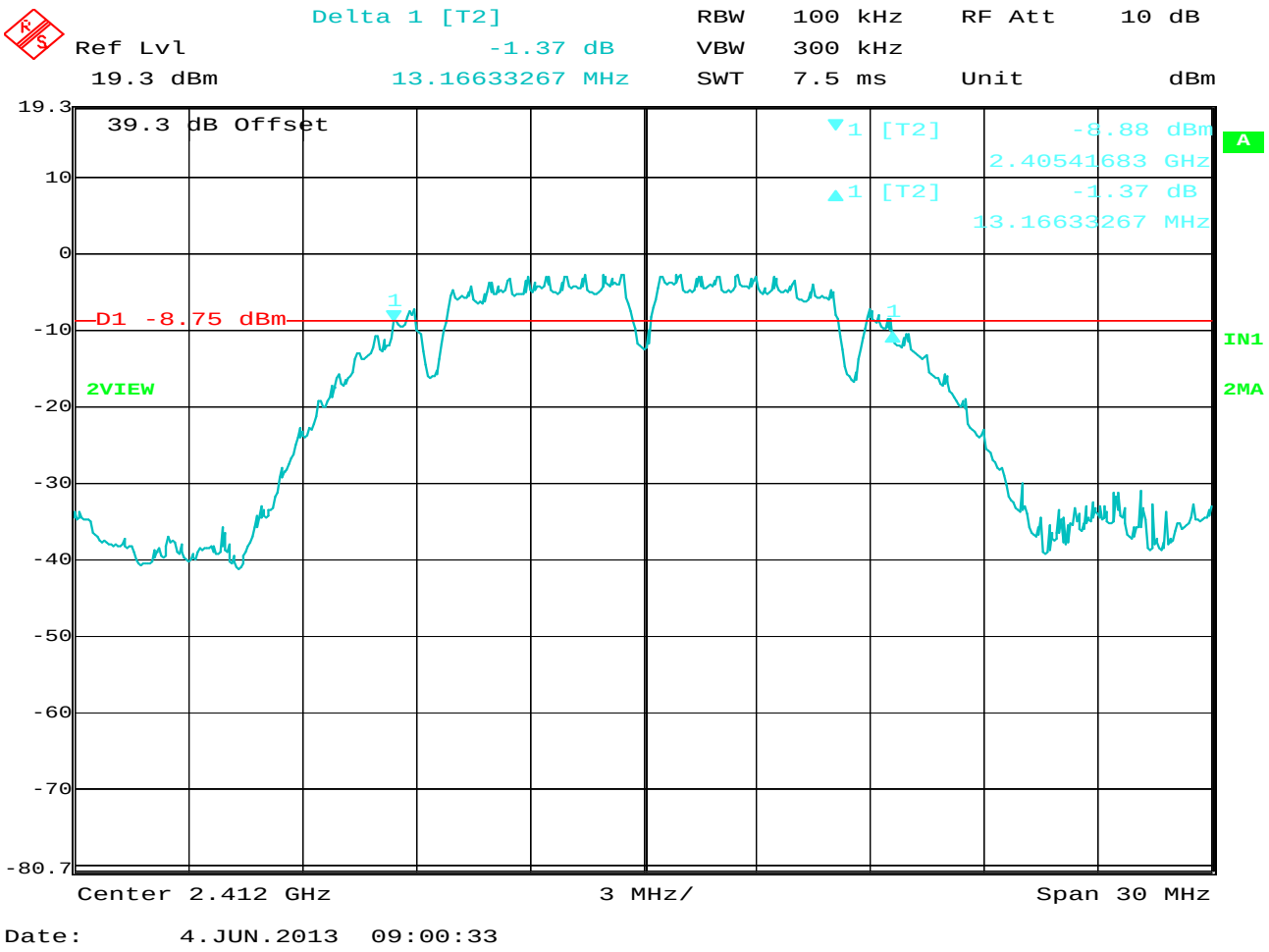


Test Setup for Radiated Emissions, 18GHz to 25GHz – Vertical Polarization



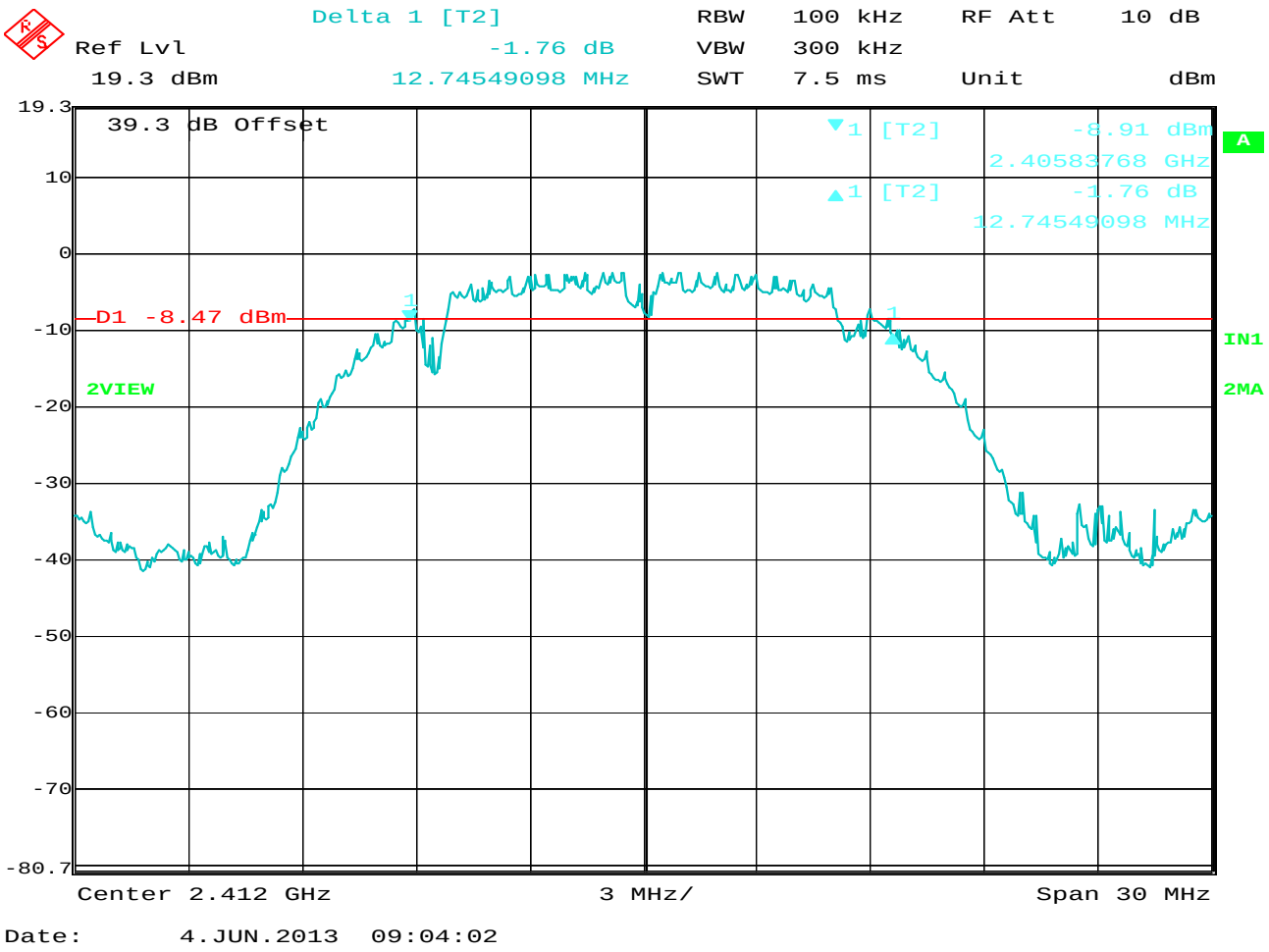
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 12.6MHz
NOTES	:	802.11b, 1Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



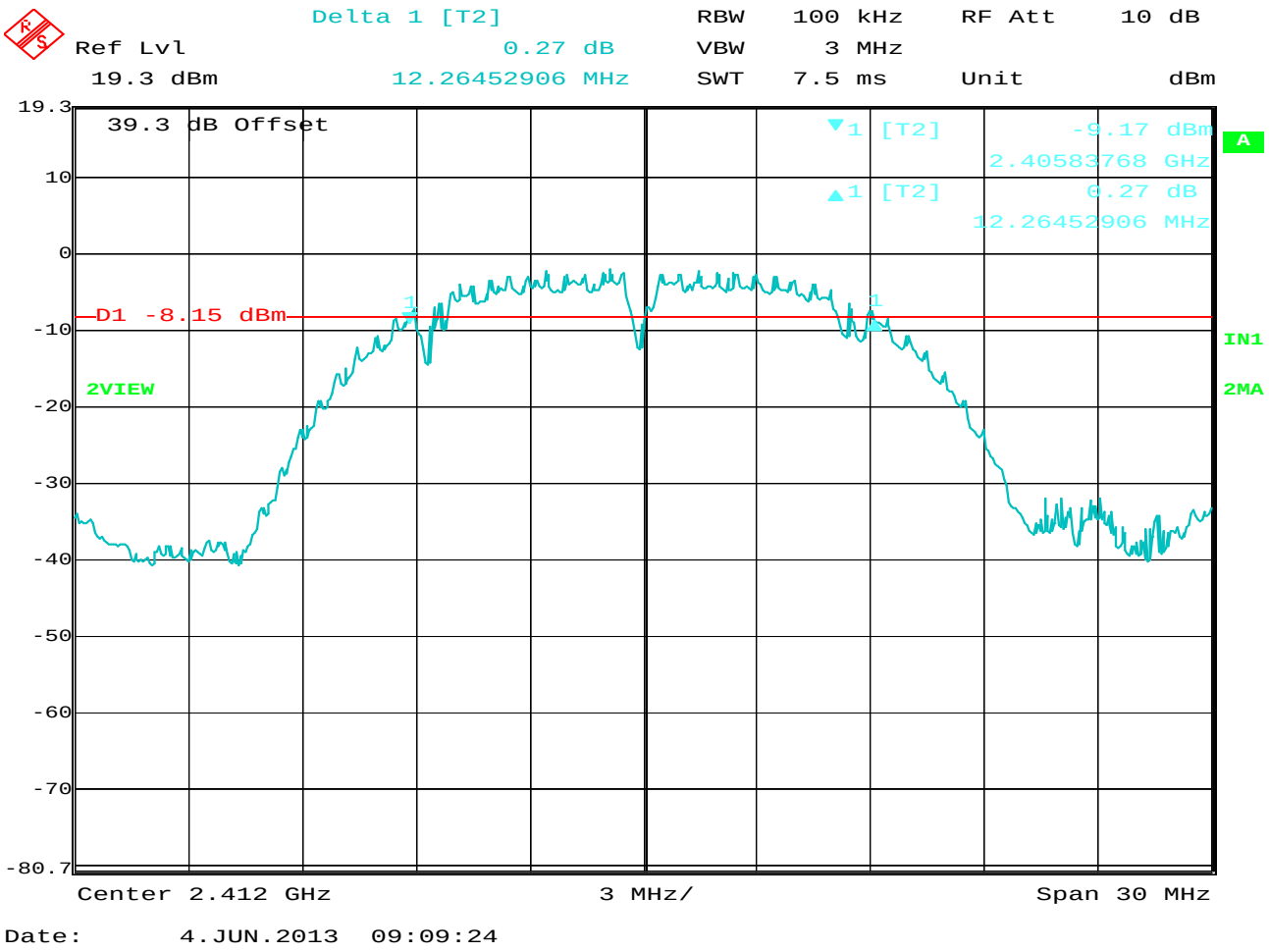
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 13.2MHz
NOTES	:	802.11b, 2 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



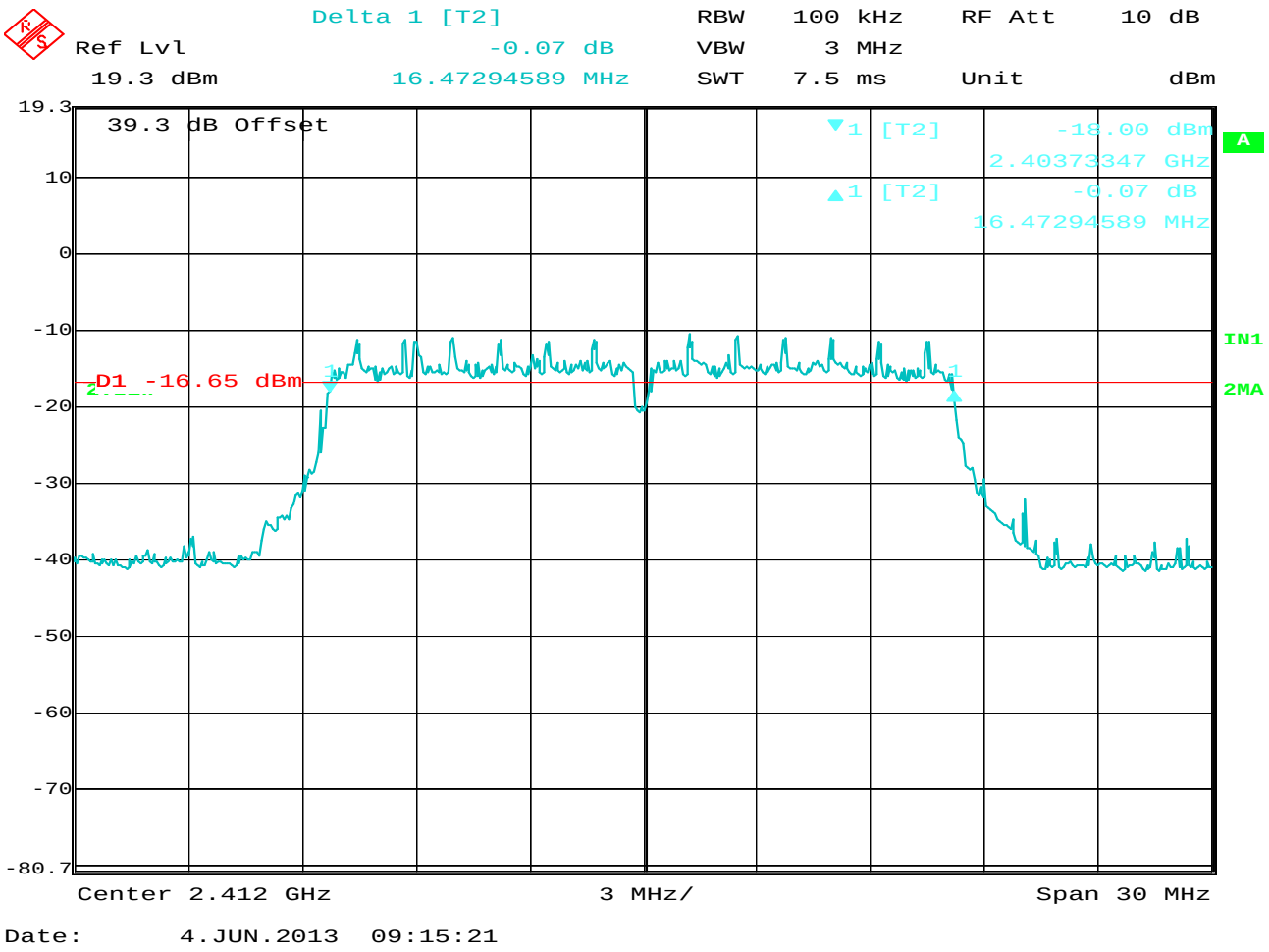
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 12.7MHz
NOTES	:	802.11b, 5.5 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



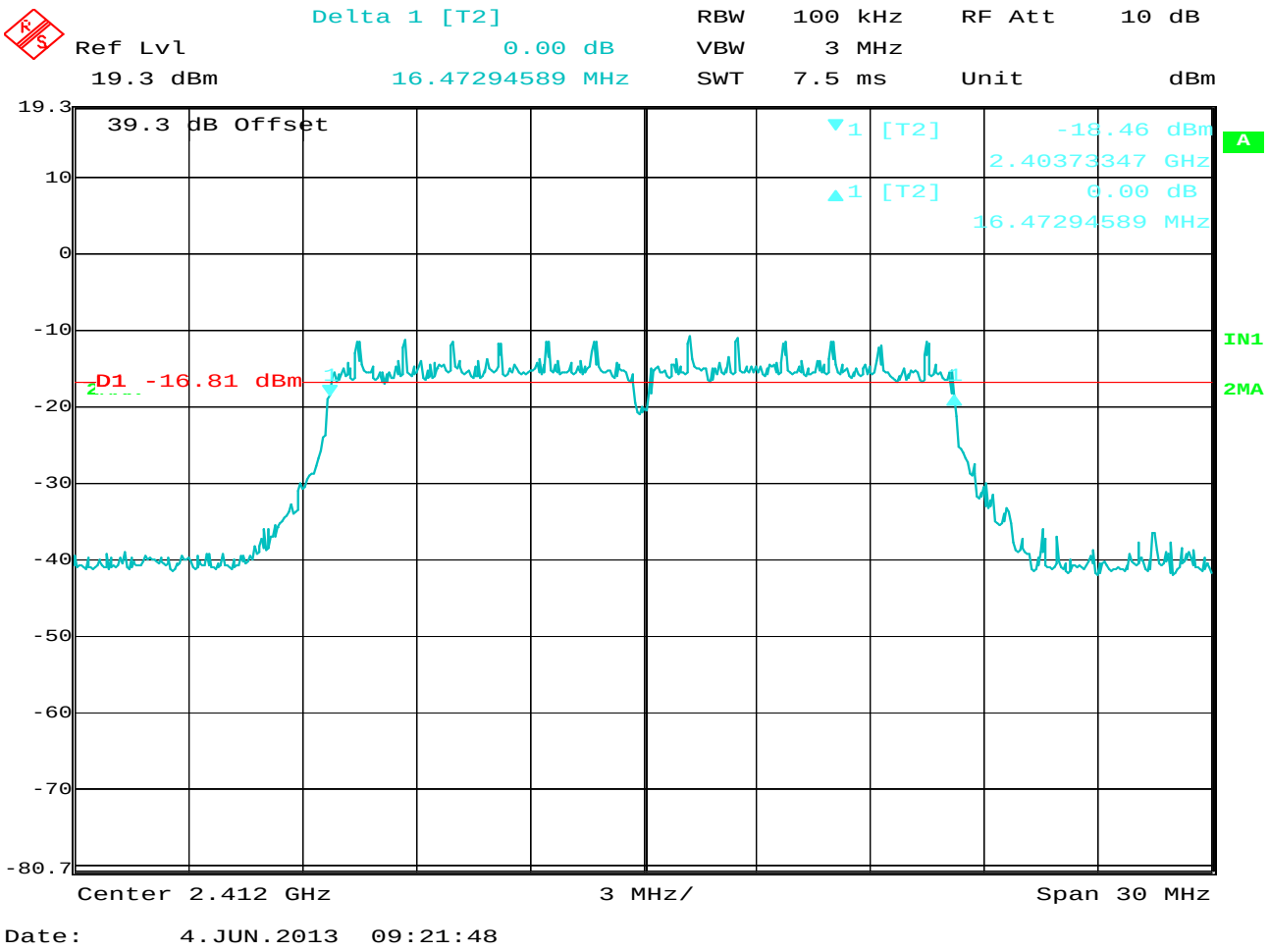
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 12.3MHz
NOTES	:	802.11b, 11 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



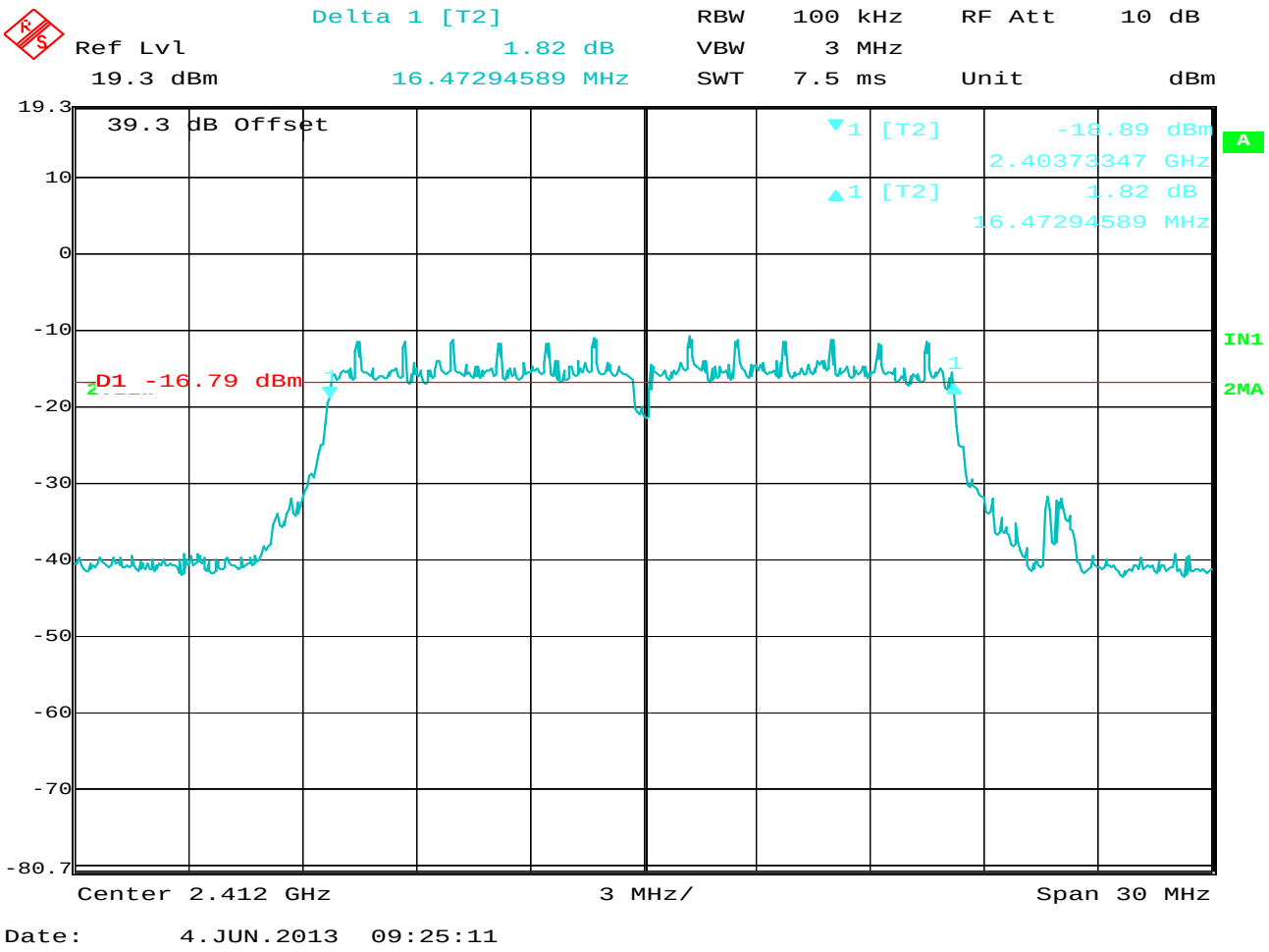
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 6 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



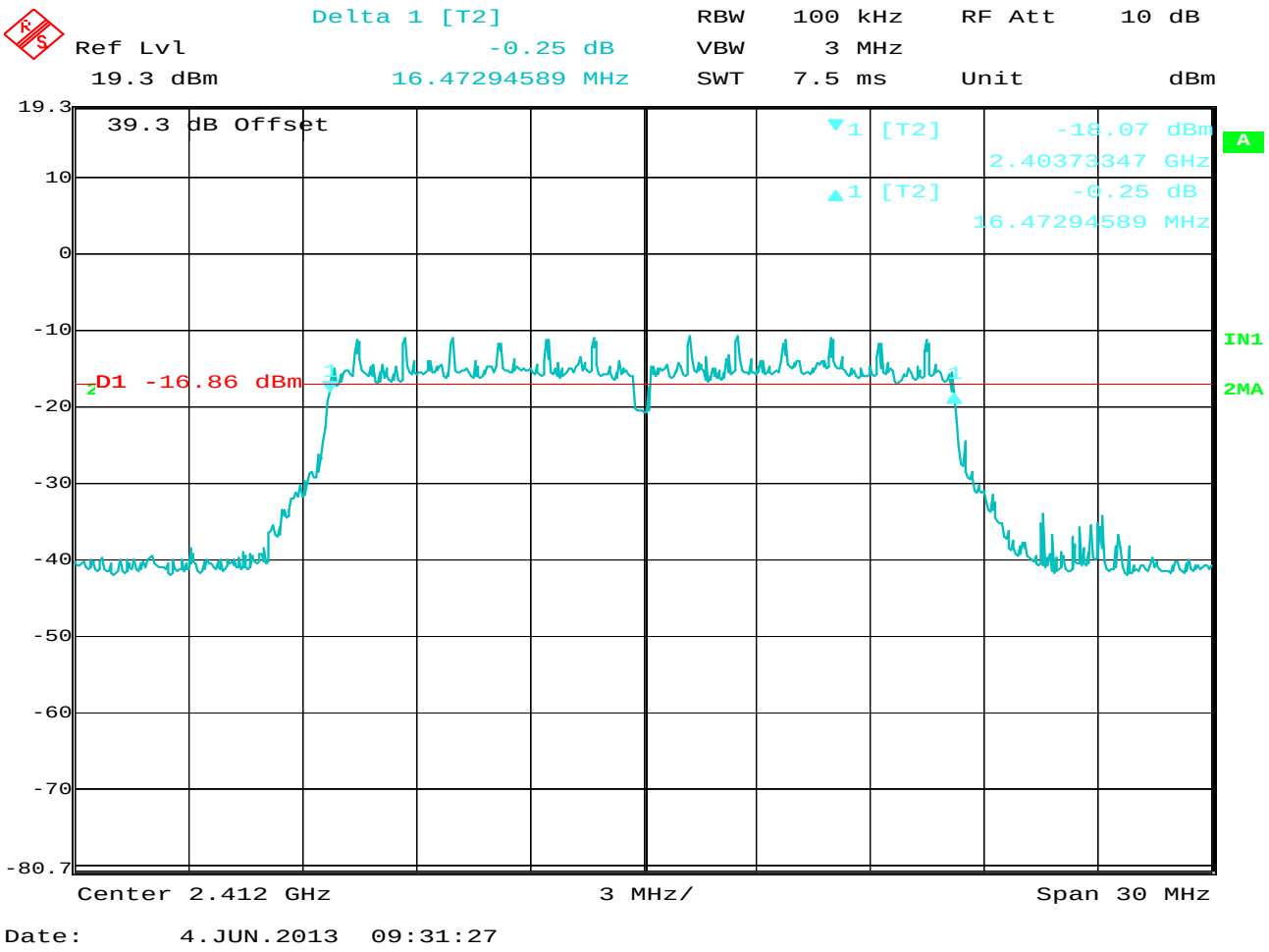
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 9 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



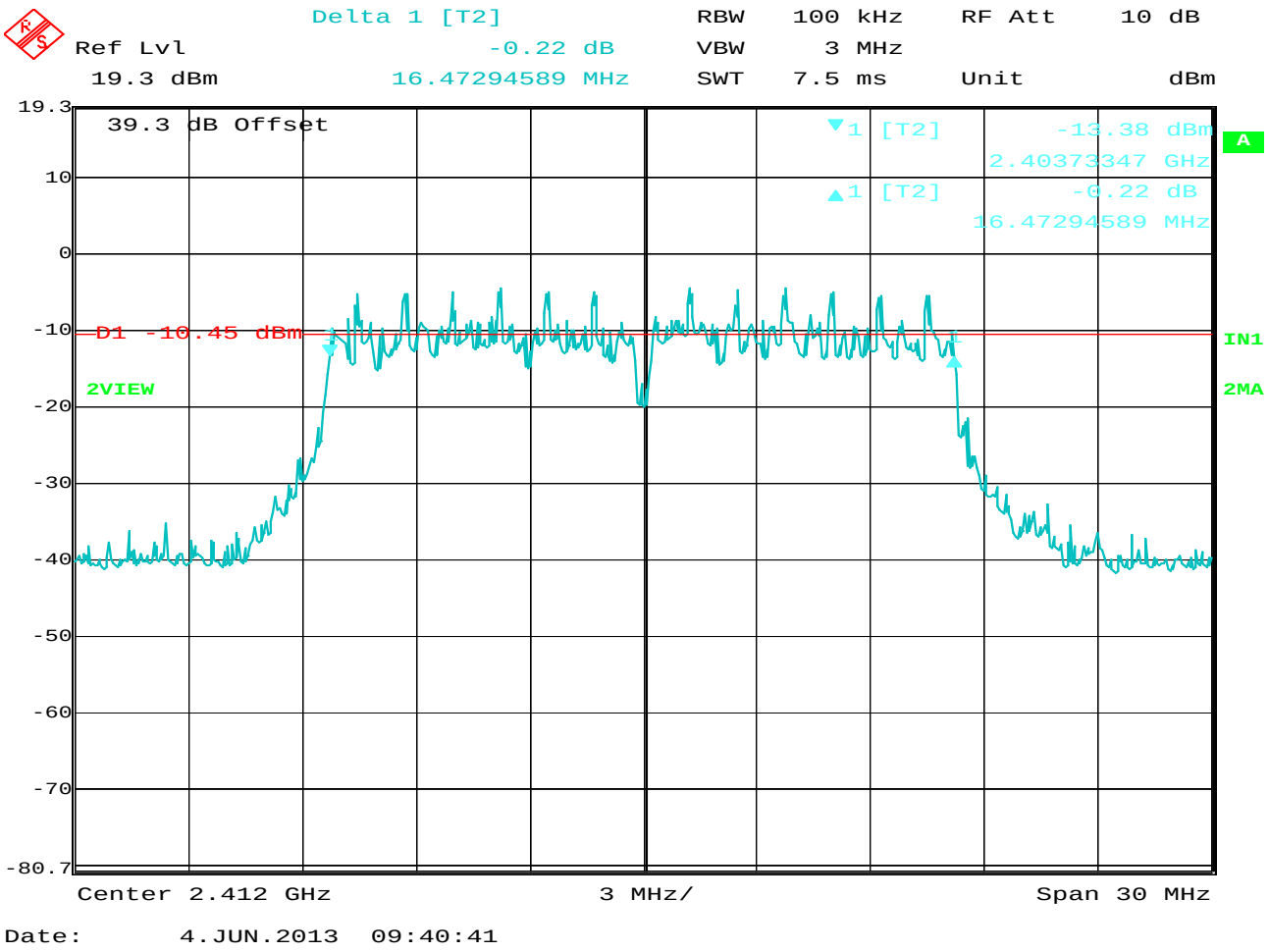
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 12 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



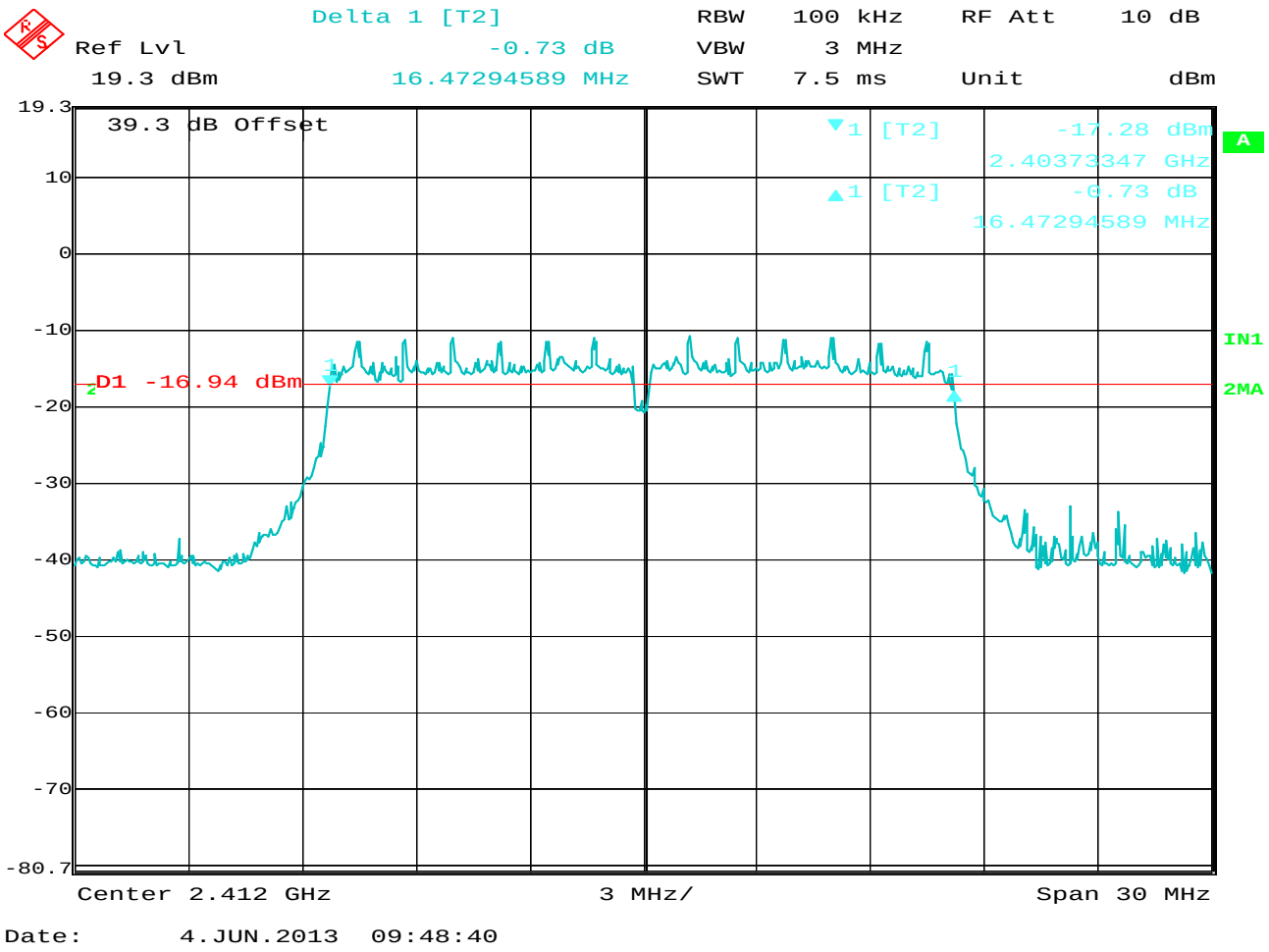
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 18 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



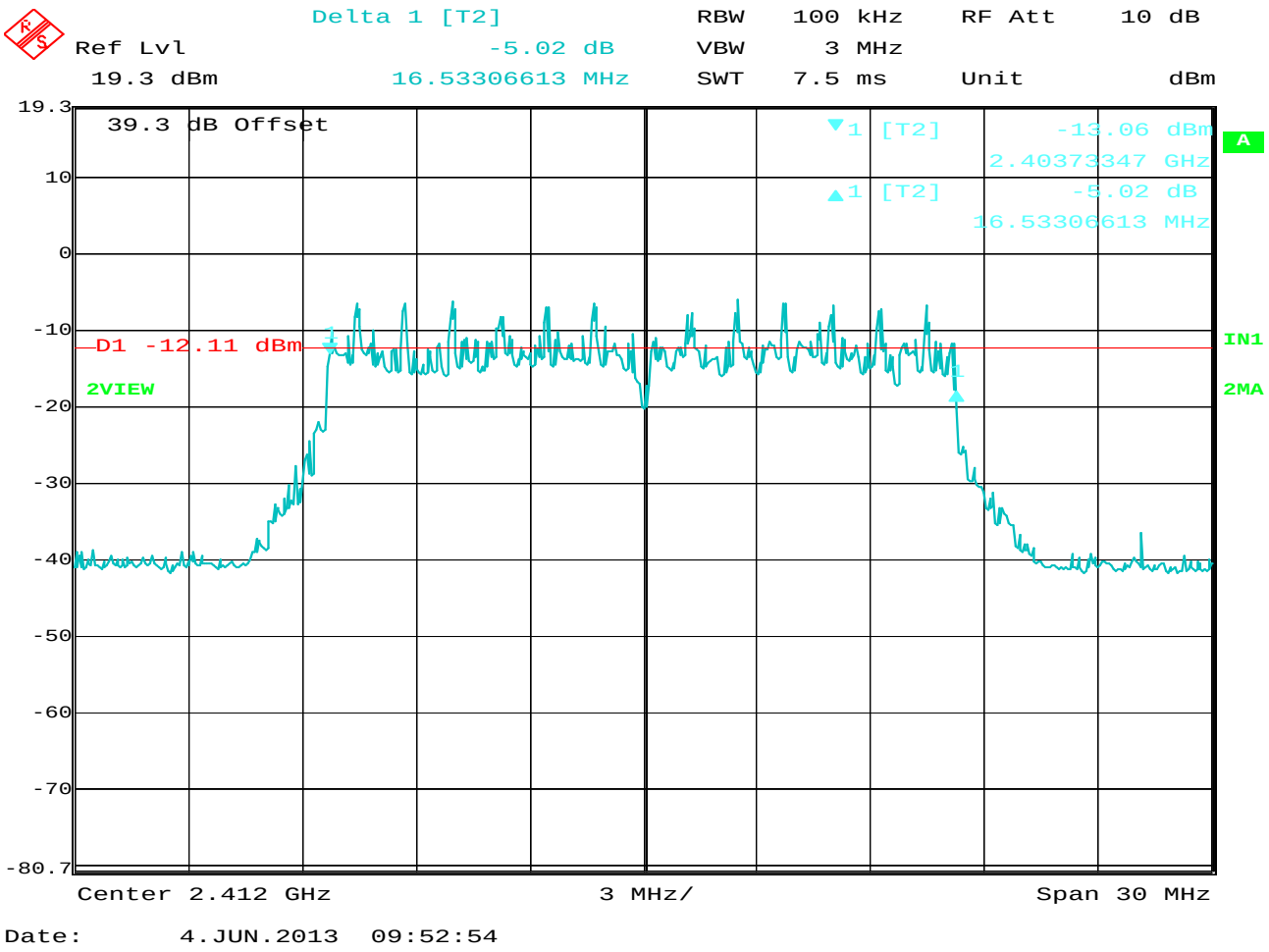
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 24 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



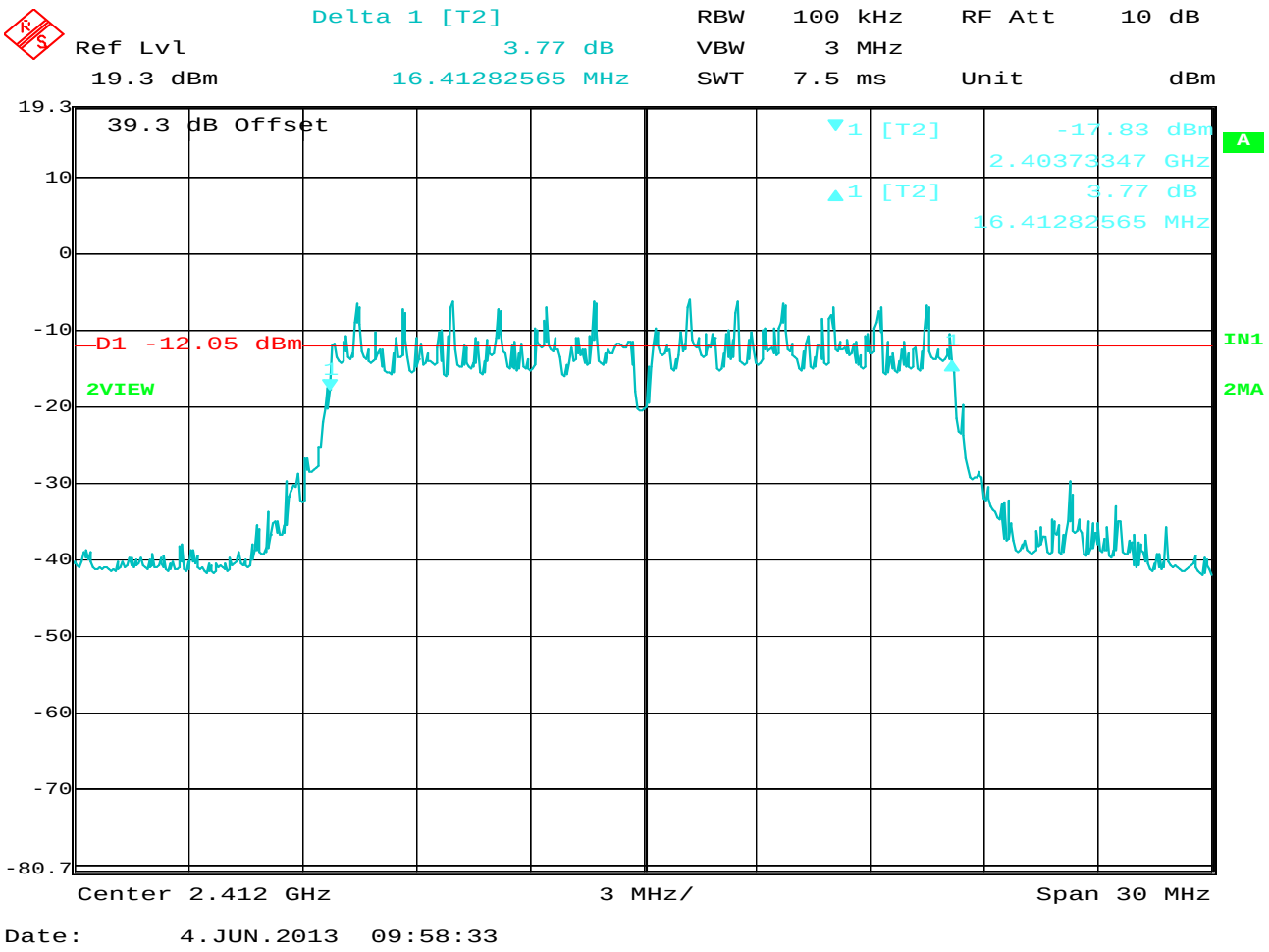
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 36 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



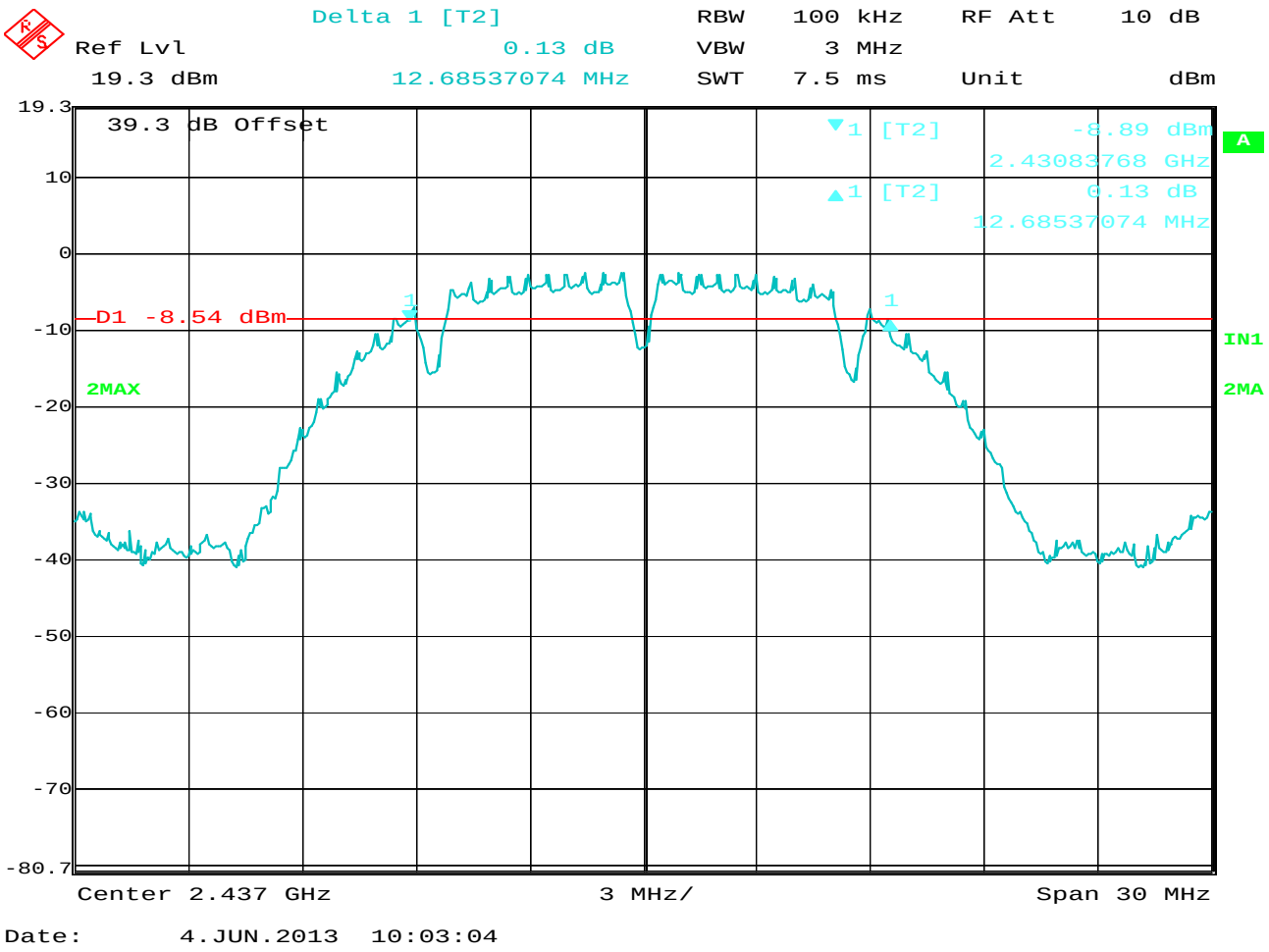
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 48 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



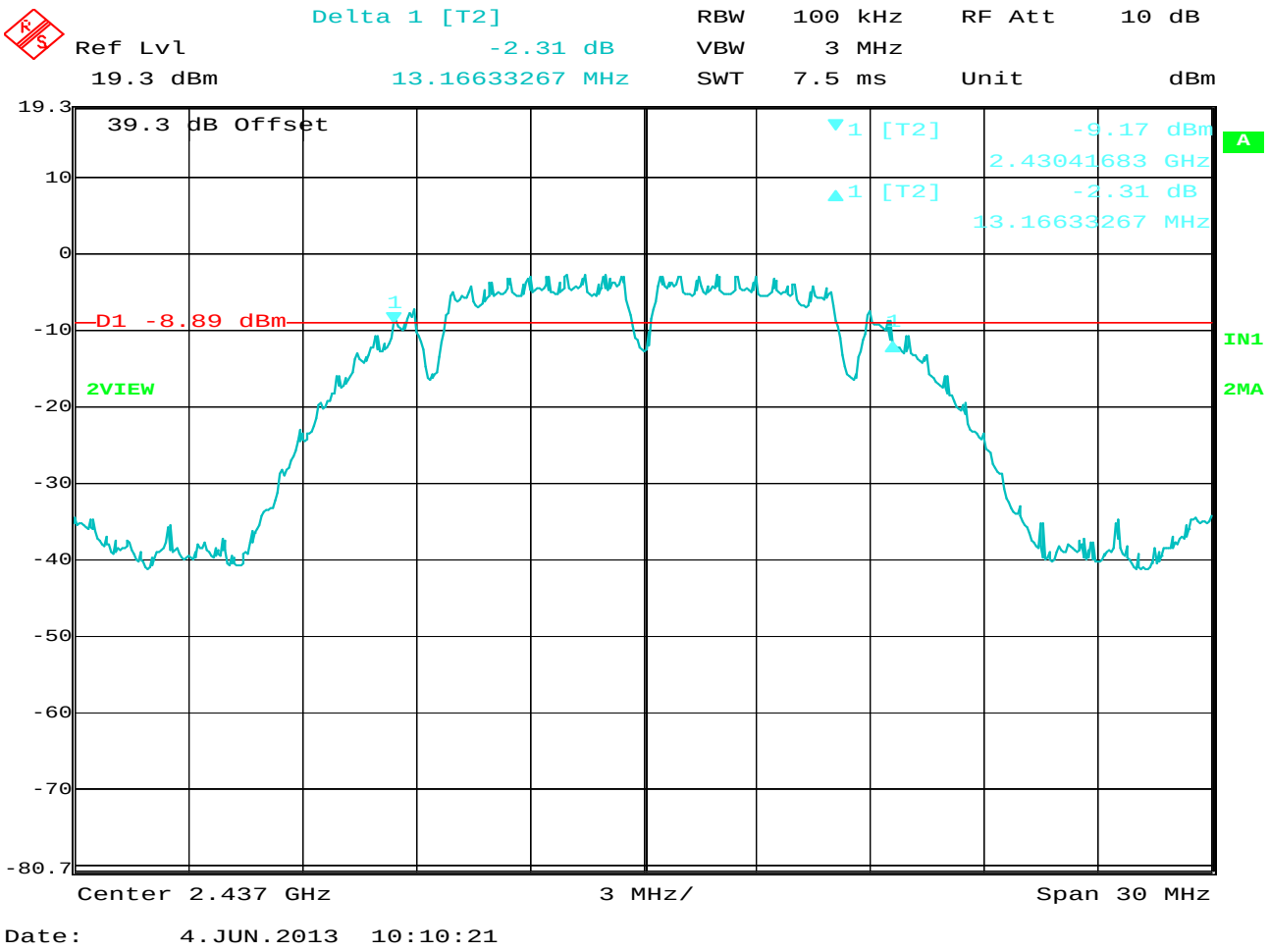
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.4MHz
NOTES	:	802.11g, 54 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



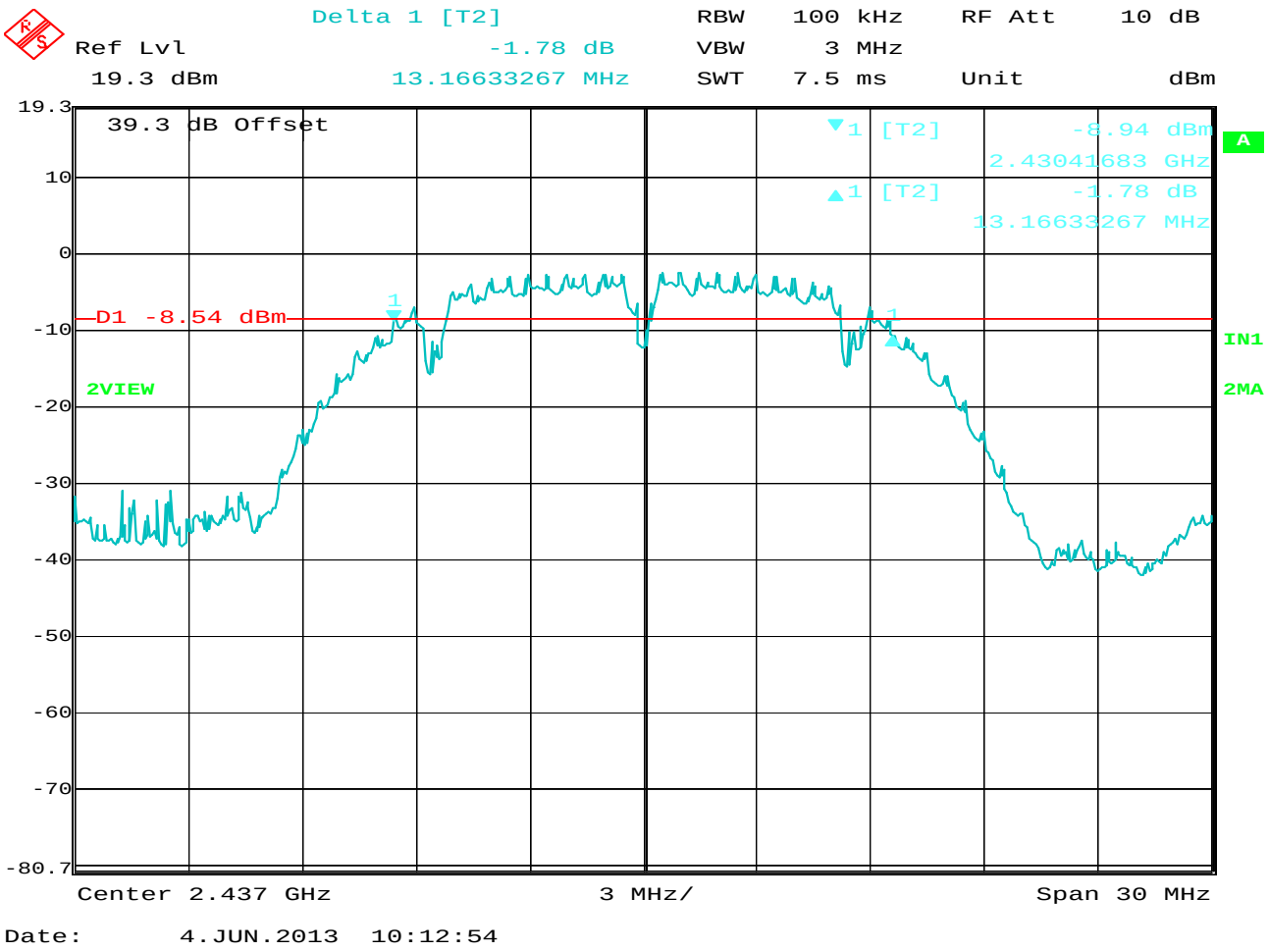
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 12.7MHz
NOTES	:	802.11b, 1Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



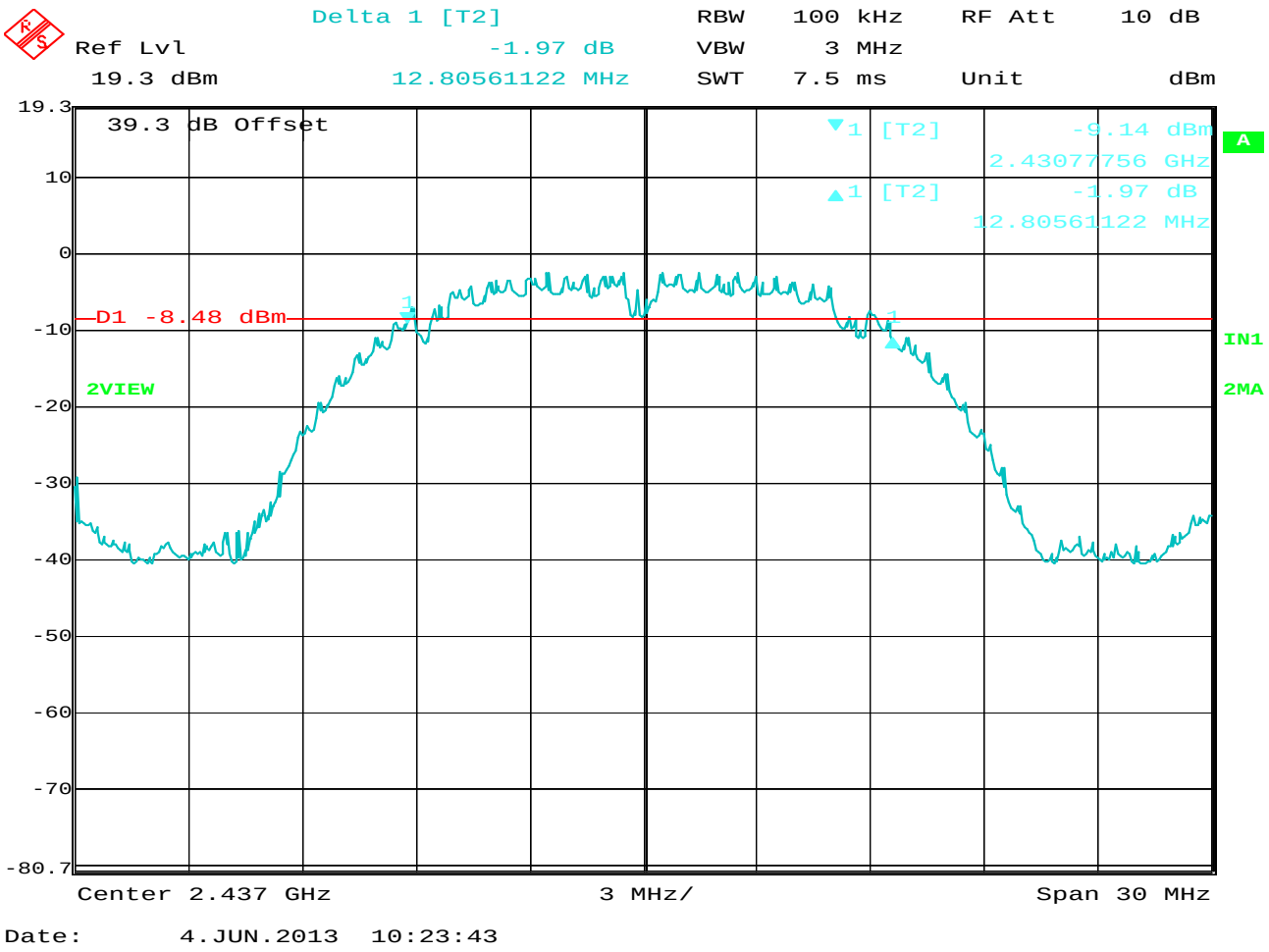
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 13.2MHz
NOTES	:	802.11b, 2Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



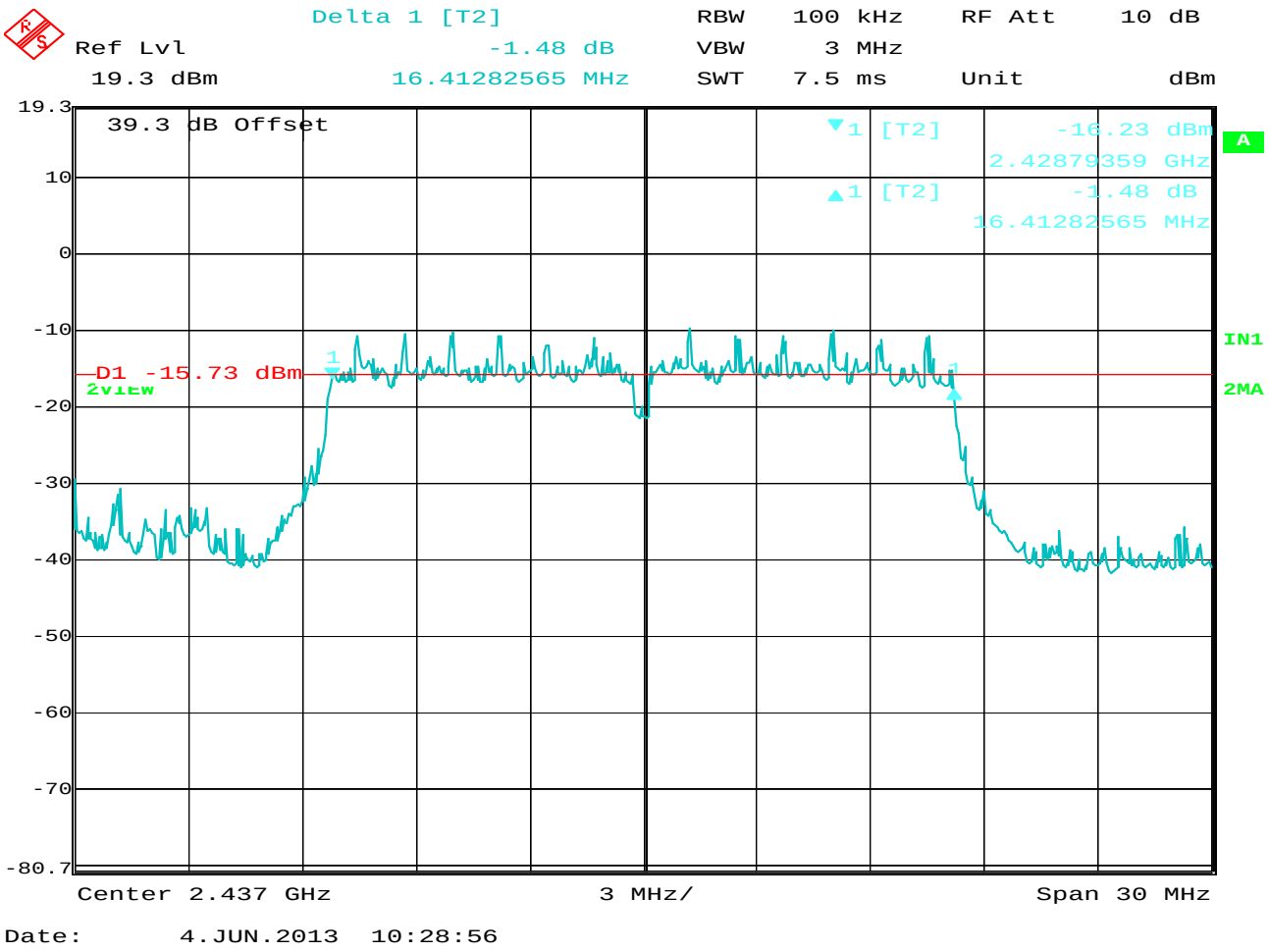
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 13.2MHz
NOTES	:	802.11b, 5.5Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



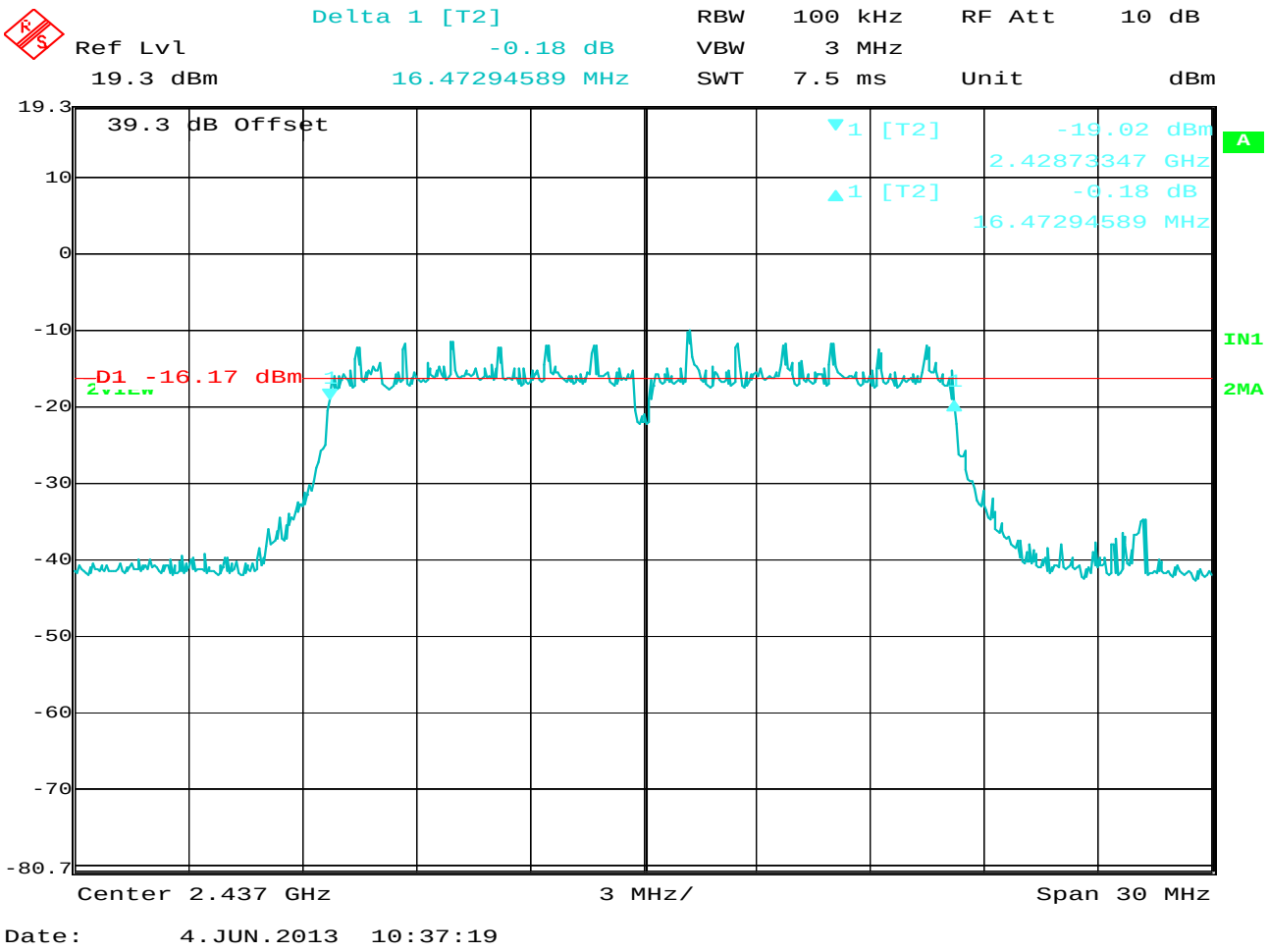
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 12.8MHz
NOTES	:	802.11b, 11Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



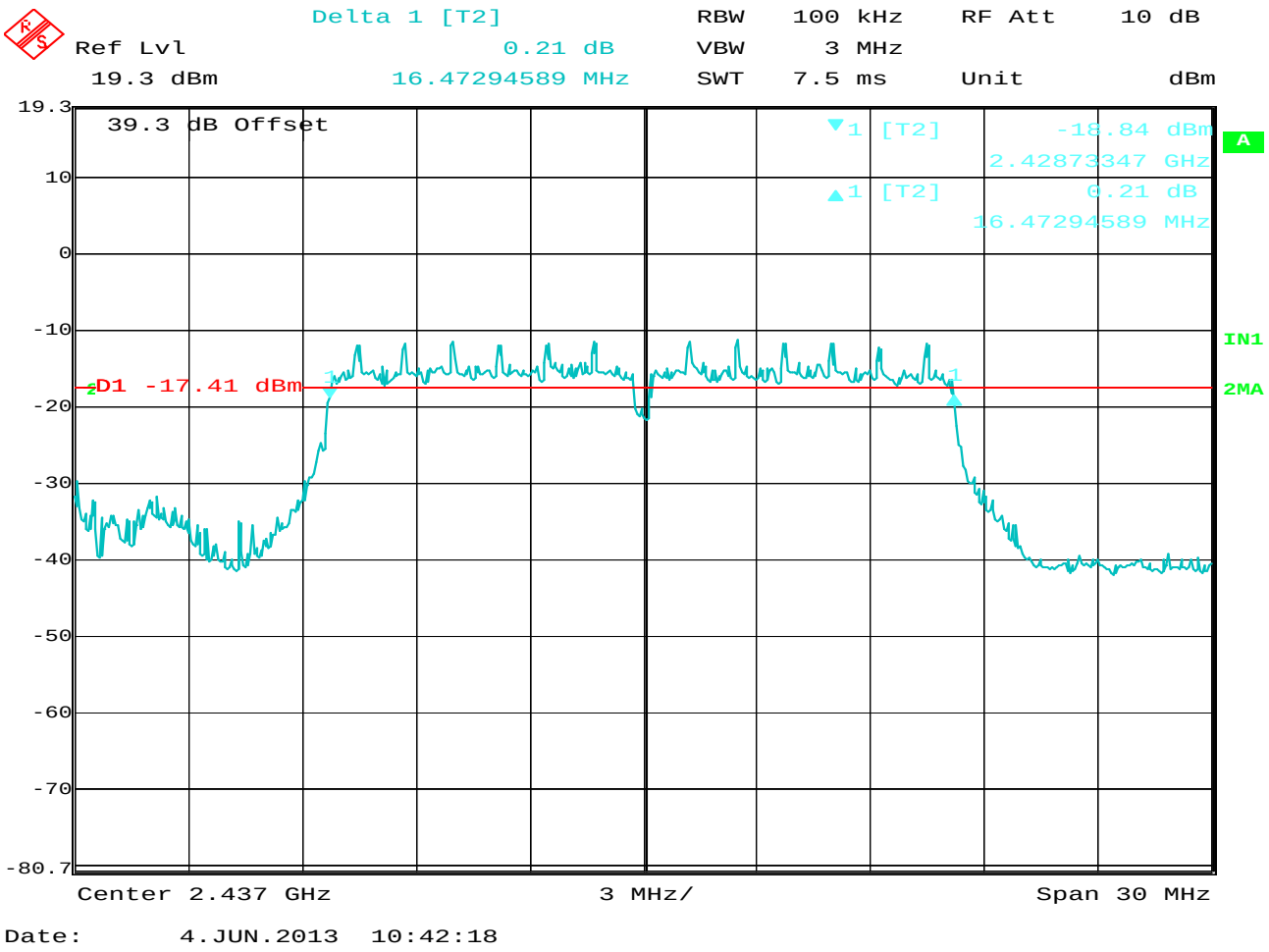
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.4MHz
NOTES	:	802.11g, 6Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



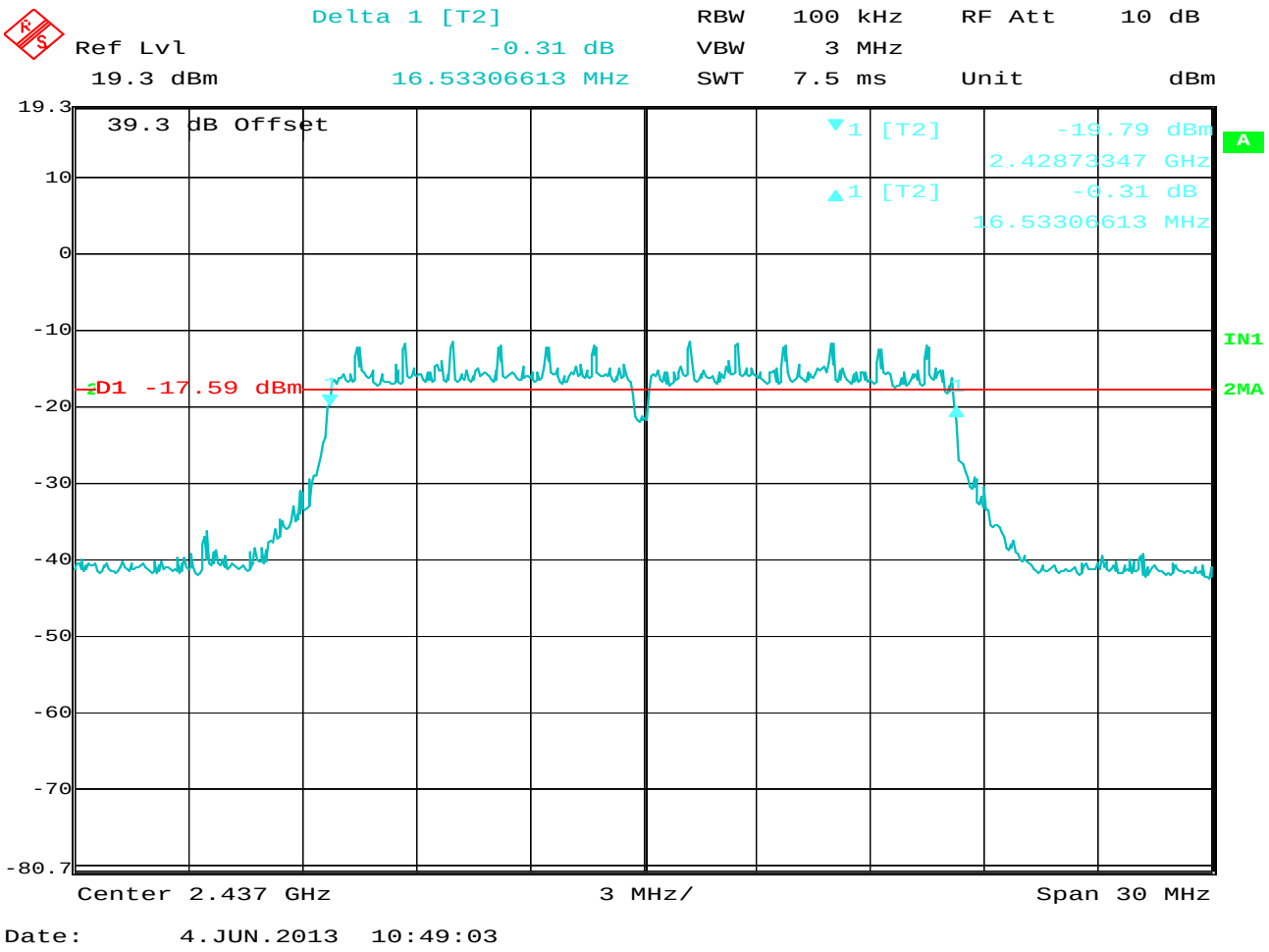
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 9Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



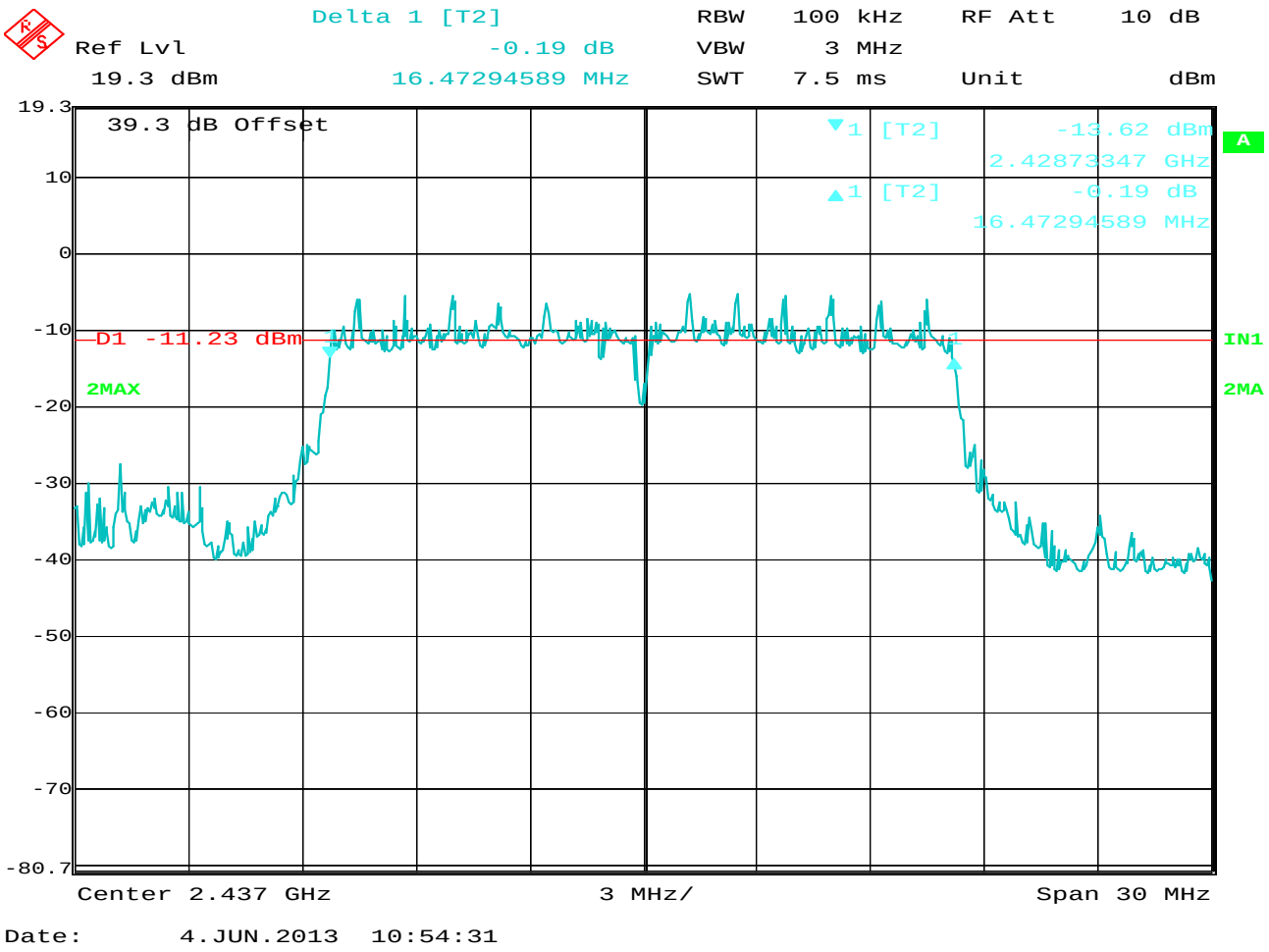
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 12Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



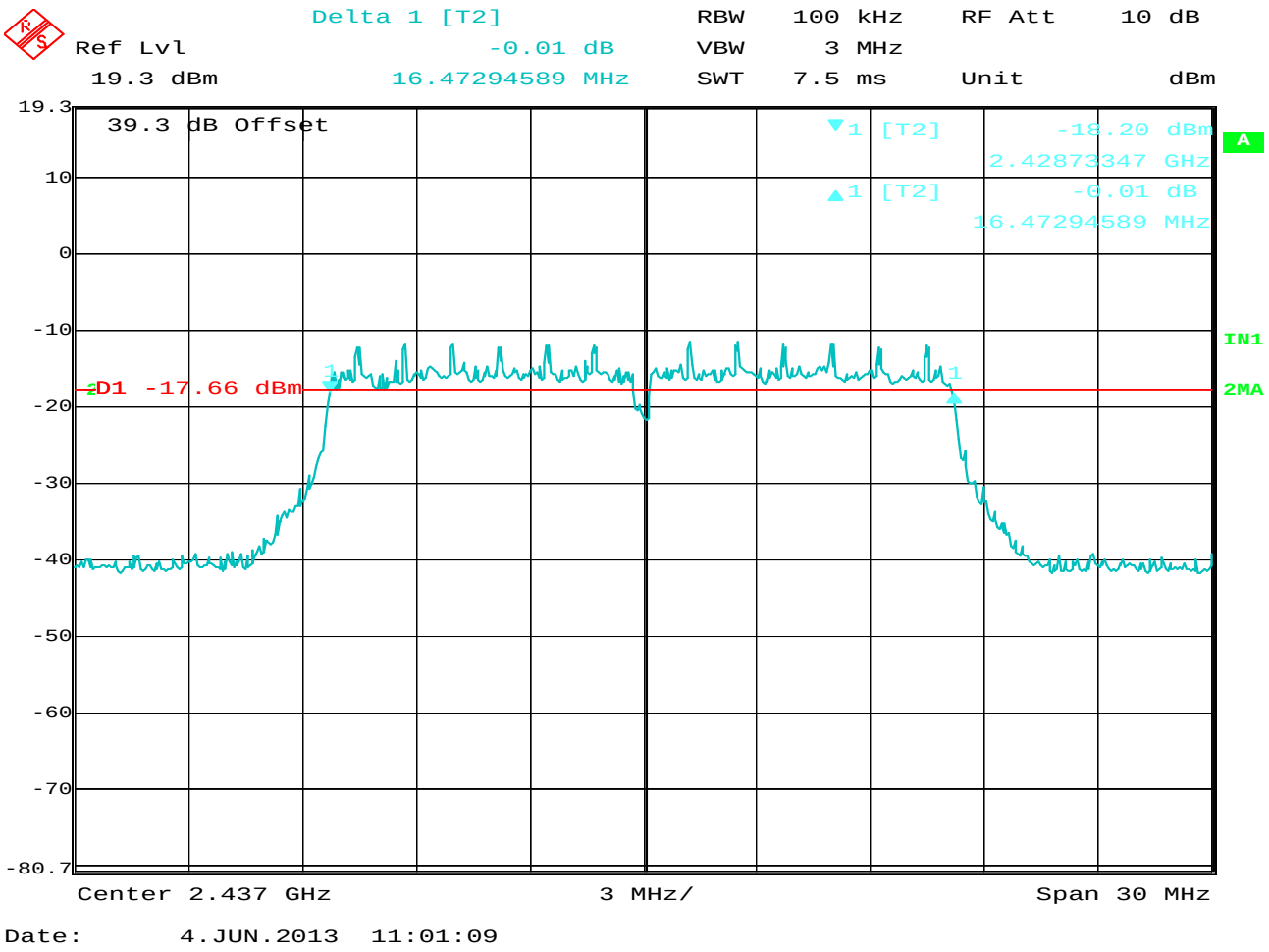
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 18Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



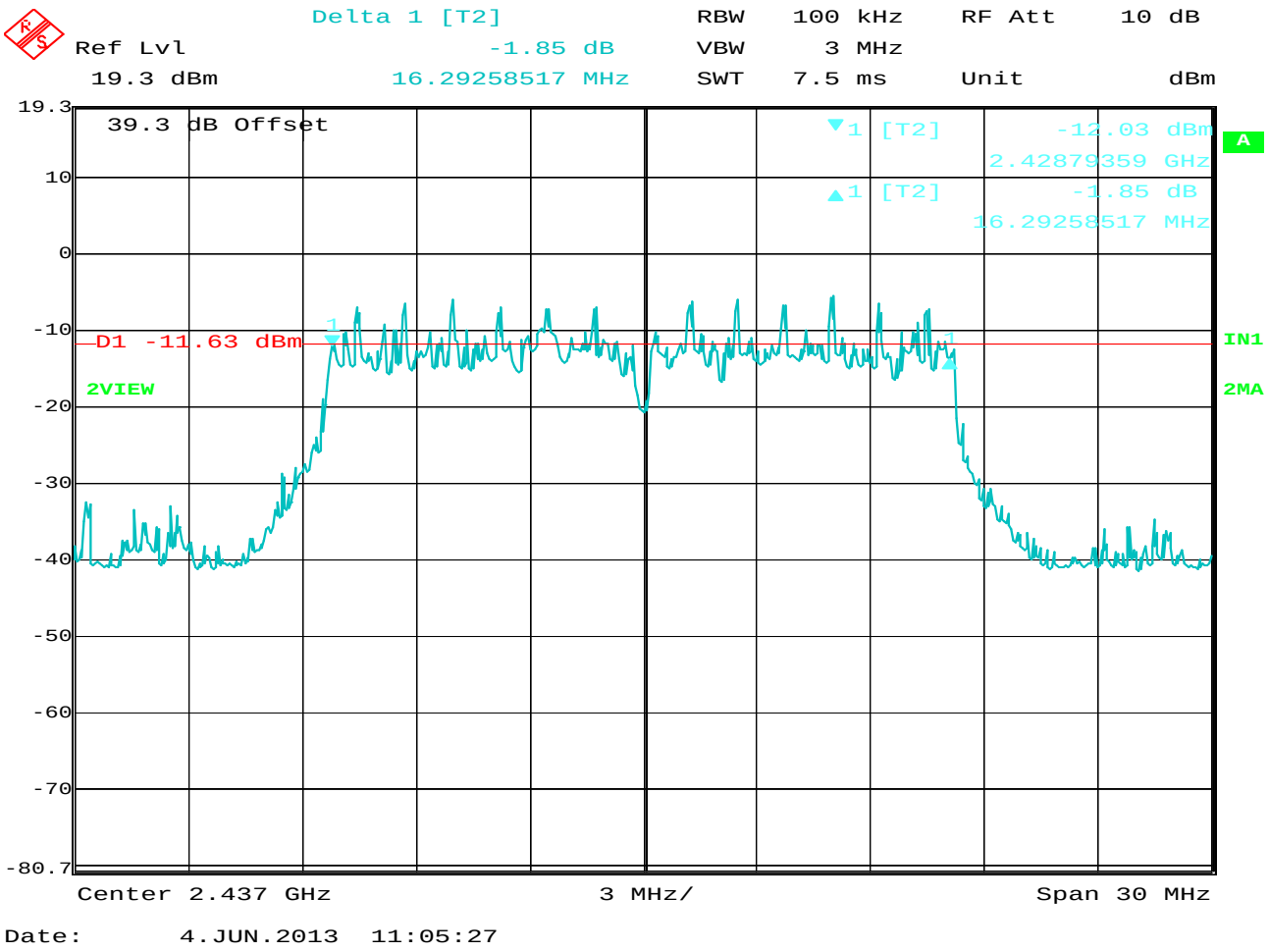
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 24Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



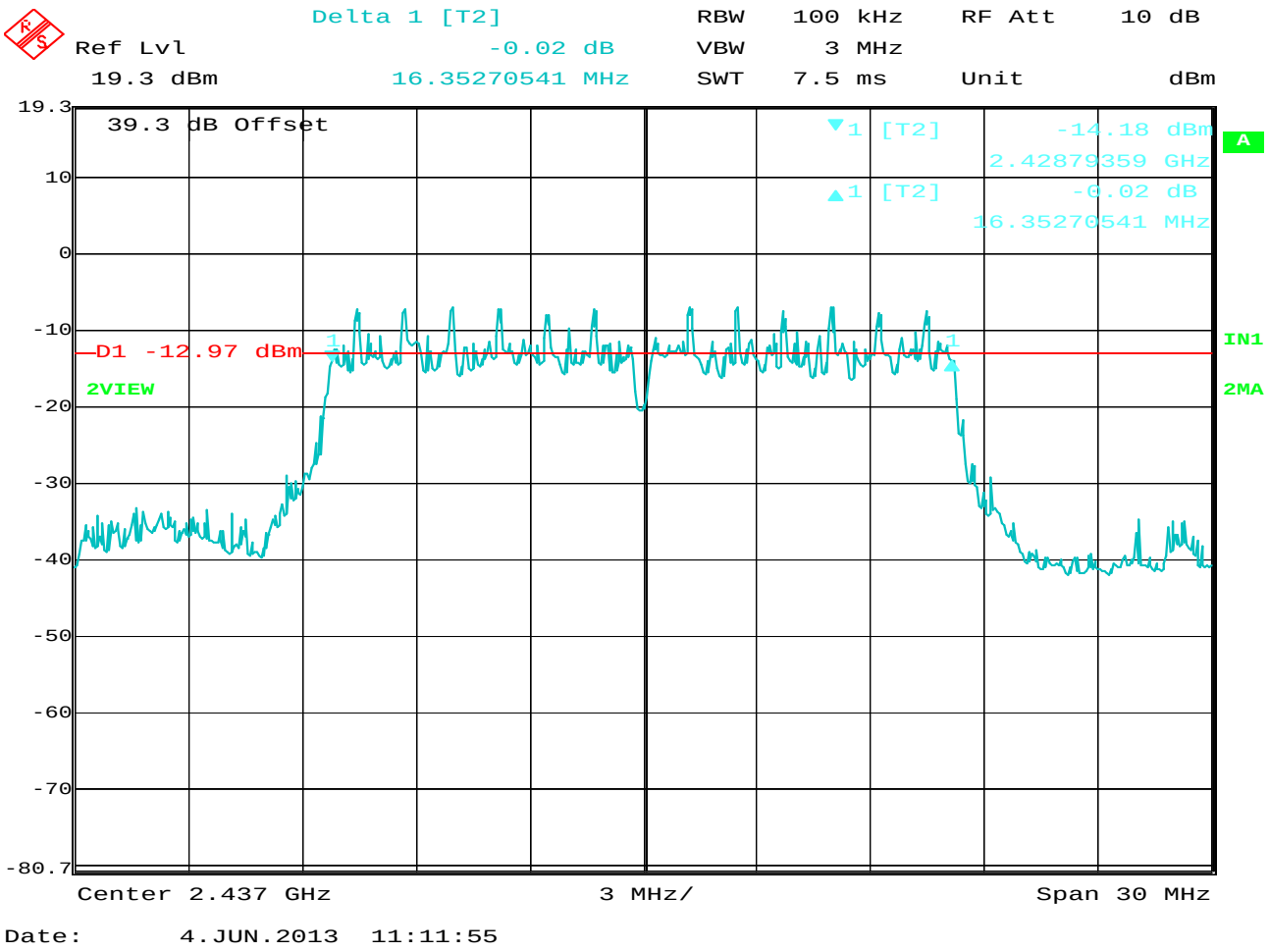
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 36Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



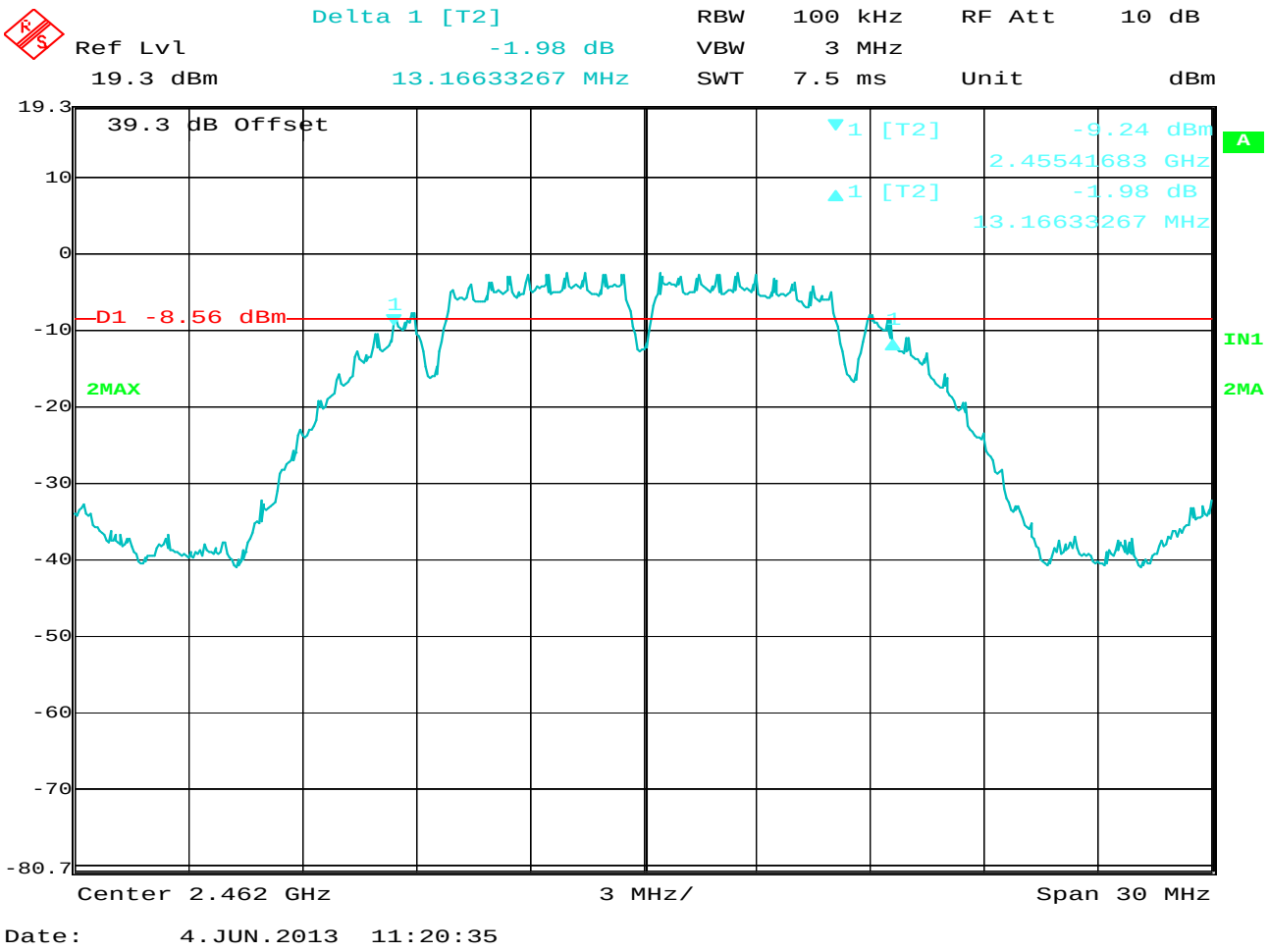
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.3MHz
NOTES	:	802.11g, 48Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



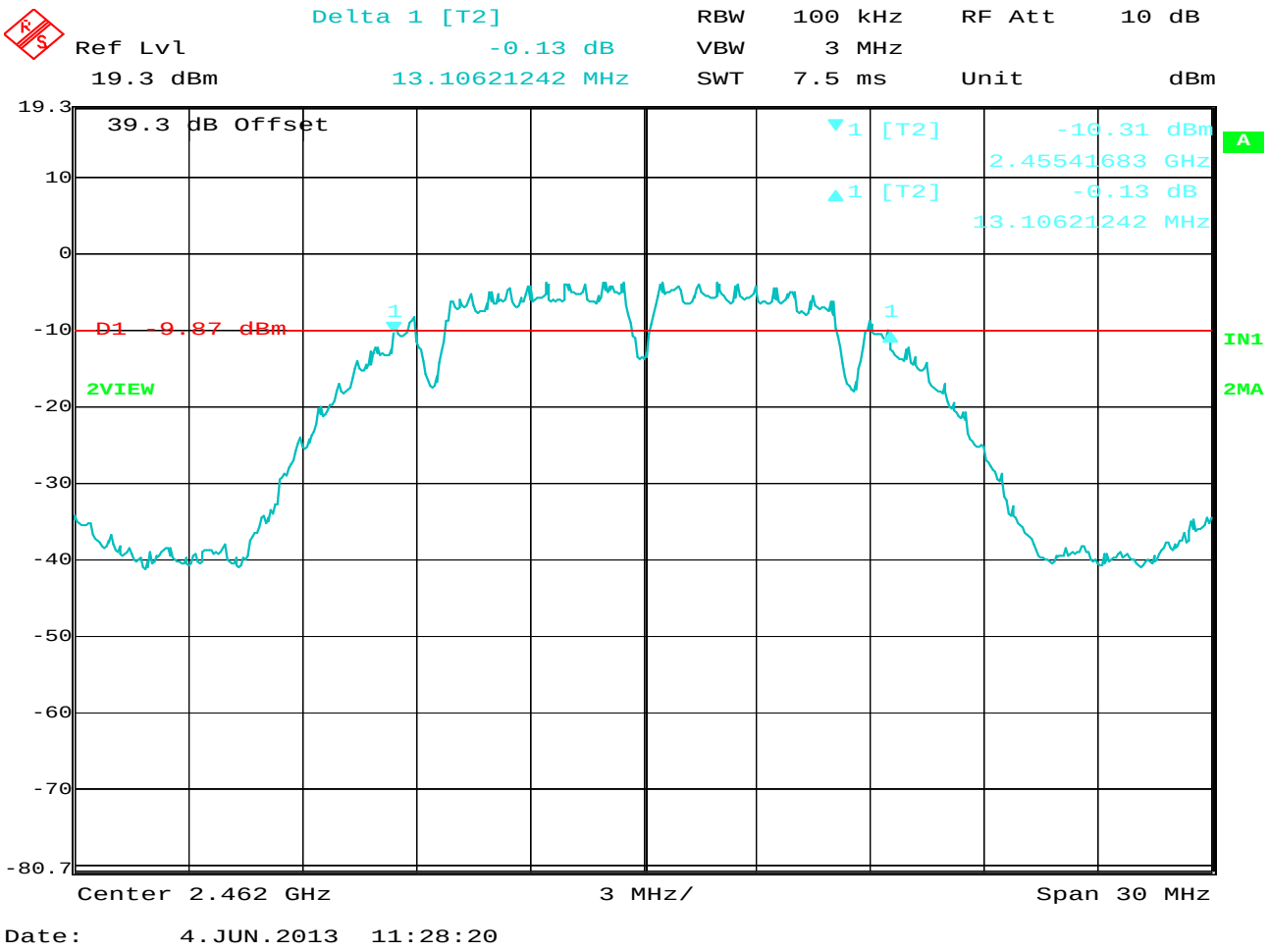
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.4MHz
NOTES	:	802.11g, 54Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



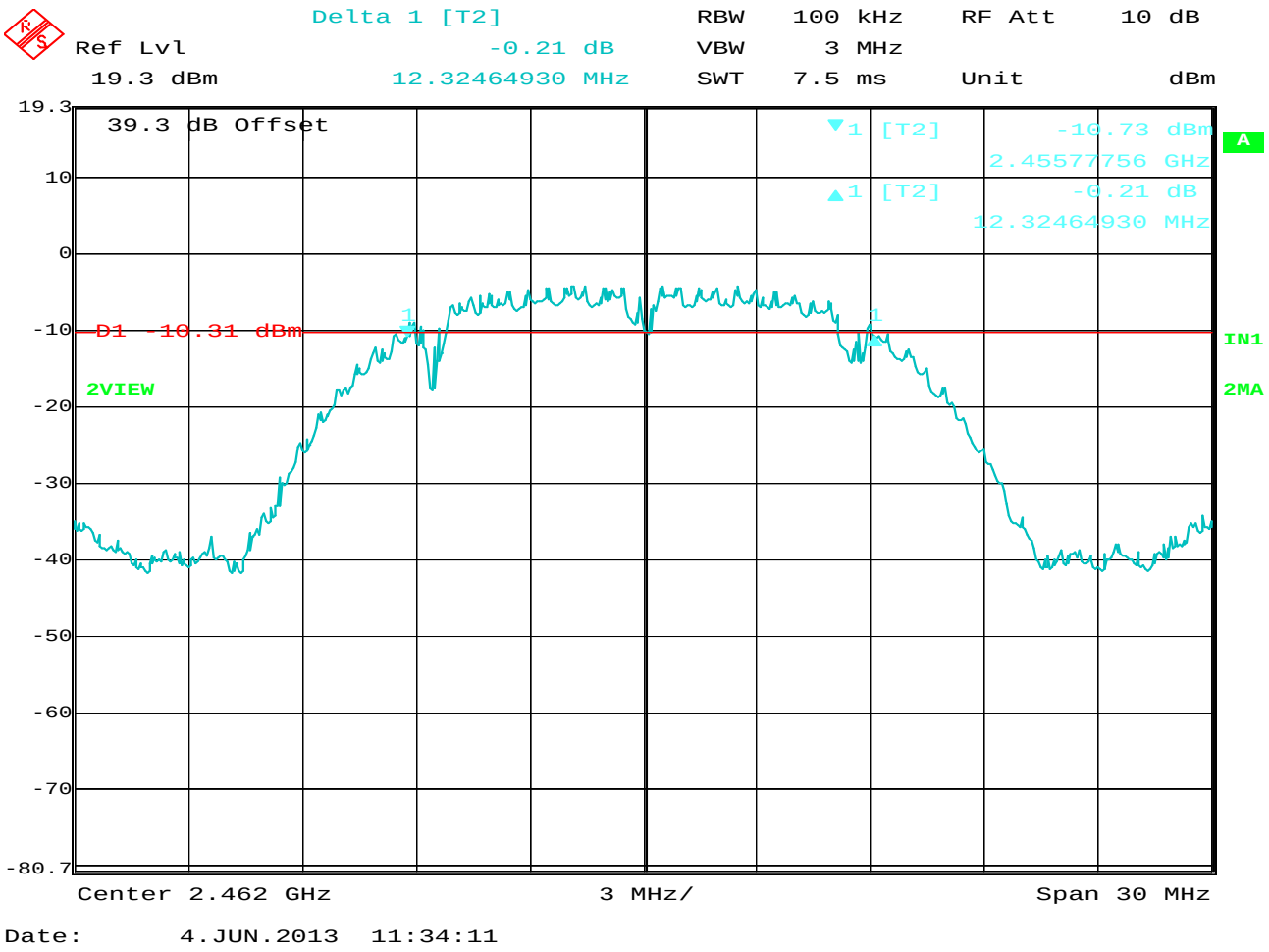
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 13.2MHz
NOTES	:	802.11b, 1Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



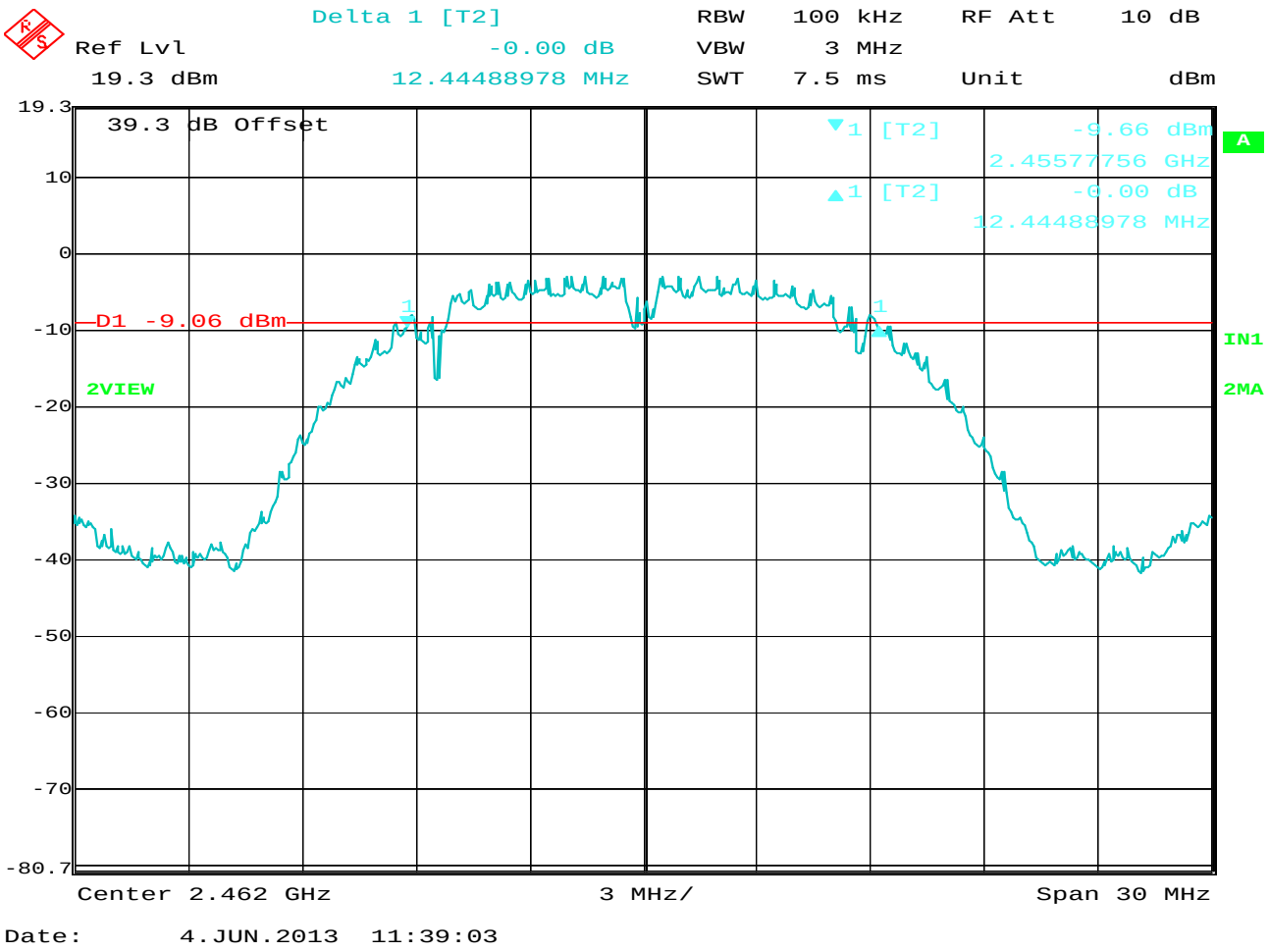
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 13.1MHz
NOTES	:	802.11b, 2Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



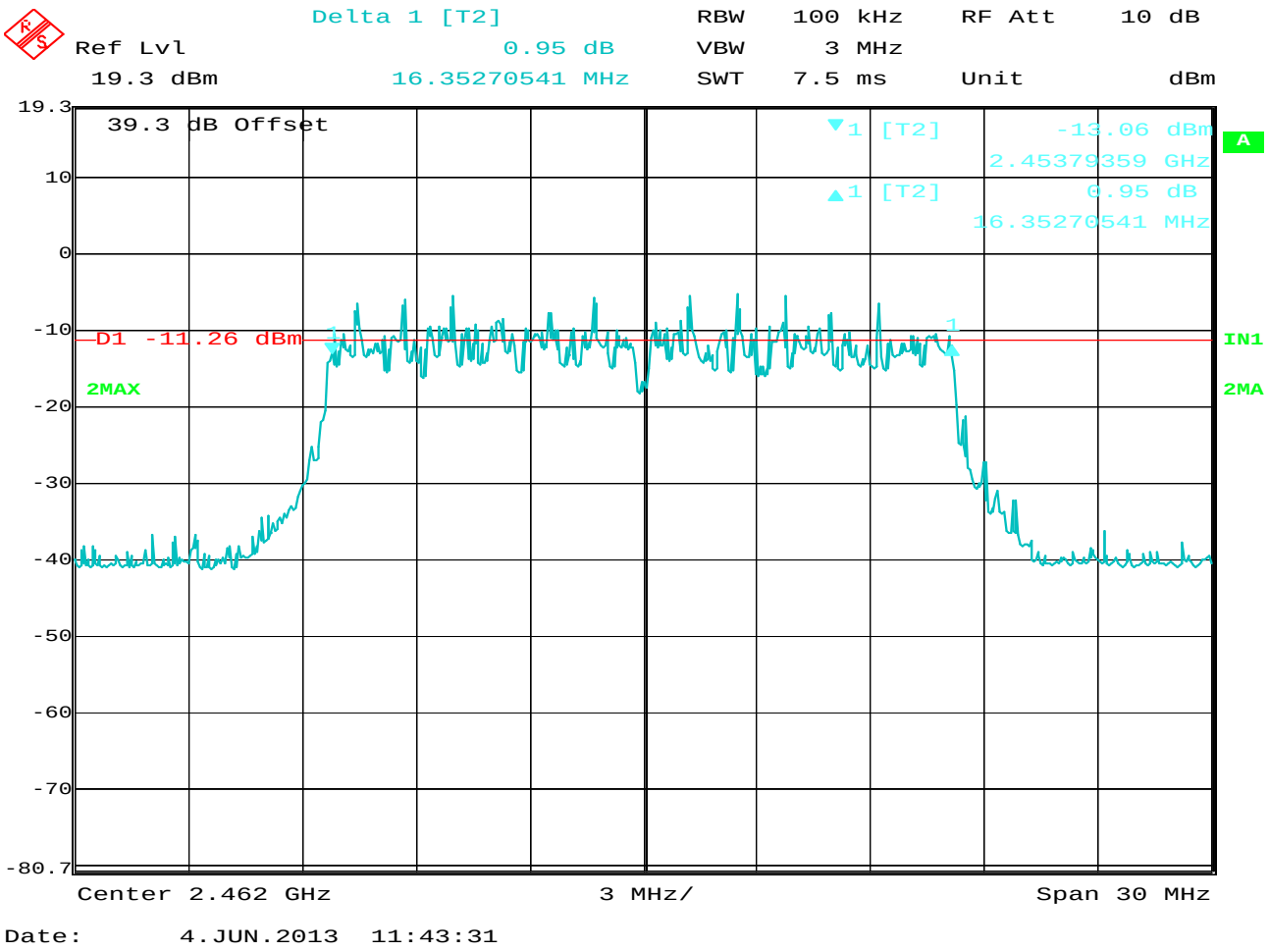
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 12.3MHz
NOTES	:	802.11b, 5.5Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



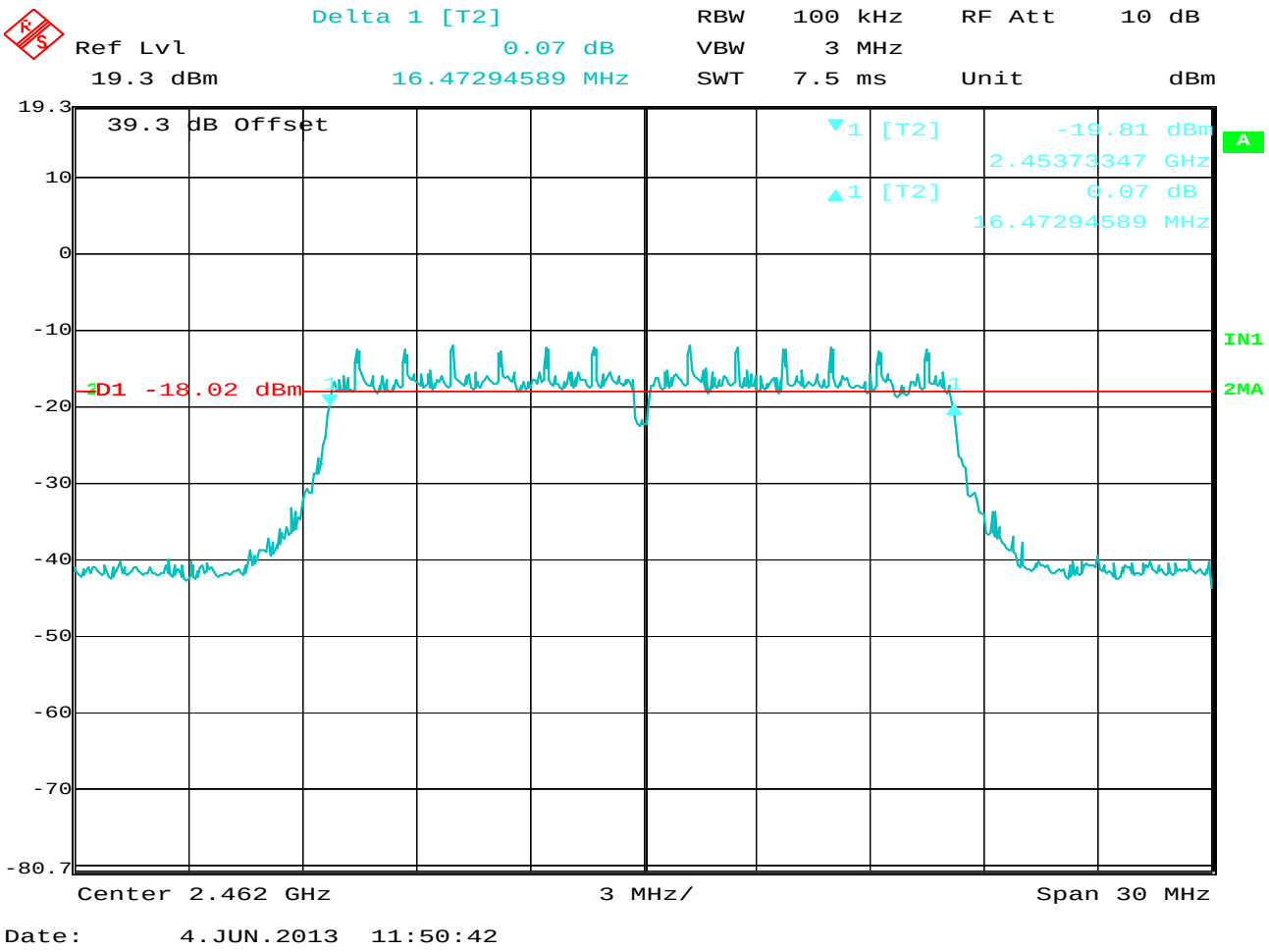
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 12.4MHz
NOTES	:	802.11b, 11Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



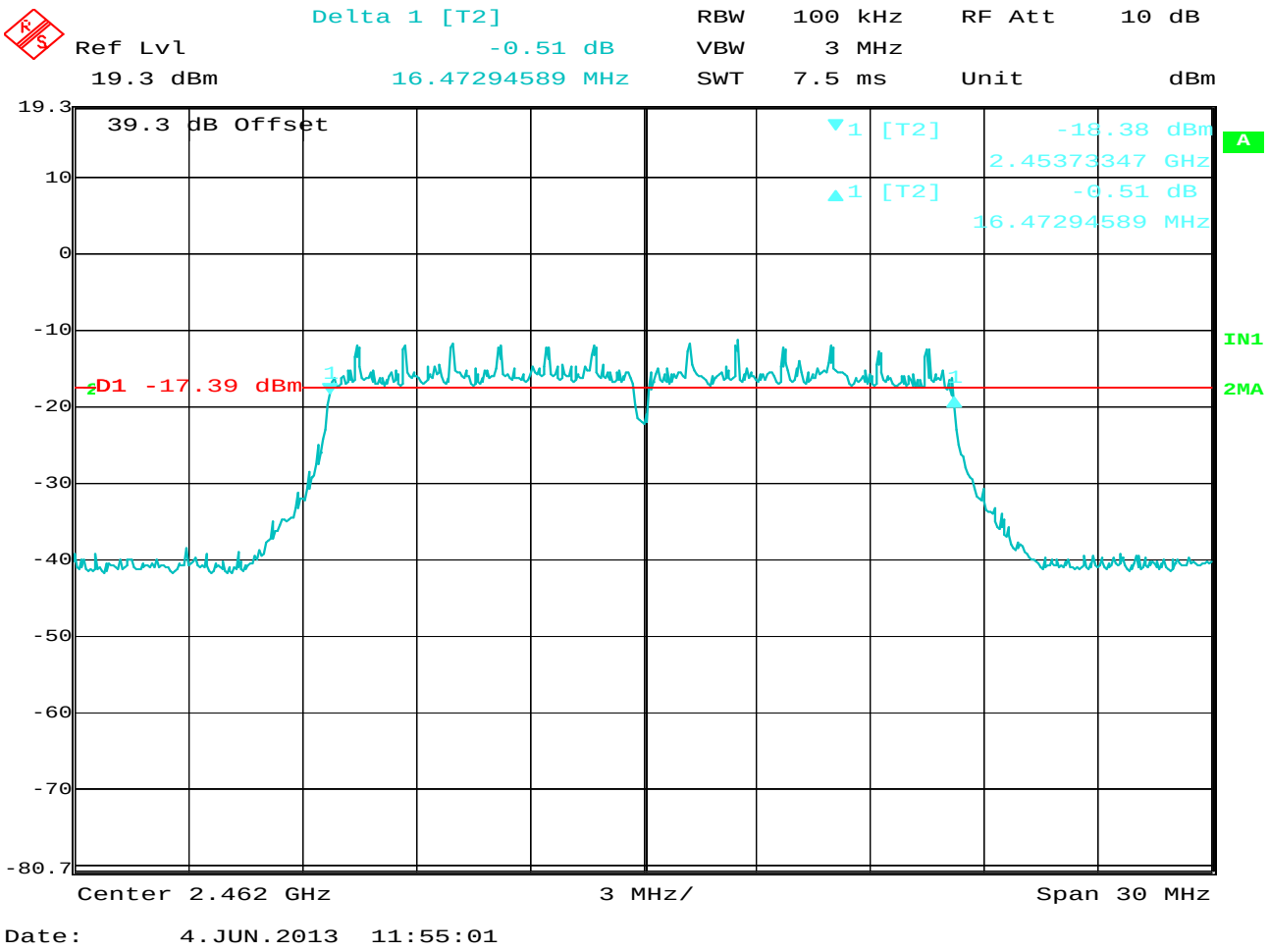
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.4MHz
NOTES	:	802.11g, 6Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



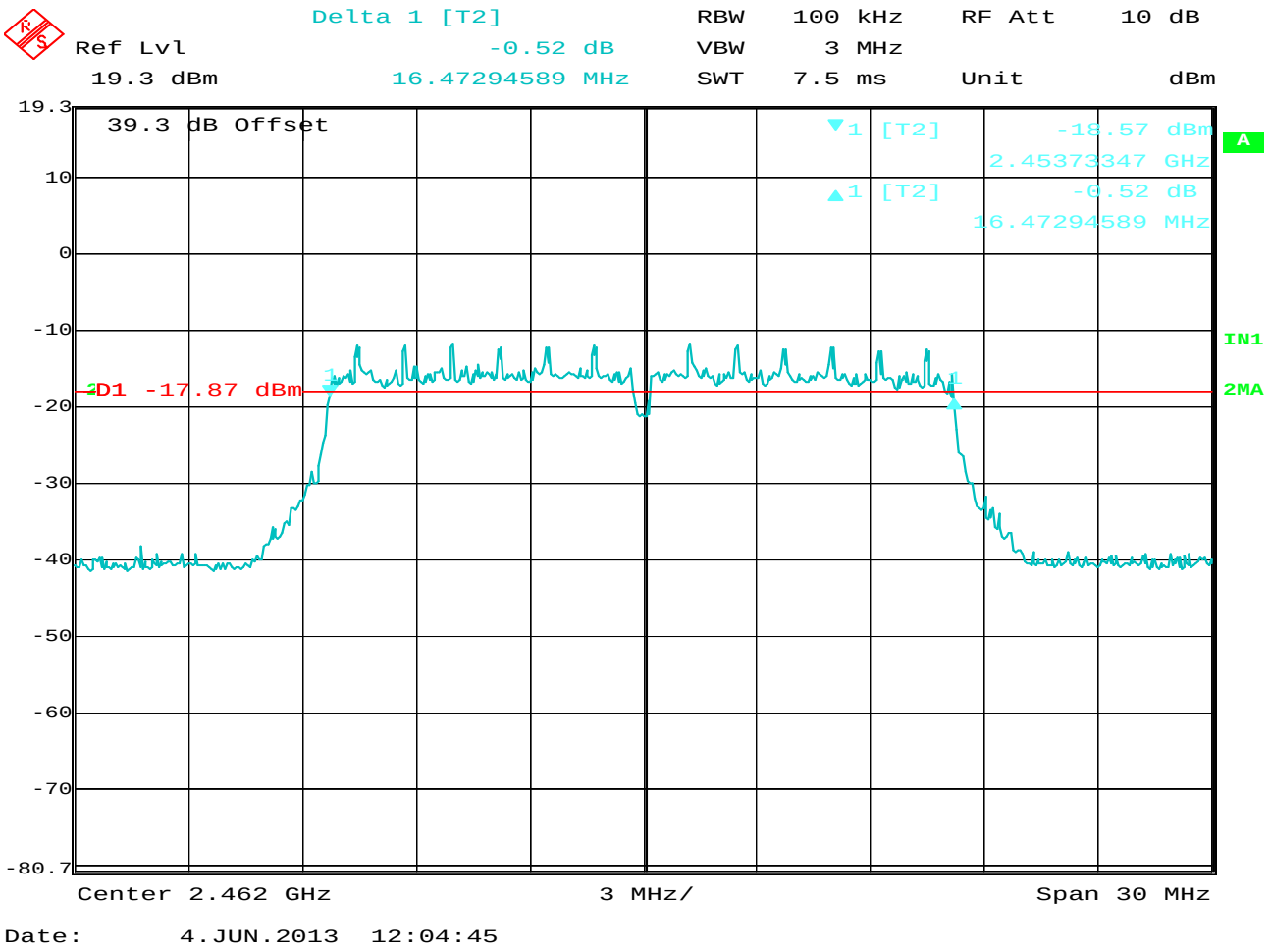
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 9Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



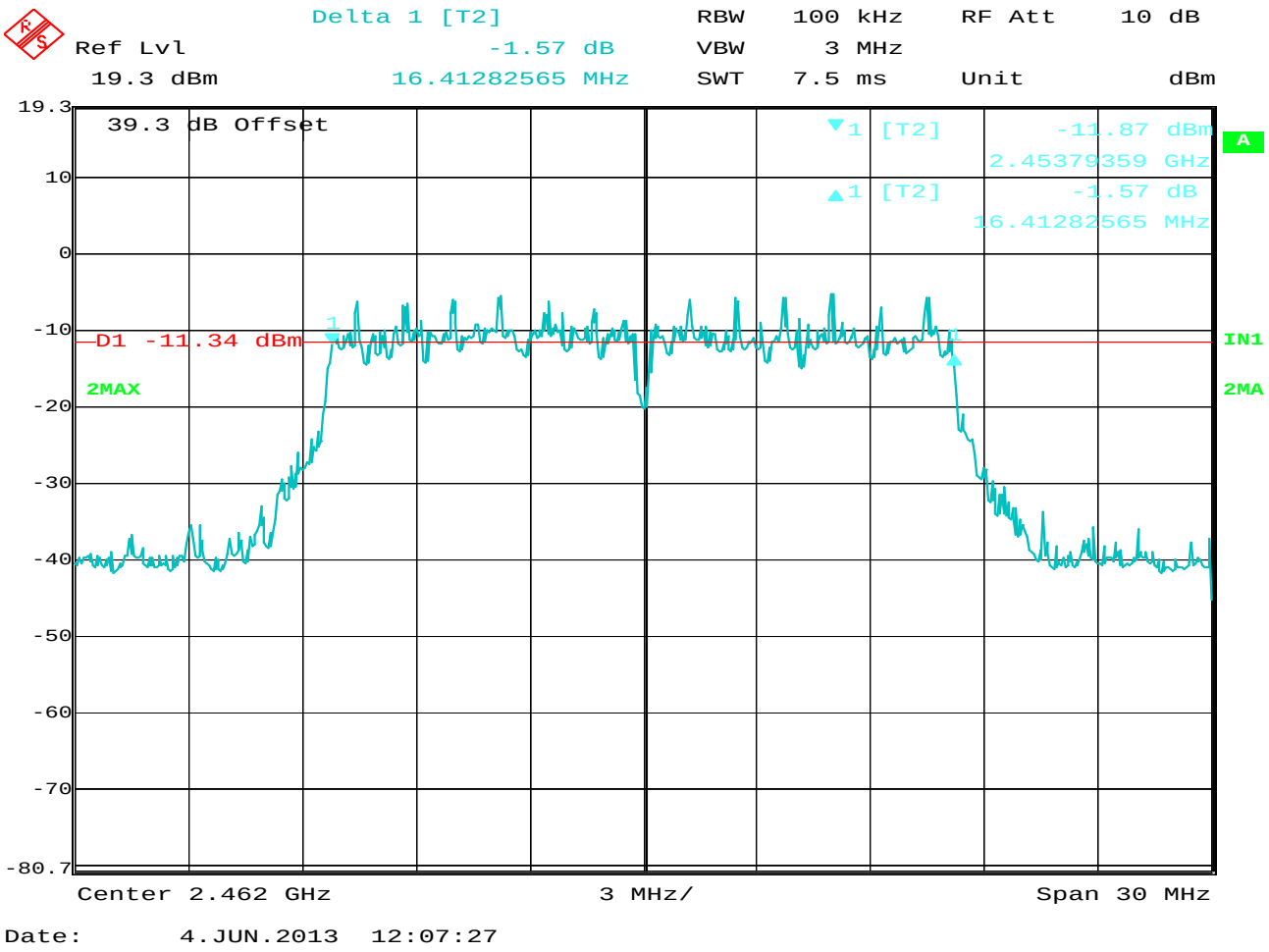
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 12Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



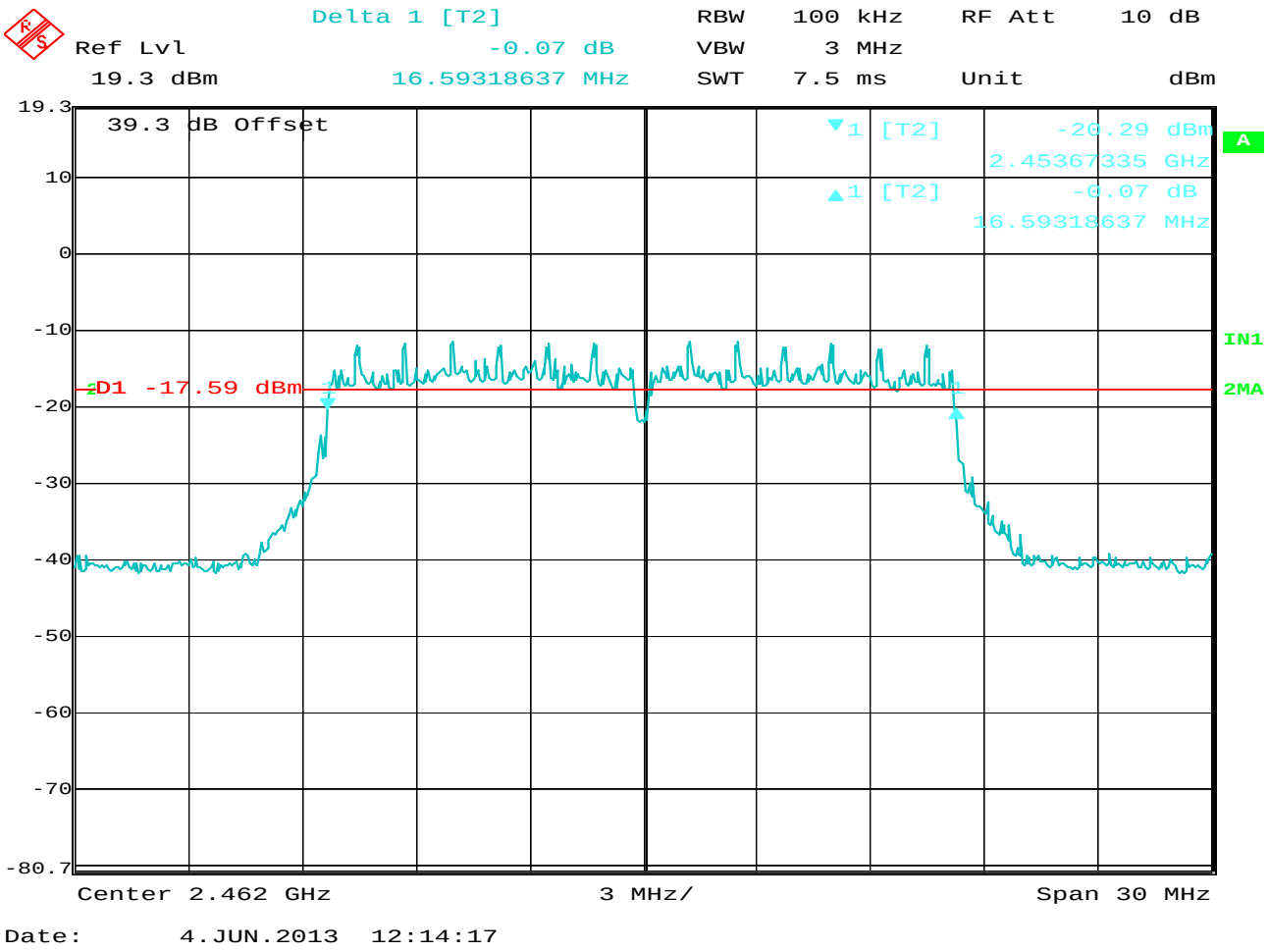
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.5MHz
NOTES	:	802.11g, 18Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



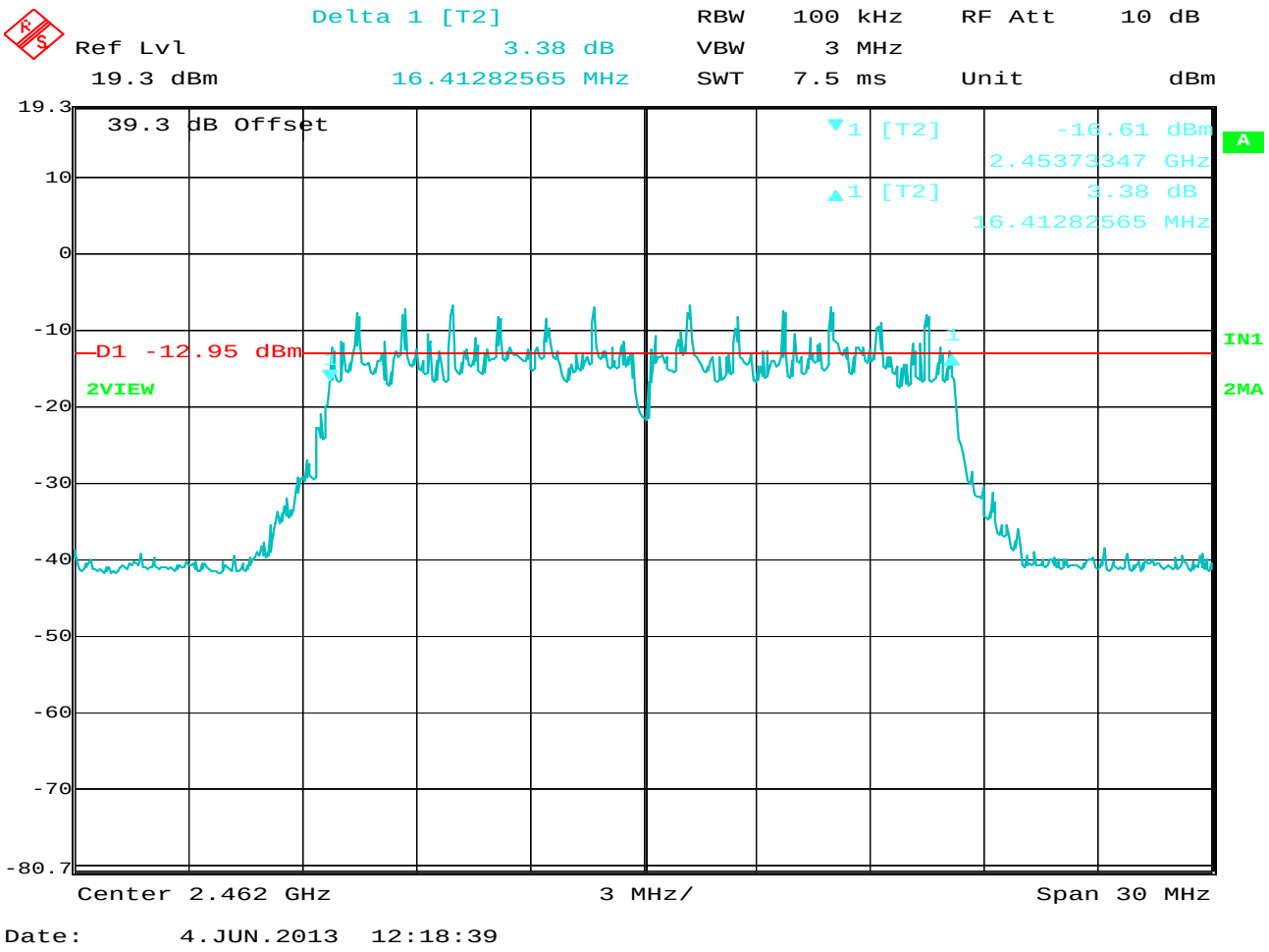
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.4MHz
NOTES	:	802.11g, 24Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



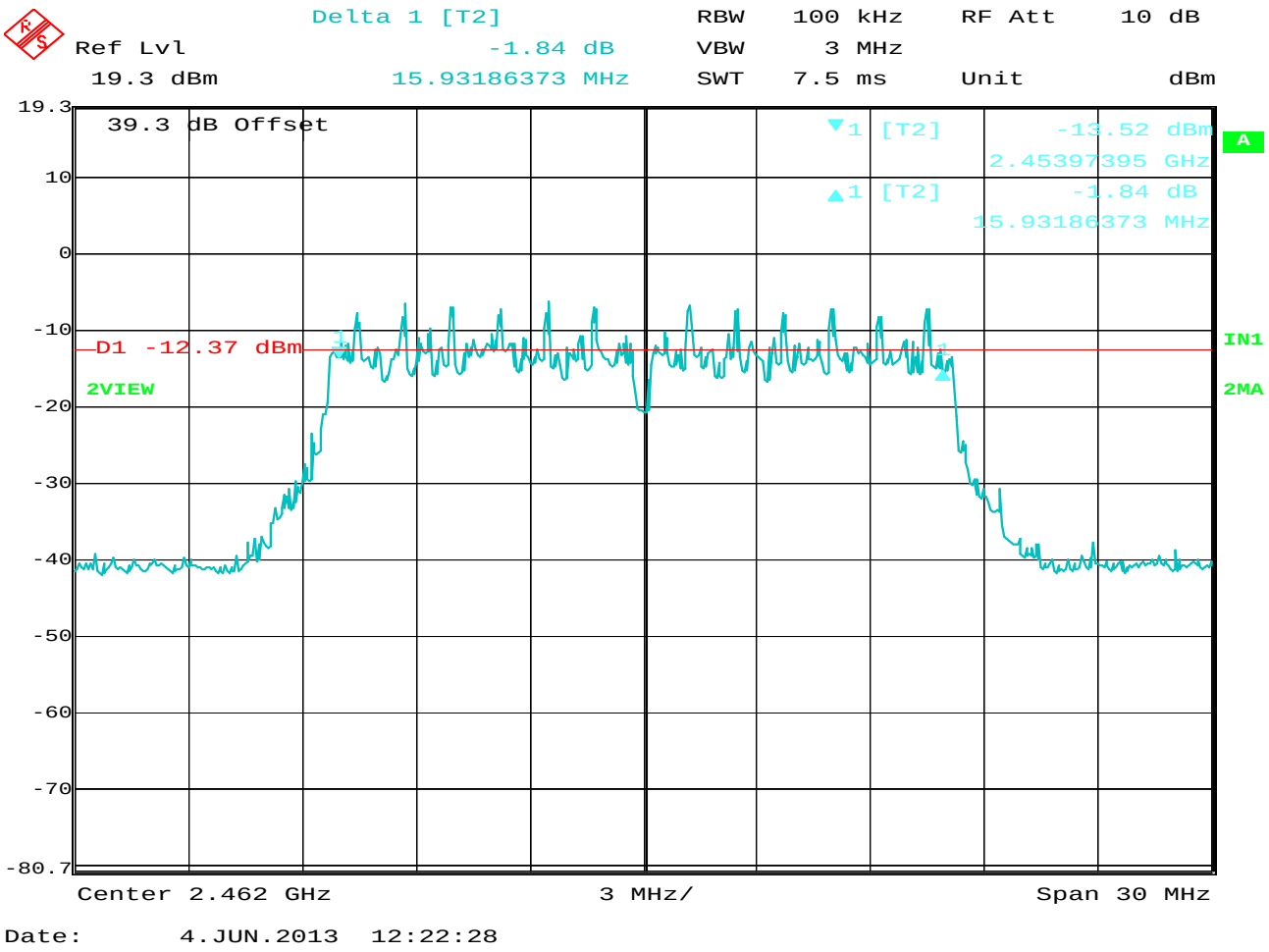
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.6MHz
NOTES	:	802.11g, 36Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



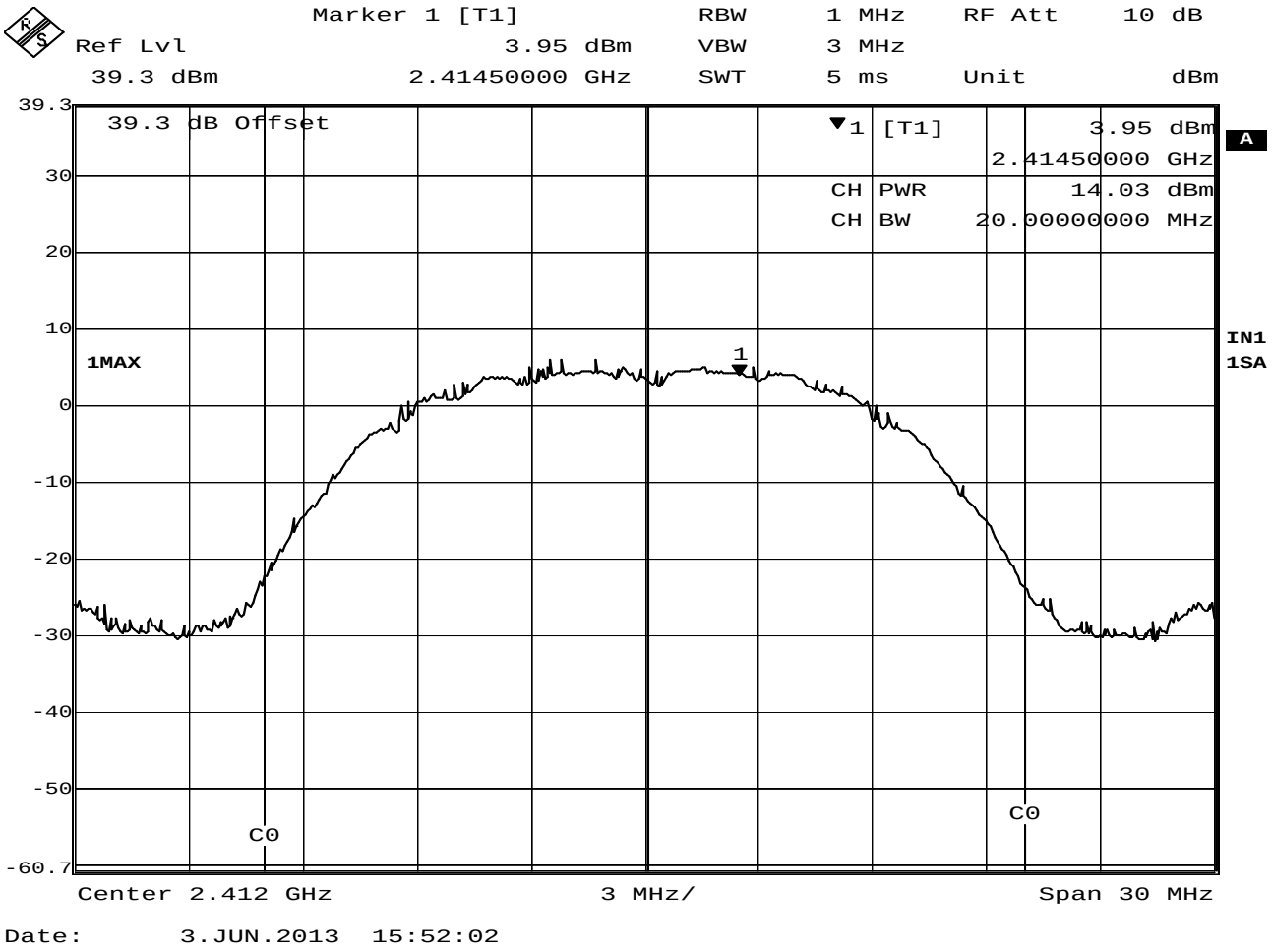
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 16.4MHz
NOTES	:	802.11g, 48Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



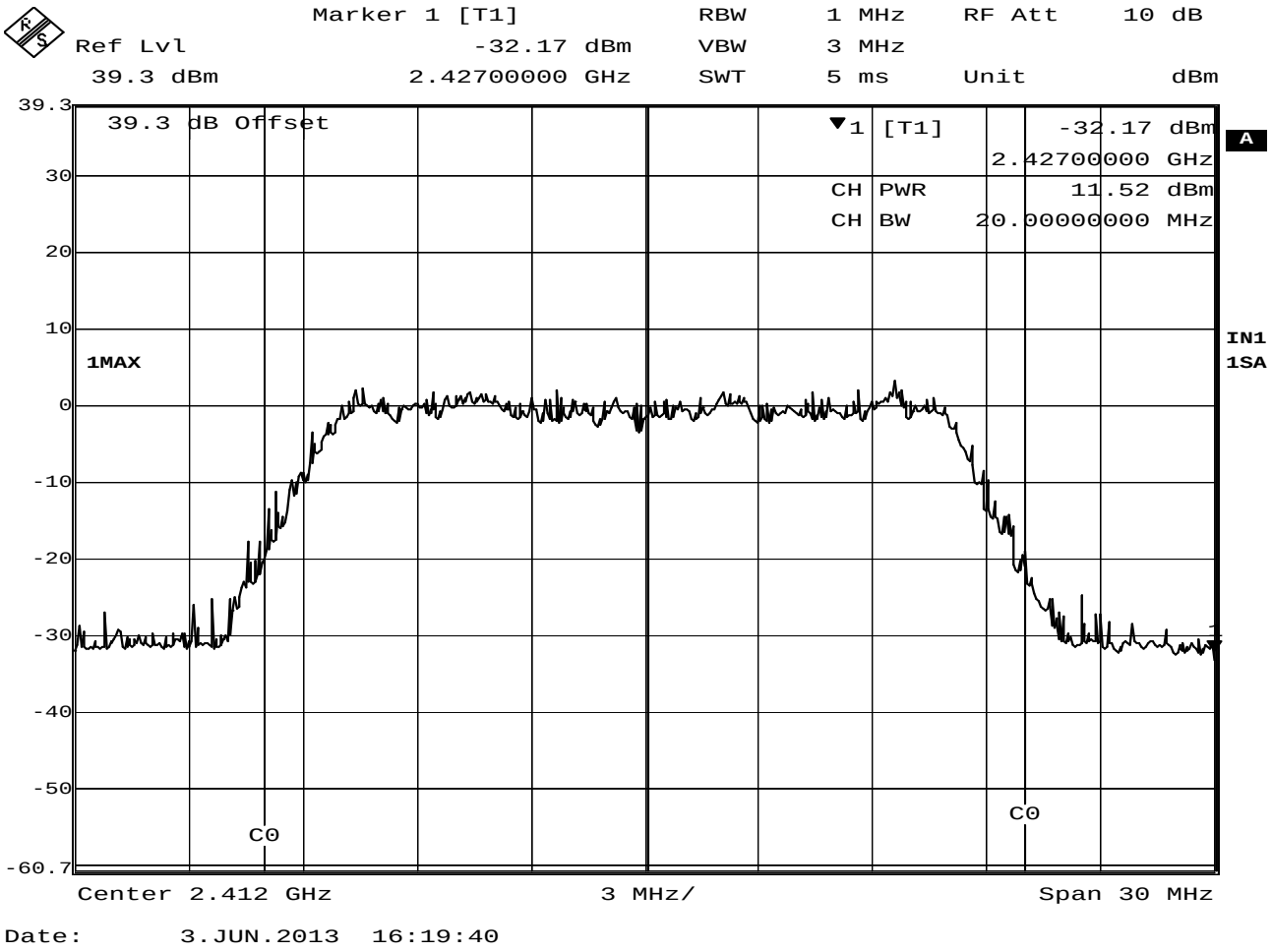
6dB Bandwidth

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	6dB Bandwidth = 15.9MHz
NOTES	:	802.11g, 48Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



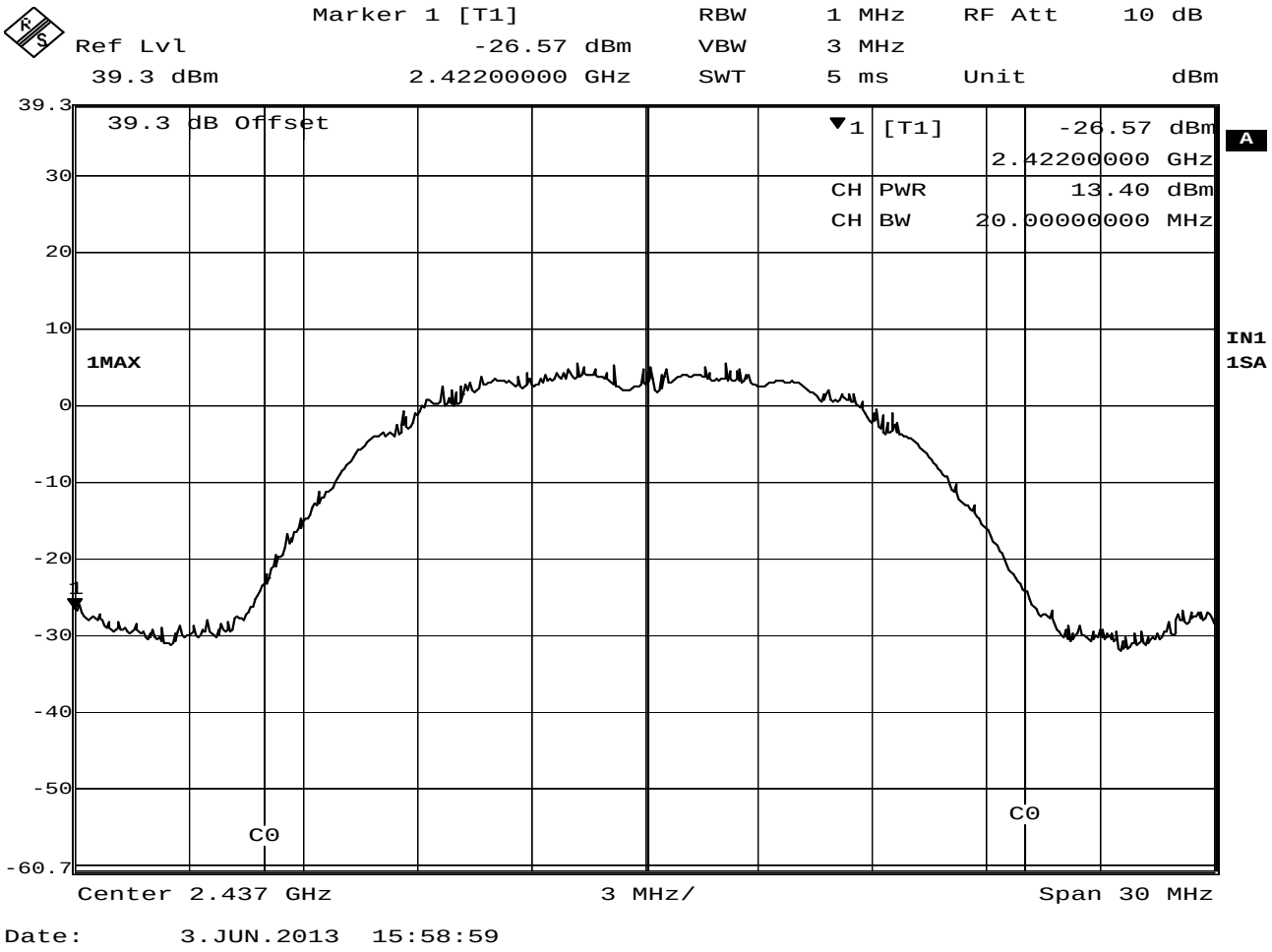
Conducted Output Power

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 3, 2013
TEST PARAMETERS	:	Peak Conducted Output Power = 14.03dBm
NOTES	:	802.11b, 11Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



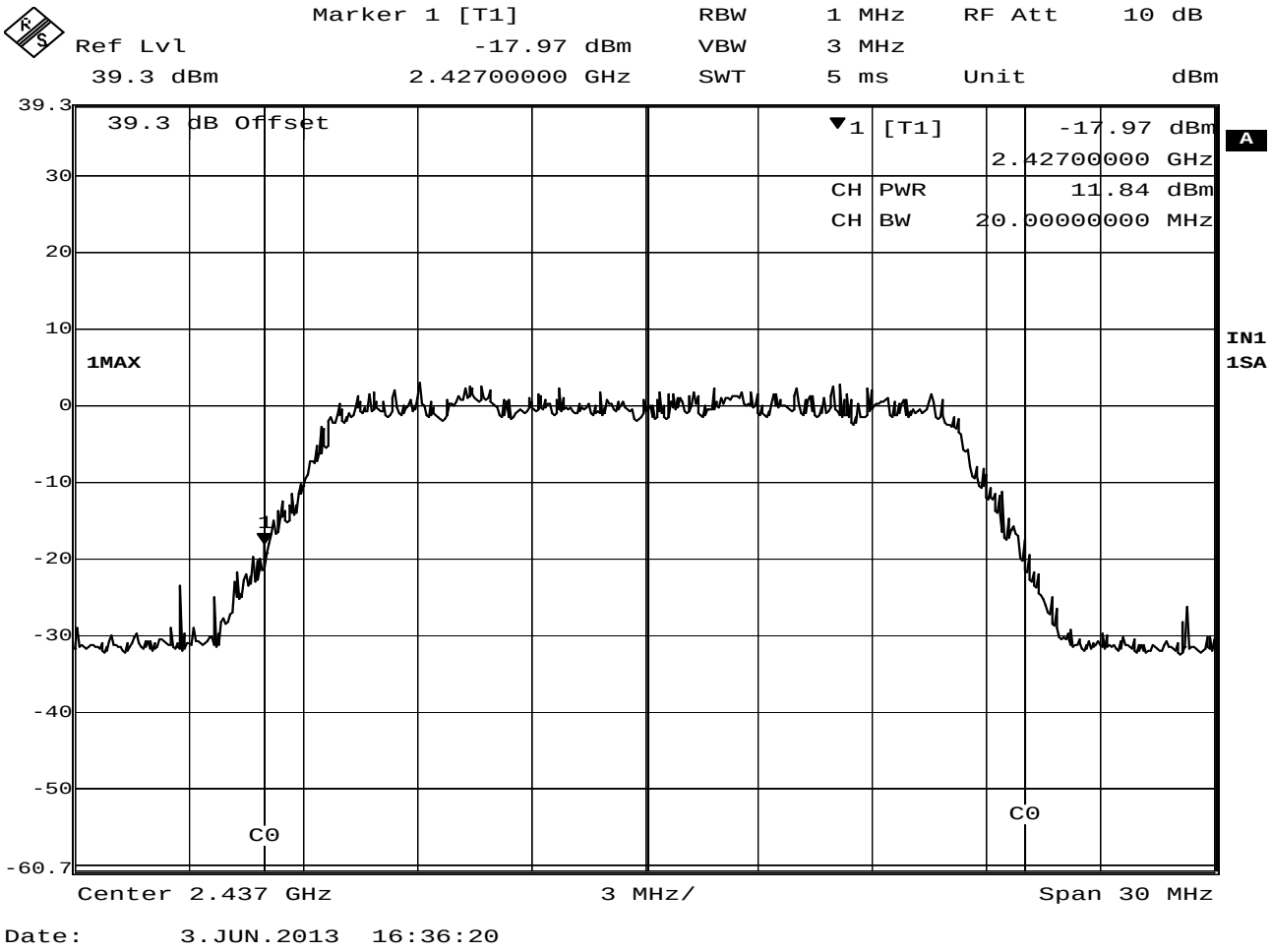
Conducted Output Power

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412MHz
TEST DATE	:	June 3, 2013
TEST PARAMETERS	:	Peak Conducted Output Power = 11.52dBm
NOTES	:	802.11g, 54Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



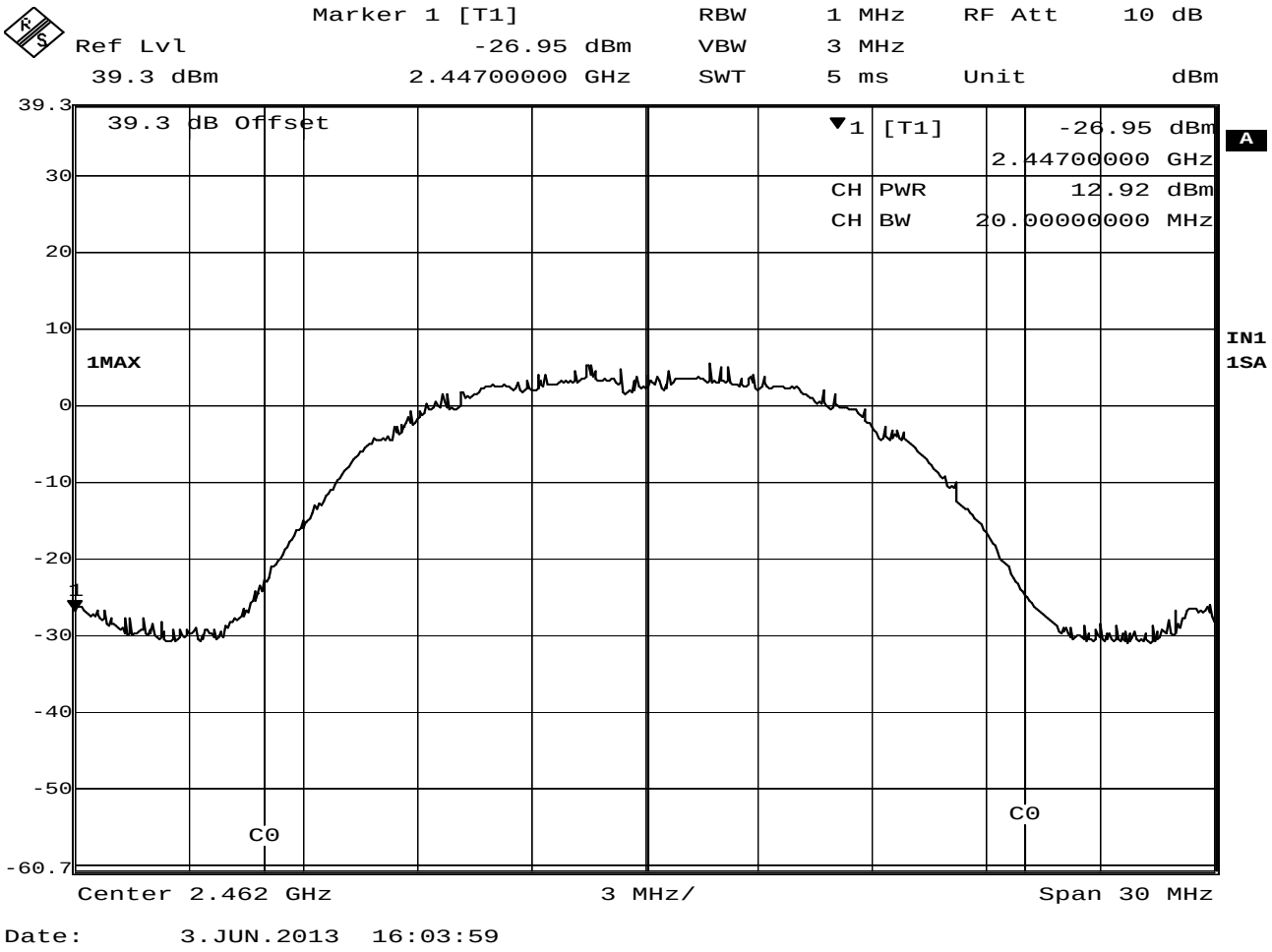
Conducted Output Power

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437MHz
TEST DATE	:	June 3, 2013
TEST PARAMETERS	:	Peak Conducted Output Power = 13.4dBm
NOTES	:	802.11b, 11MB/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



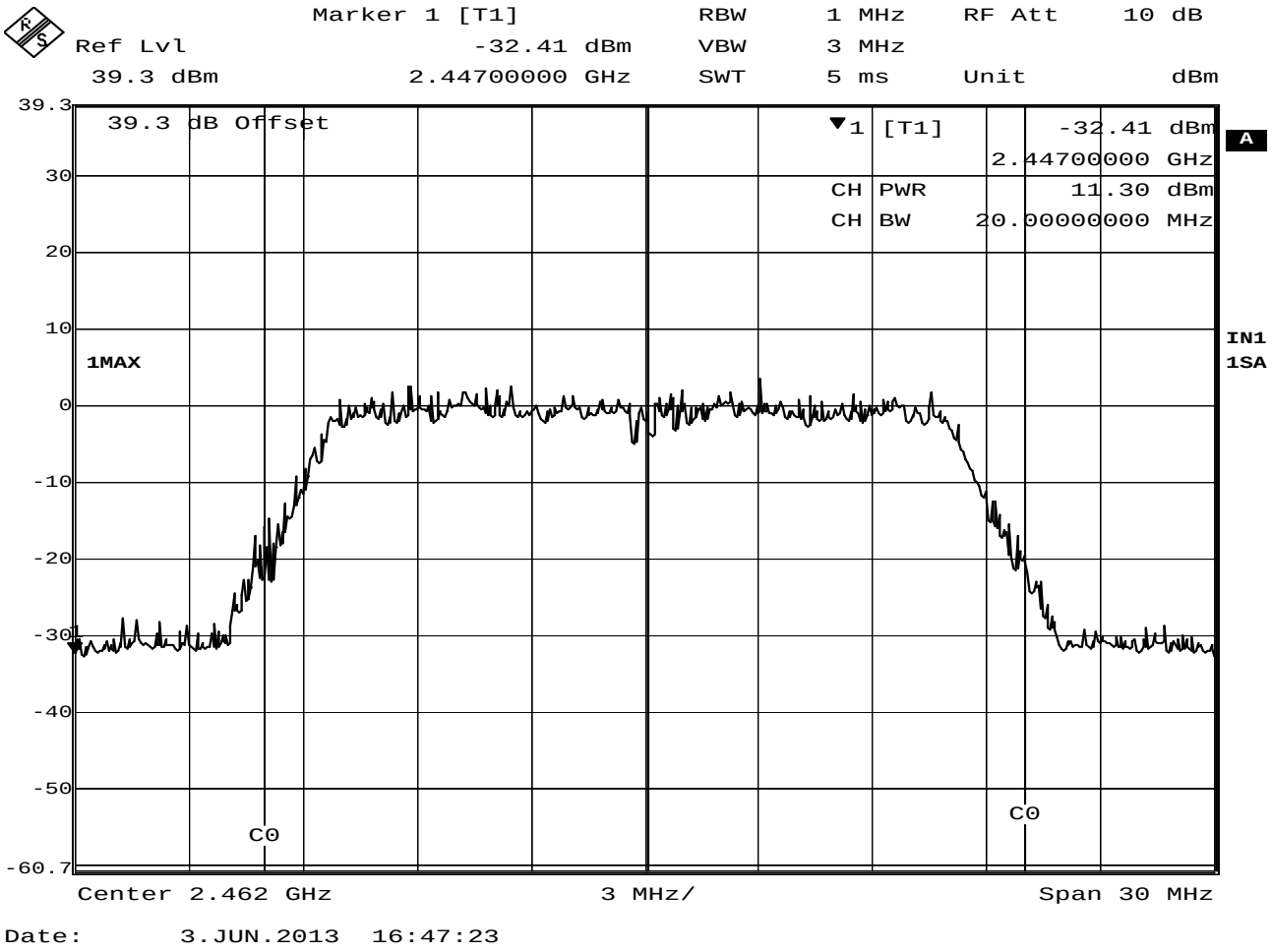
Conducted Output Power

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437MHz
TEST DATE	:	June 3, 2013
TEST PARAMETERS	:	Peak Conducted Output Power = 11.84dBm
NOTES	:	802.11g, 54Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



Conducted Output Power

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462MHz
TEST DATE	:	June 3, 2013
TEST PARAMETERS	:	Peak Conducted Output Power = 12.92dBm
NOTES	:	802.11b, 11Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



Conducted Output Power

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462MHz
TEST DATE	:	June 3, 2013
TEST PARAMETERS	:	Peak Conducted Output Power = 11.30dBm
NOTES	:	802.11g, 54Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6

MANUFACTURER : Life Shadow LLC
MODEL NUMBER : LSM01
SERIAL NUMBER : None Assigned
TEST MODE : See Below
TEST DATE : June 3, 2013
TEST PARAMETERS : Effective Isotropic Radiated Power (EIRP)
NOTES : 802.11b, 11Mb/s
EQUIPMENT USED : RBB0, T2S3,T2S6

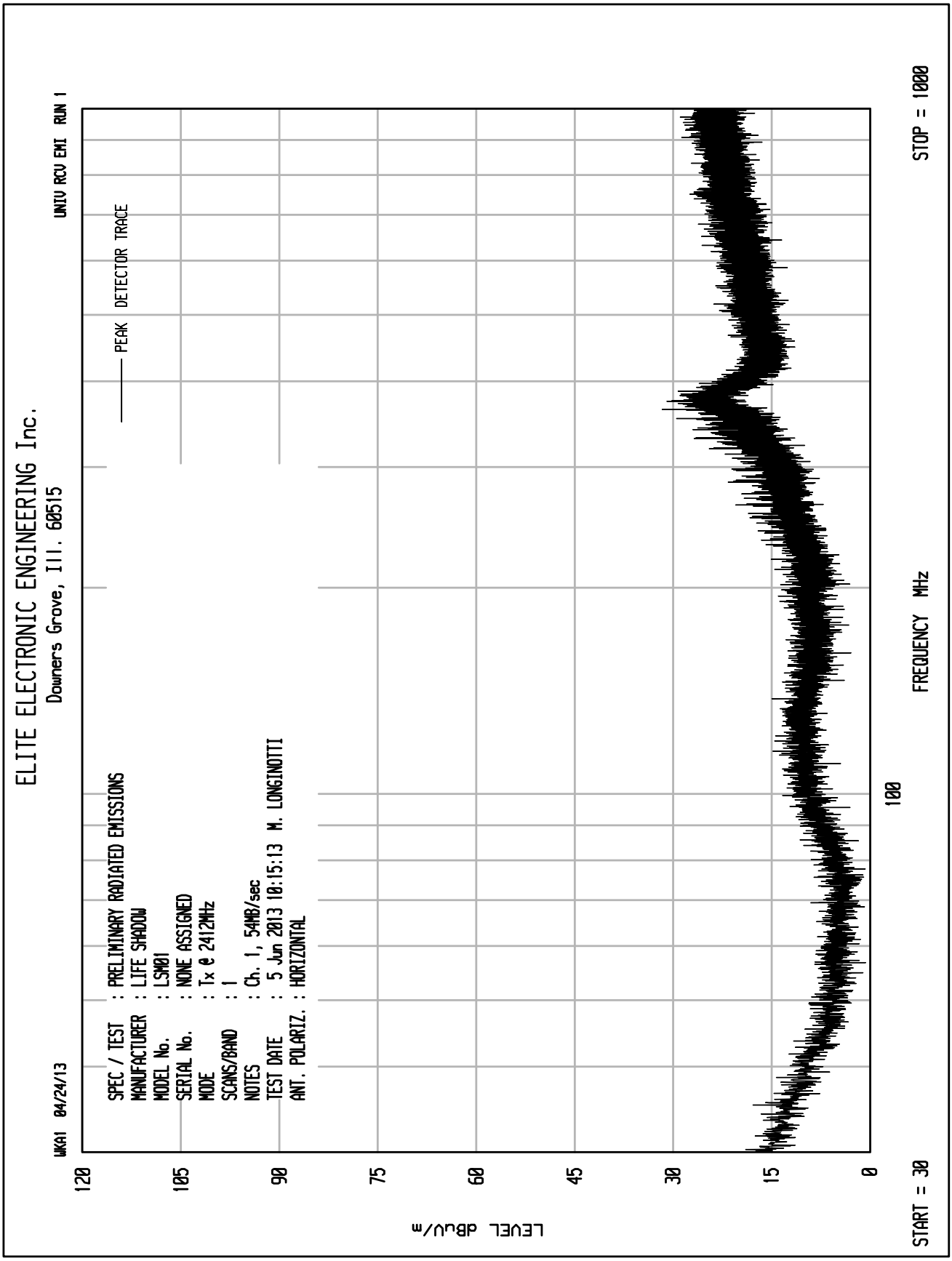
Transmit Frequency MHz	Maximum Peak Conducted Output Power dBm	Maximum Transmit Antenna Gain dBi	Maximum Effective Isotropic Radiated Power (EIRP)
2412	14.03	0.5	14.53
2437	13.40	0.5	13.90
2462	12.92	0.5	13.42

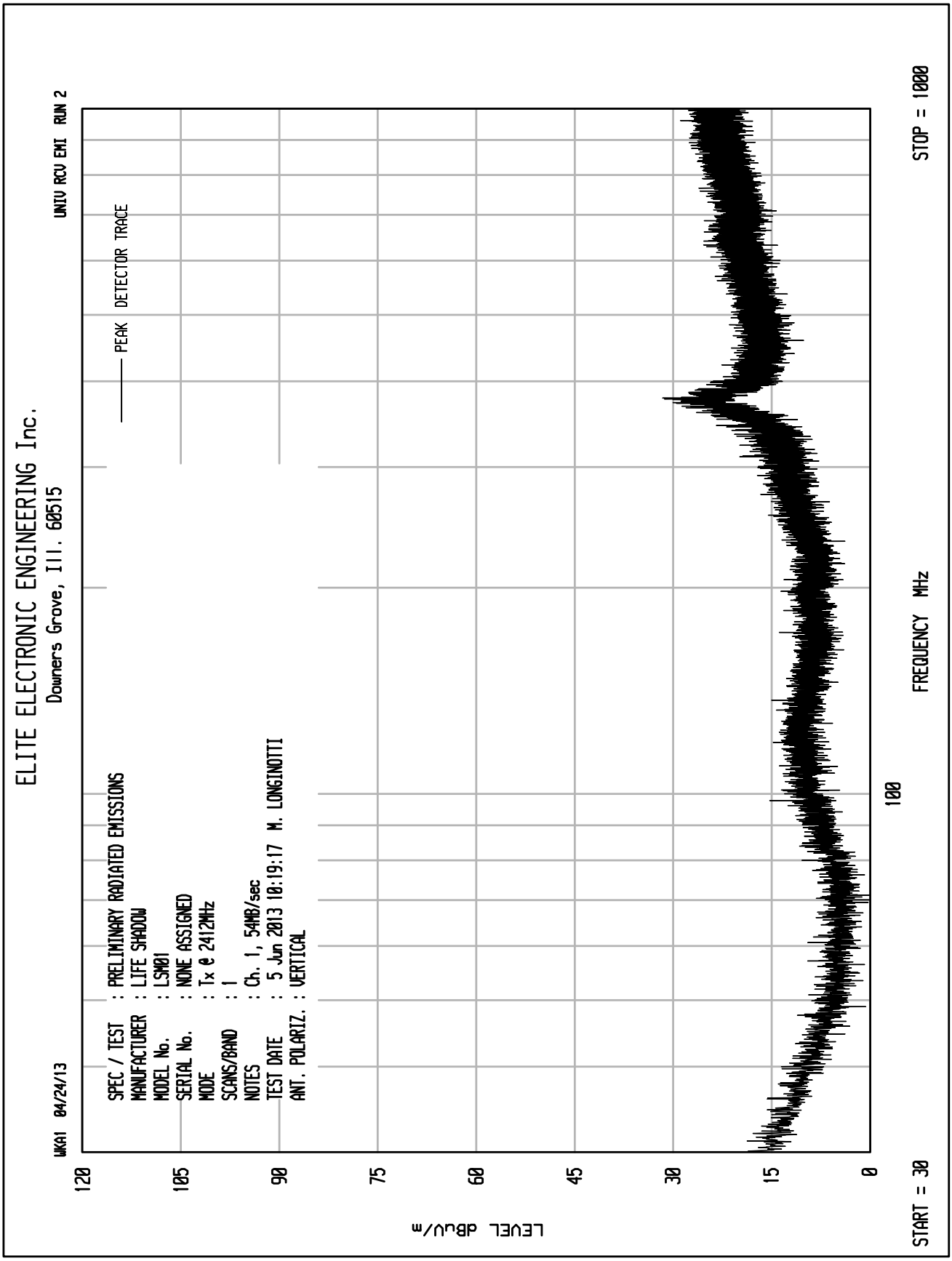
EIRP = Maximum Peak Conducted Output Power (dBm) + Maximum Transmit Antenna Gain (dBi)

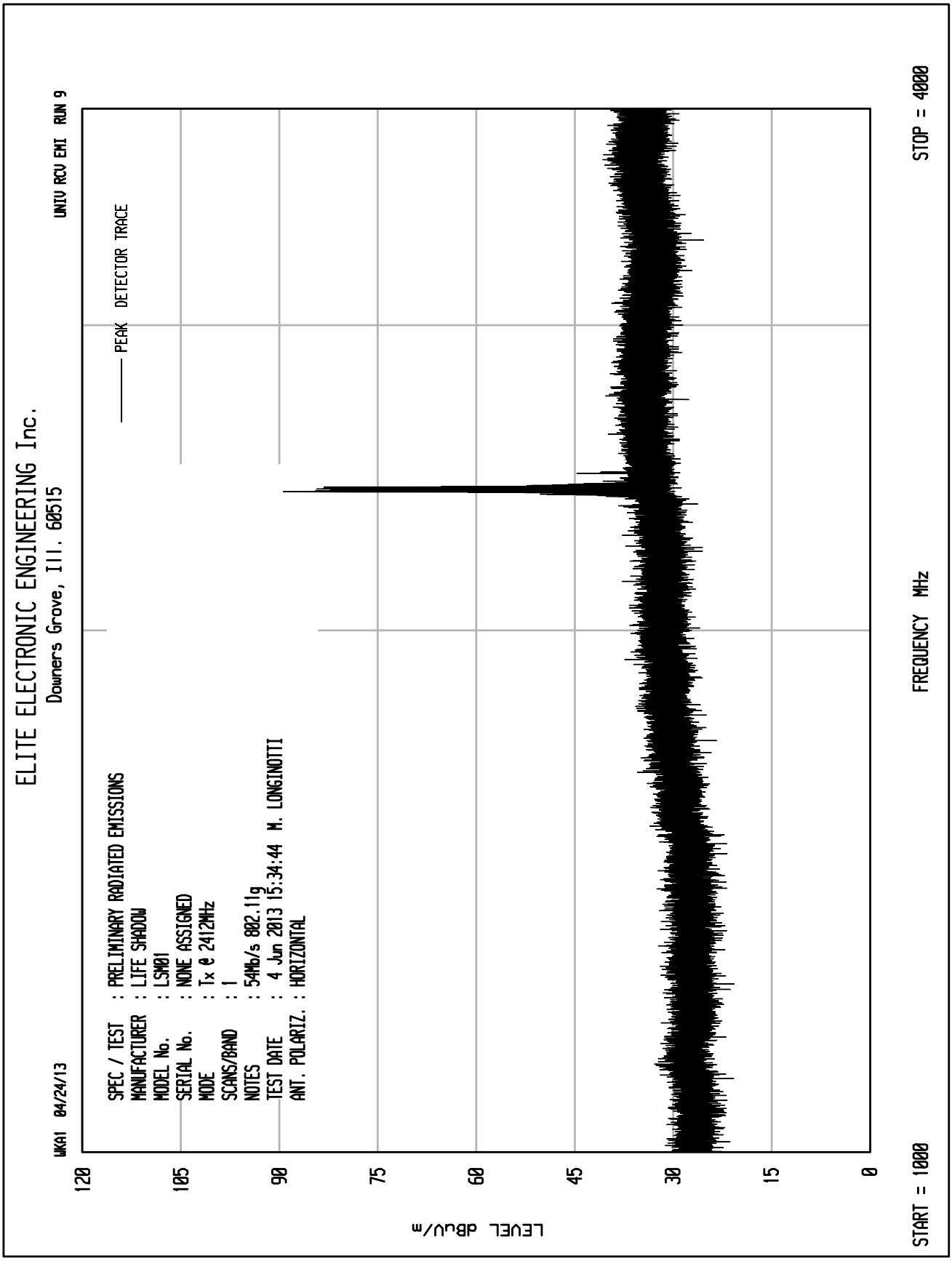
MANUFACTURER : Life Shadow LLC
MODEL NUMBER : LSM01
SERIAL NUMBER : None Assigned
TEST MODE : See Below
TEST DATE : June 3, 2013
TEST PARAMETERS : Effective Isotropic Radiated Power (EIRP)
NOTES : 802.11b, 11Mb/s
EQUIPMENT USED : RBB0, T2S3,T2S6

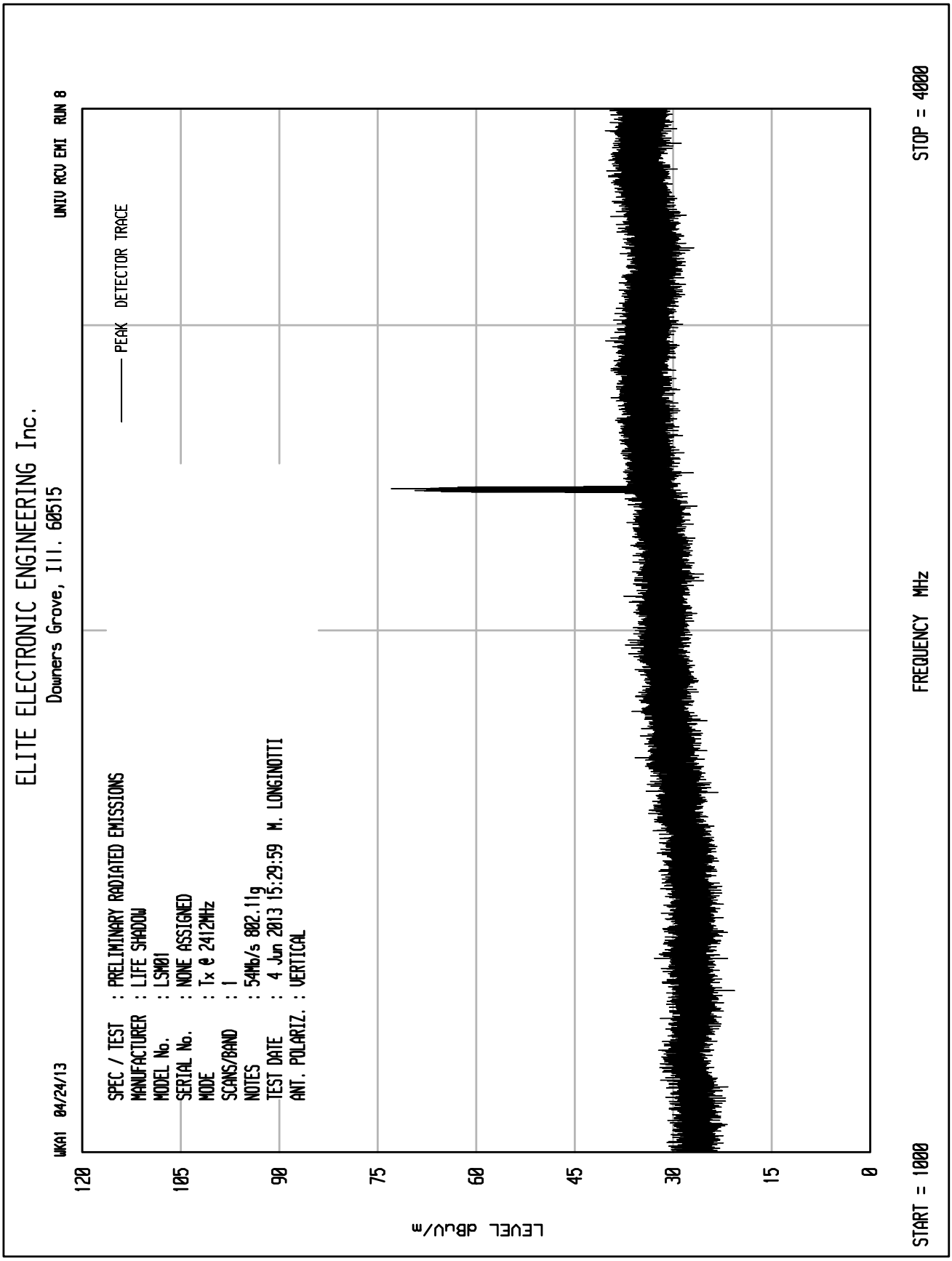
Transmit Frequency MHz	Maximum Peak Conducted Output Power dBm	Maximum Transmit Antenna Gain dBi	Maximum Effective Isotropic Radiated Power (EIRP)
2412	11.52	0.5	12.02
2437	11.84	0.5	12.34
2462	11.30	0.5	11.80

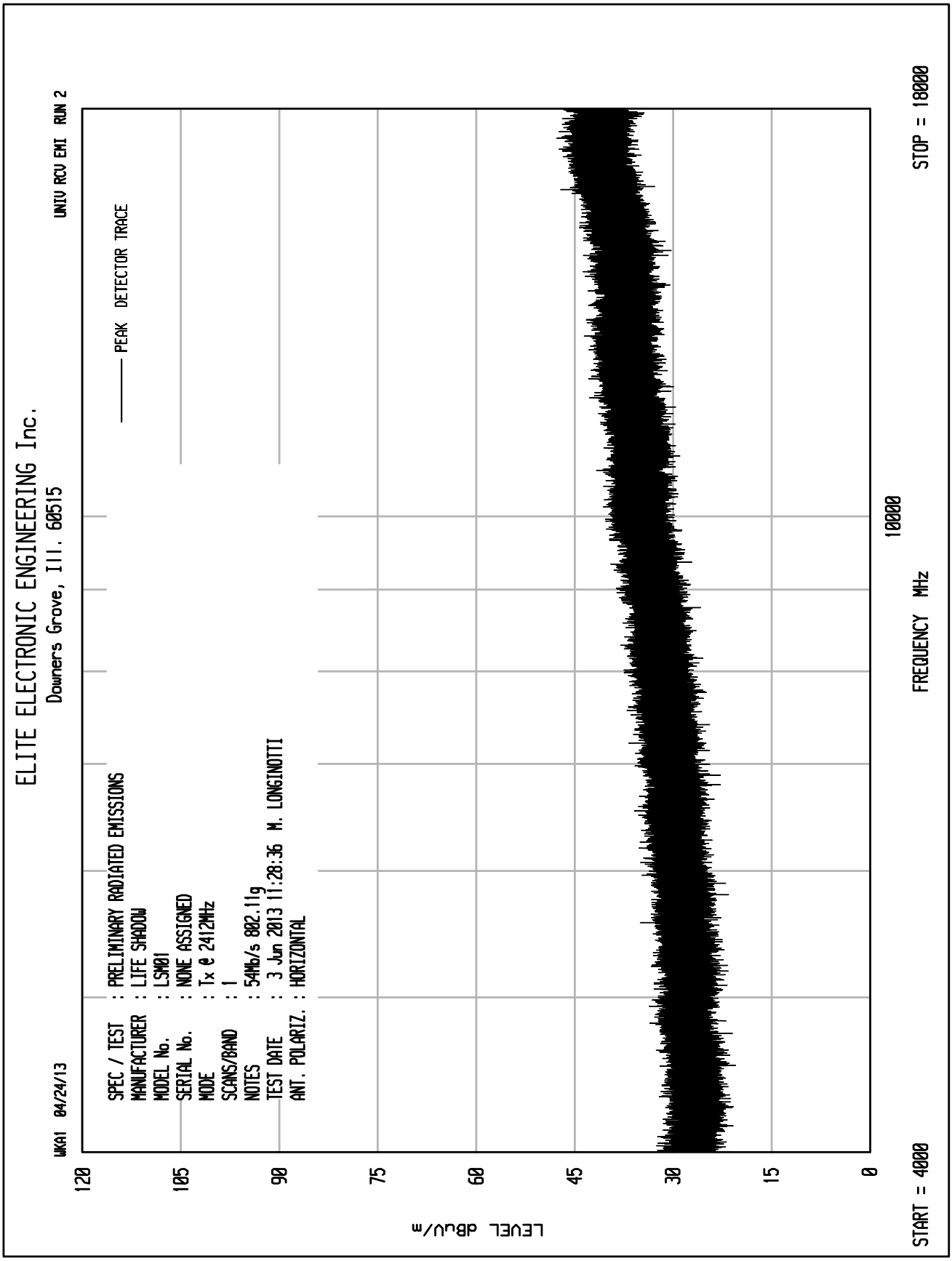
EIRP = Maximum Peak Conducted Output Power (dBm) + Maximum Transmit Antenna Gain (dBi)

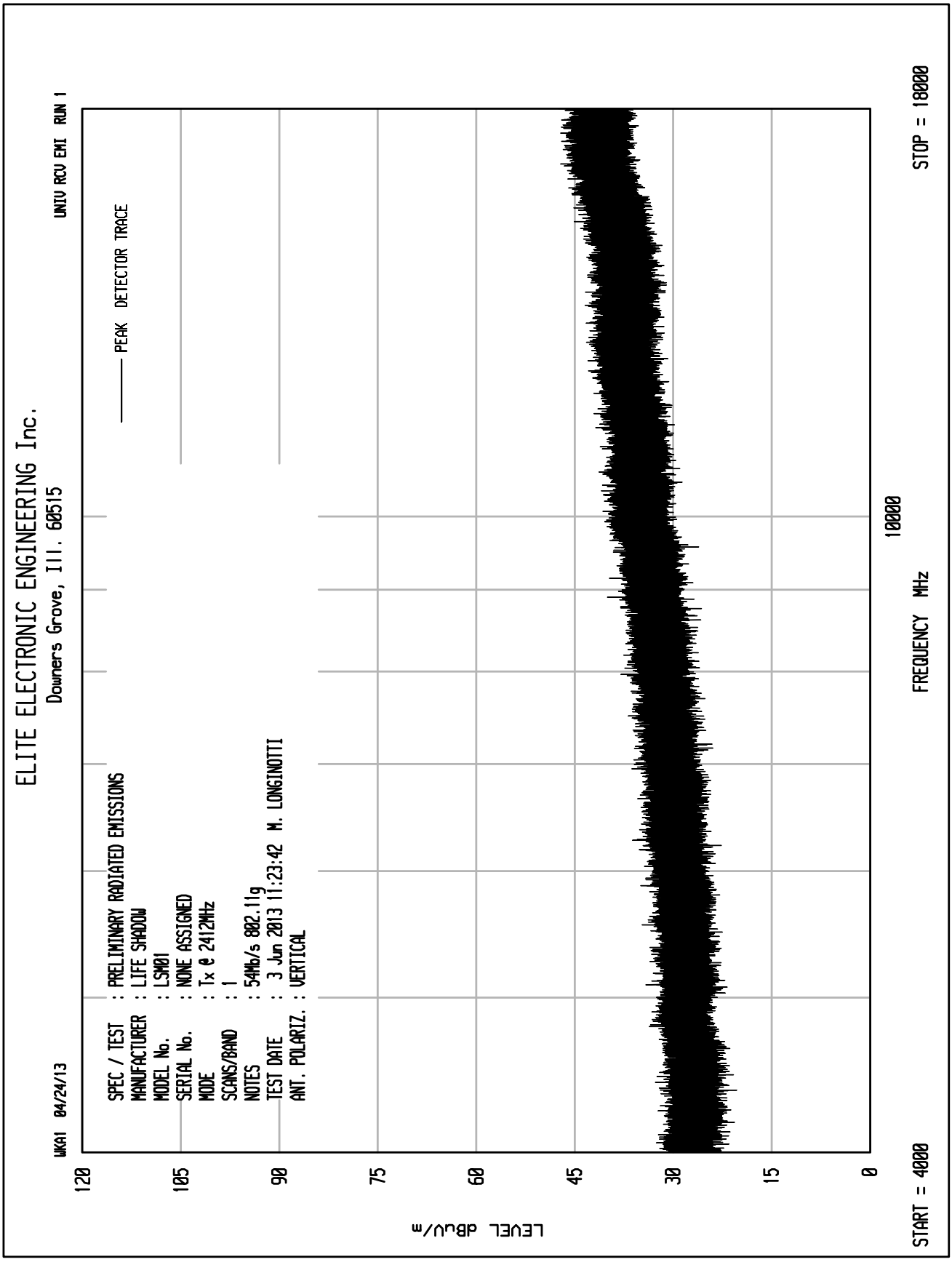

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 1
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2412MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/sec
TEST DATE : 5 Jun 2013 10:15:13 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 30
100
FREQUENCY MHz
STOP = 1000

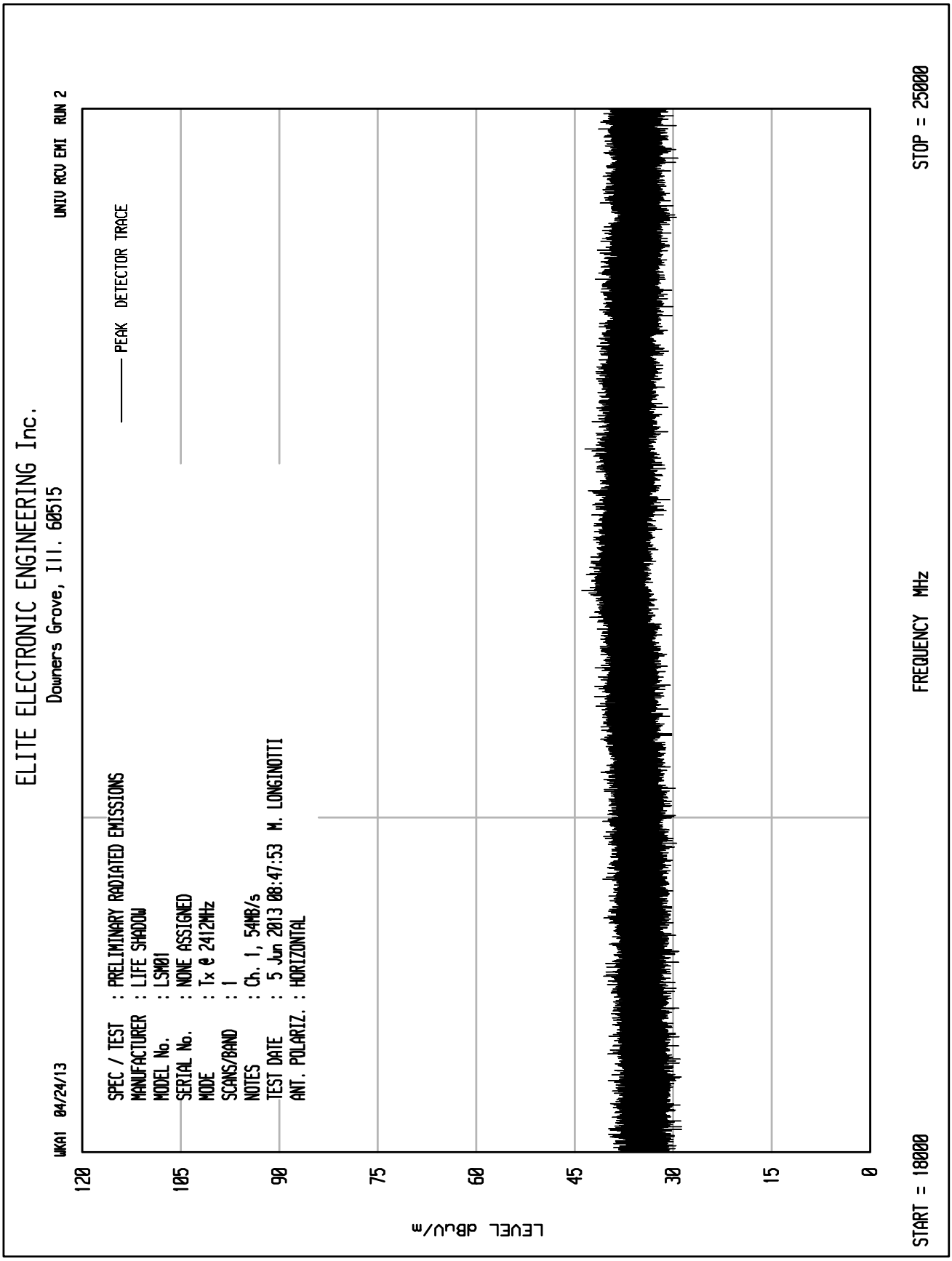

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 2
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2412MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/sec
TEST DATE : 5 Jun 2013 10:19:17 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 30
100
FREQUENCY MHz
STOP = 1000

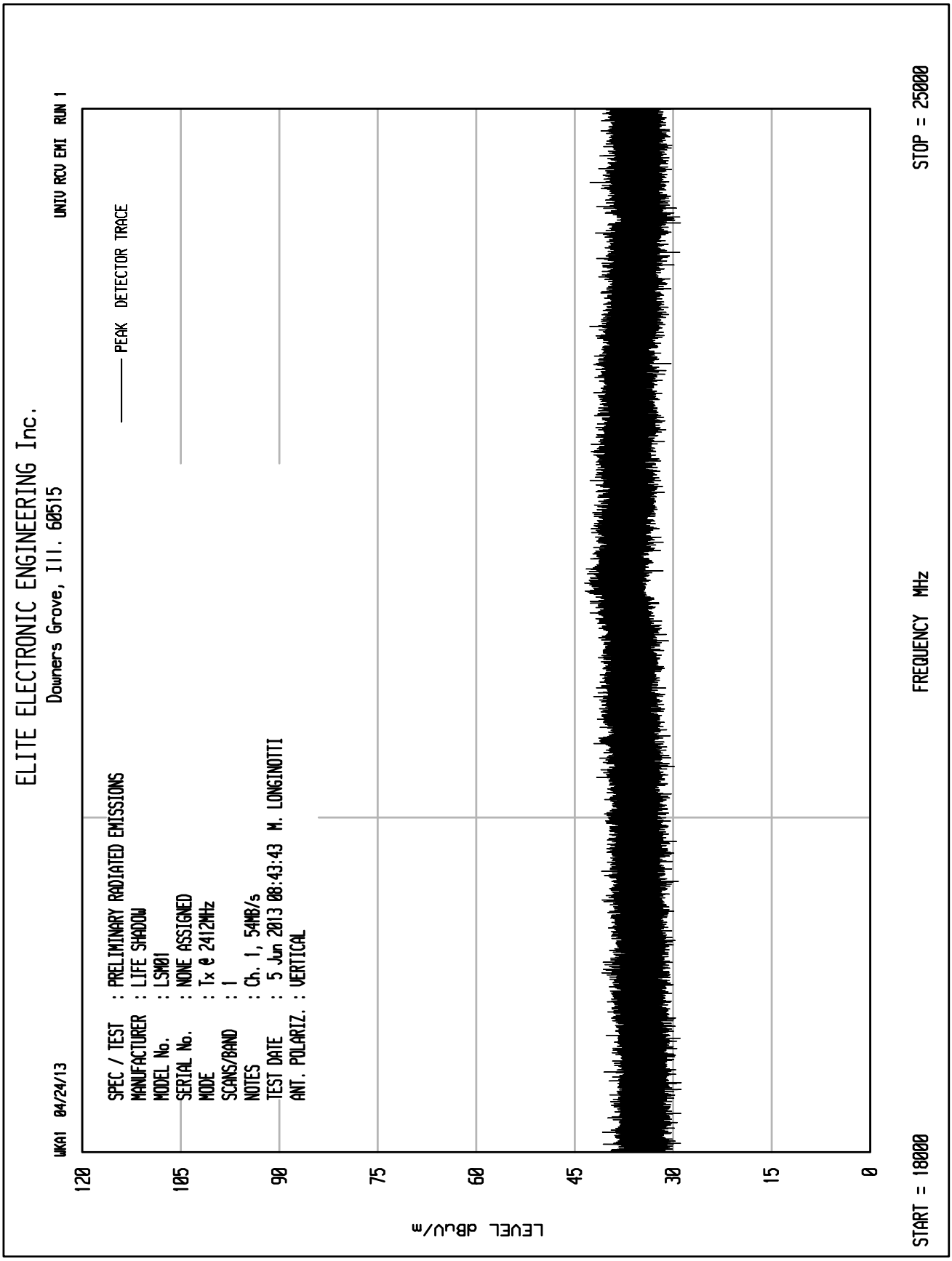

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 9
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2412MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 4 Jun 2013 15:34:44 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 4000

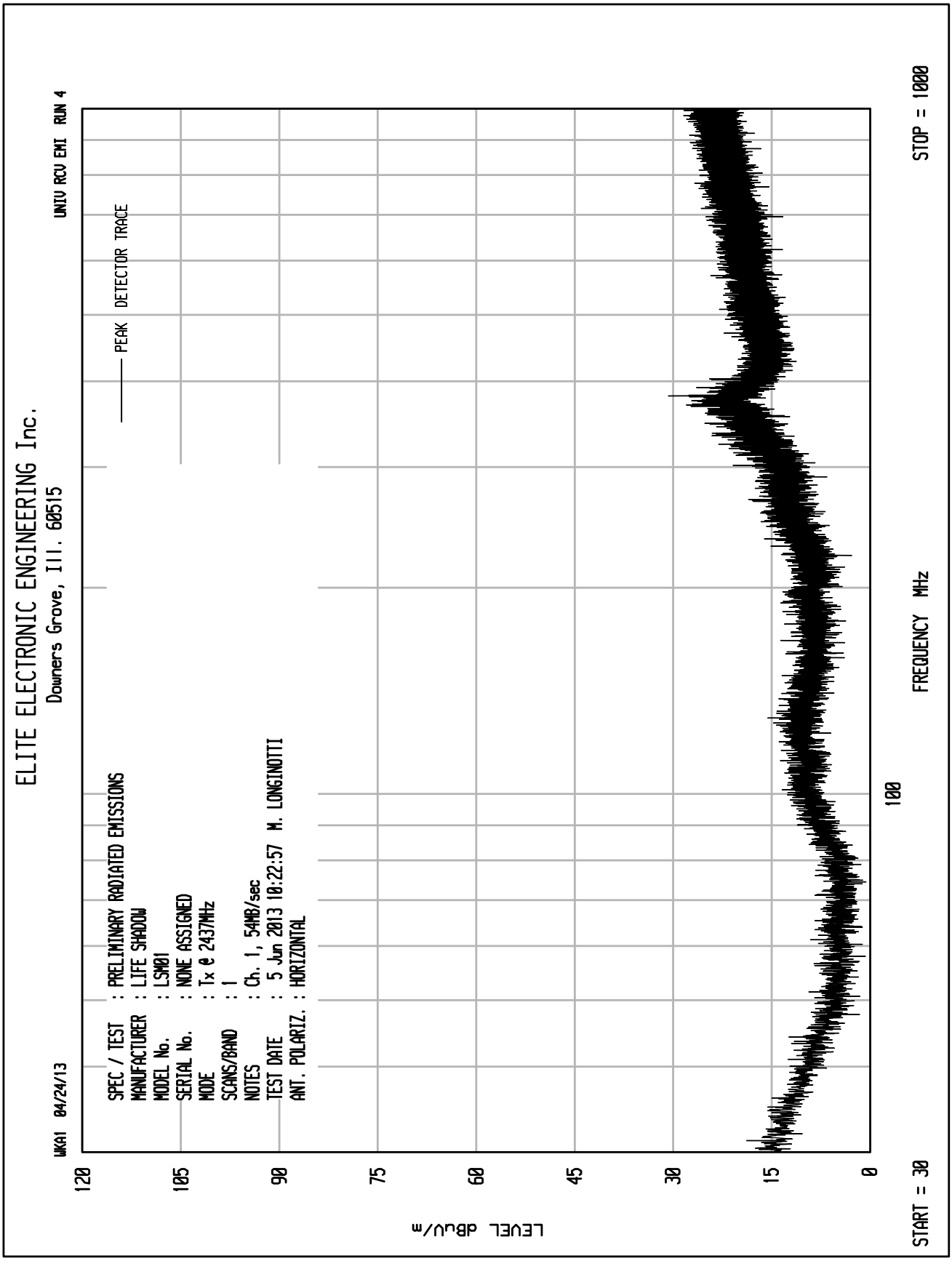

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 8
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2412MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 4 Jun 2013 15:29:59 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 4000

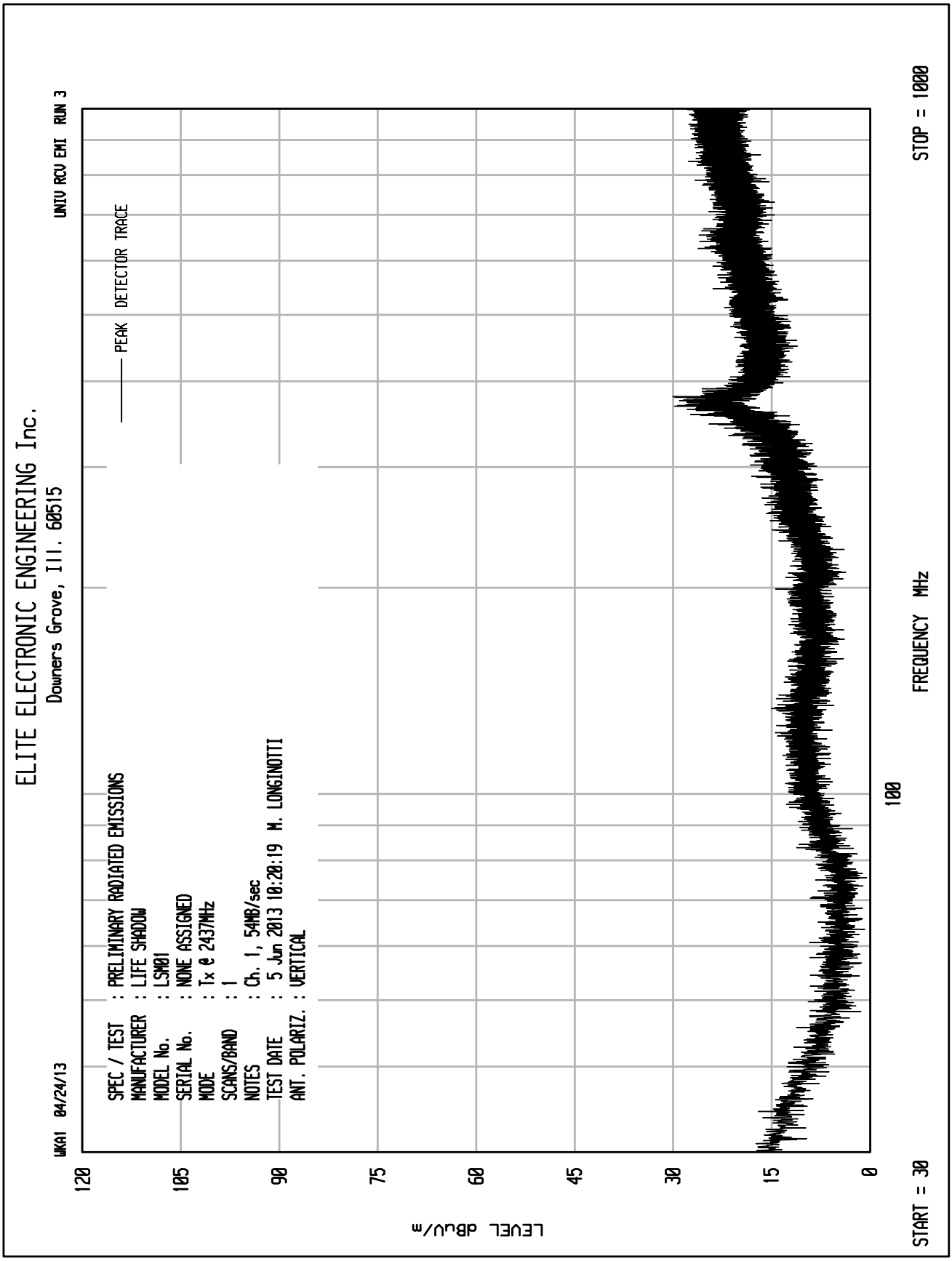

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 2
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2412MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 3 Jun 2013 11:28:36 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 4000
10000
FREQUENCY MHz
STOP = 18000

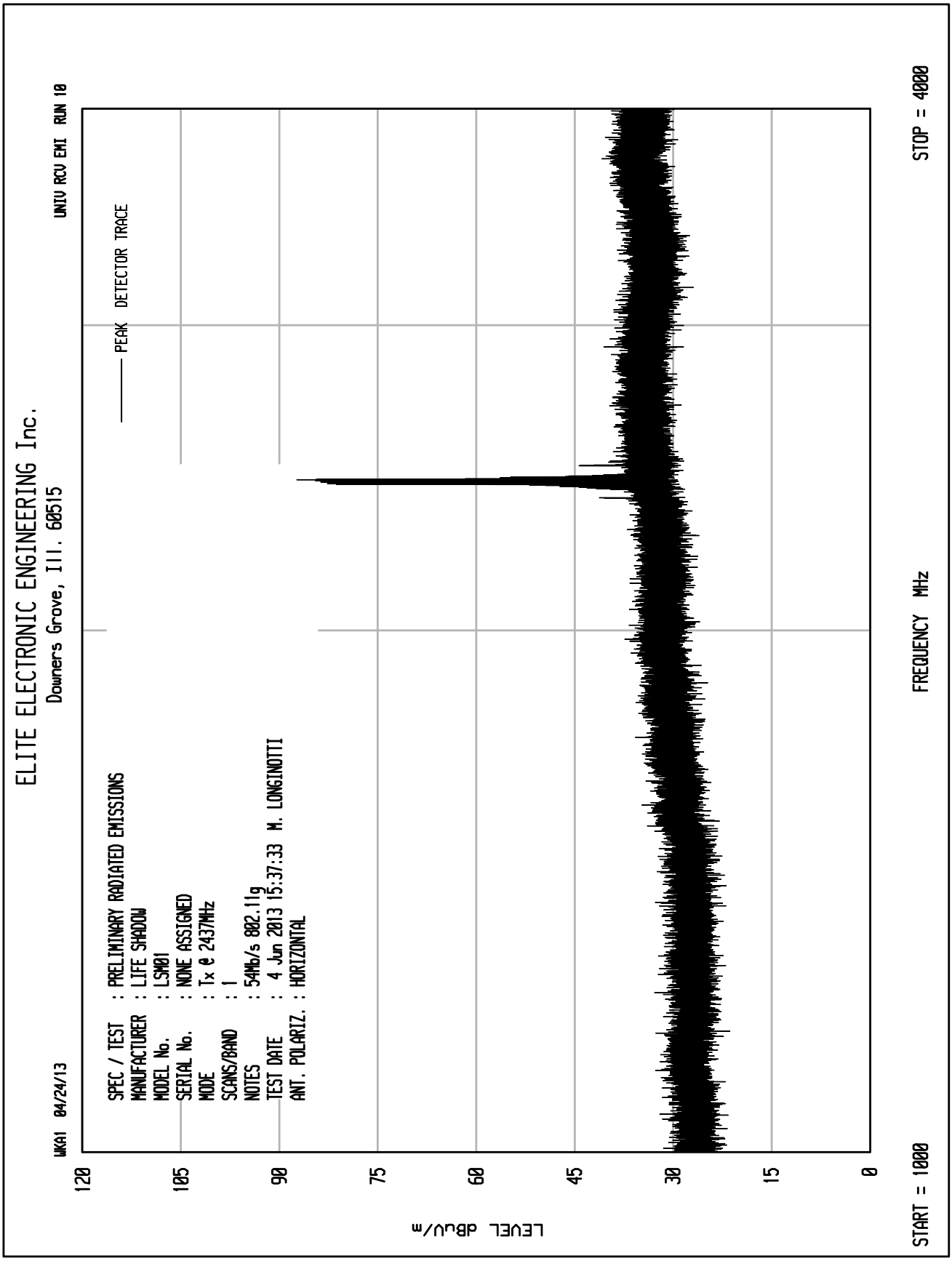

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 1
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2412MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 3 Jun 2013 11:23:42 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 4000
10000
FREQUENCY MHz
STOP = 18000

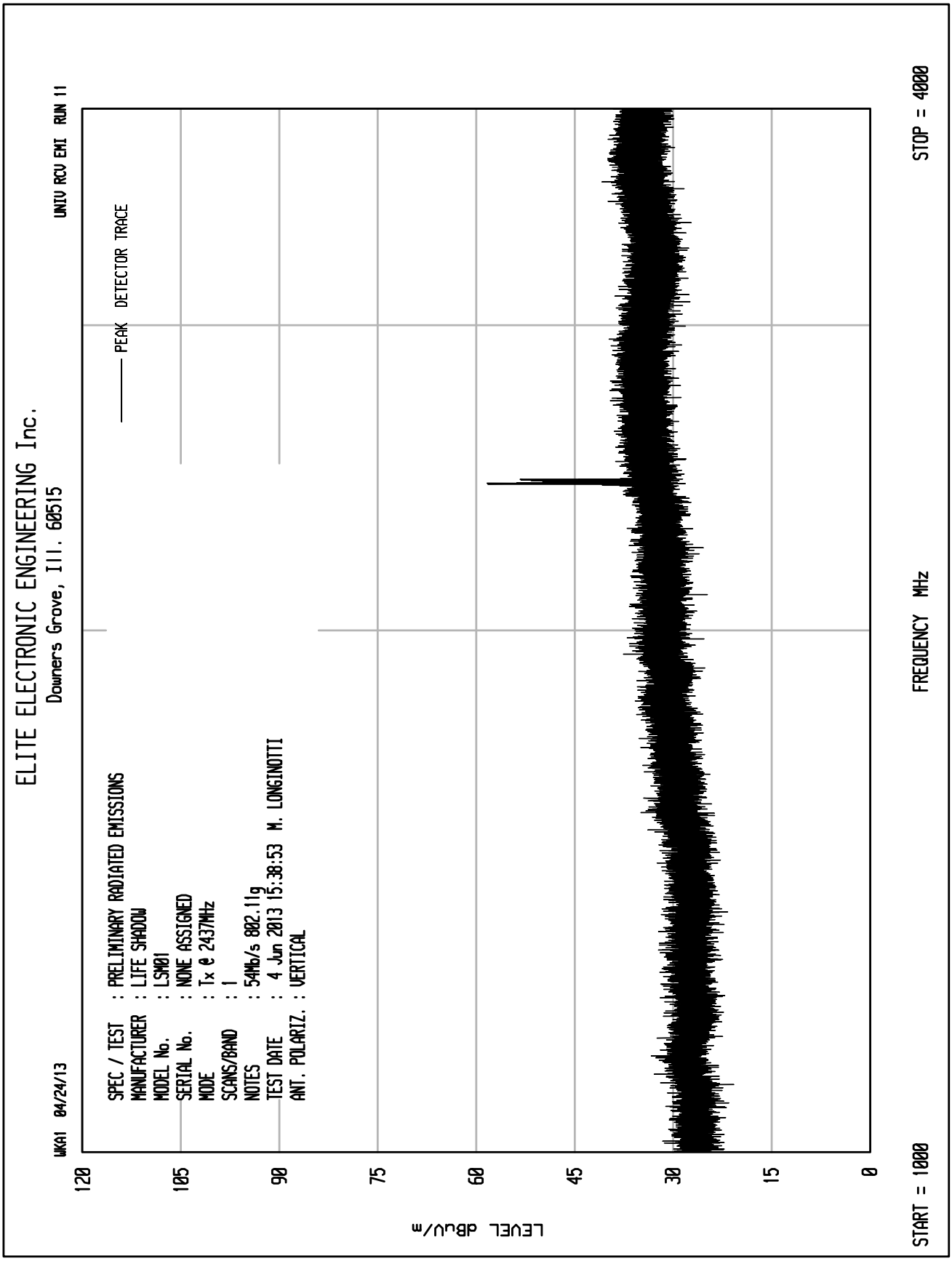

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 2
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2412MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/s
TEST DATE : 5 Jun 2013 08:47:53 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 25000

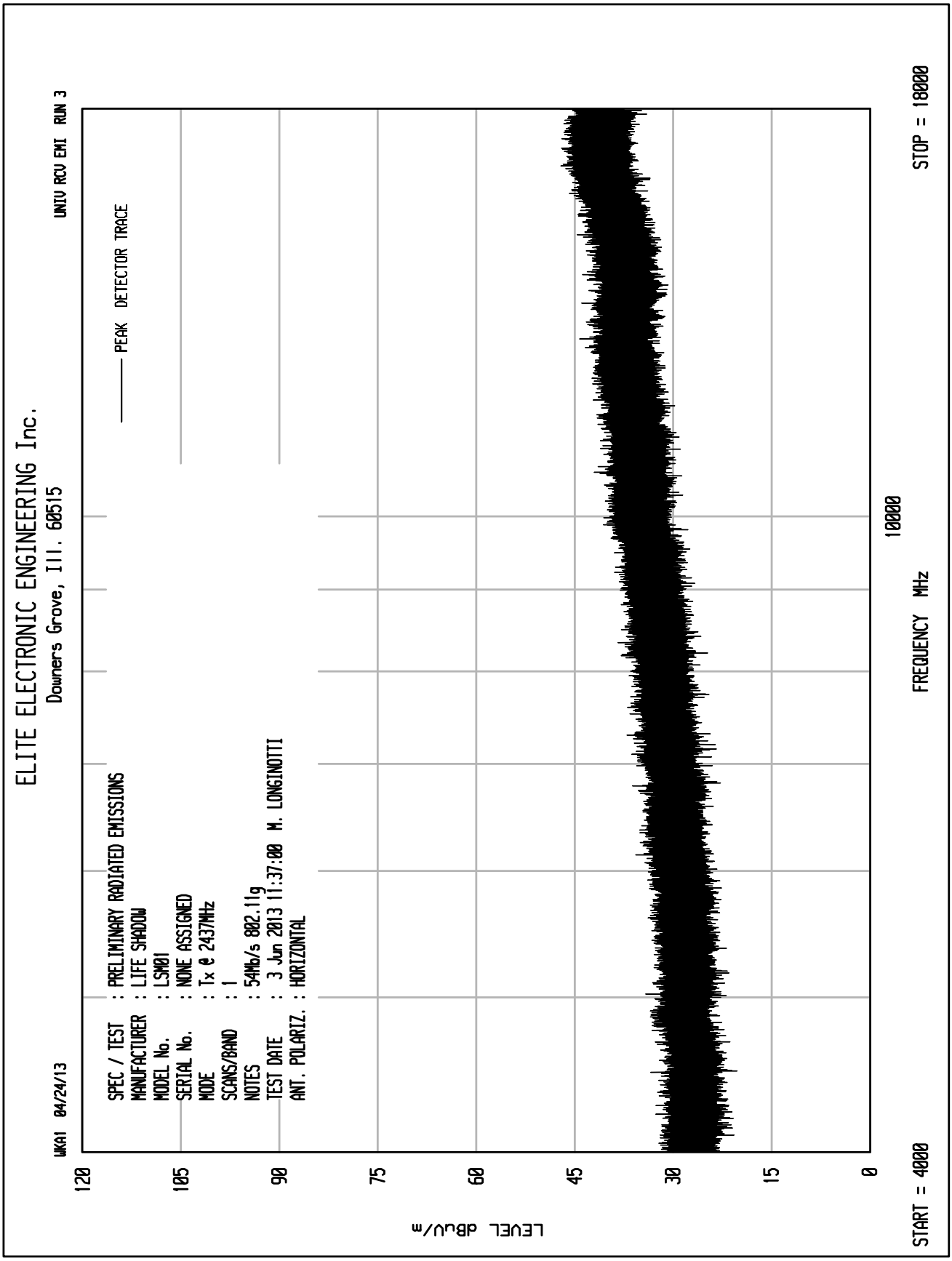

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 1
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2412MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/s
TEST DATE : 5 Jun 2013 08:43:43 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 25000

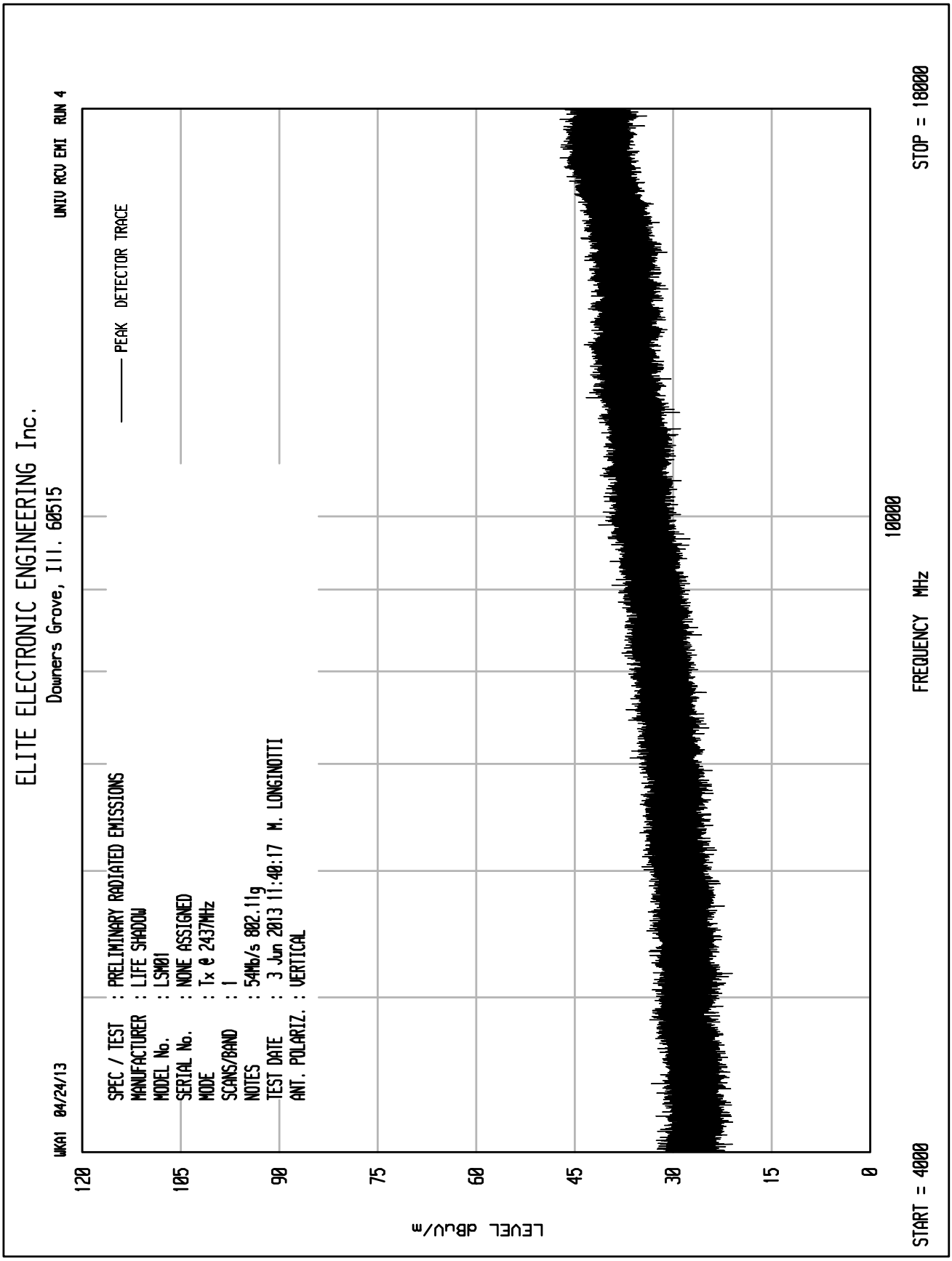

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 4
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/sec
TEST DATE : 5 Jun 2013 10:22:57 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 30
100
FREQUENCY MHz
STOP = 1000

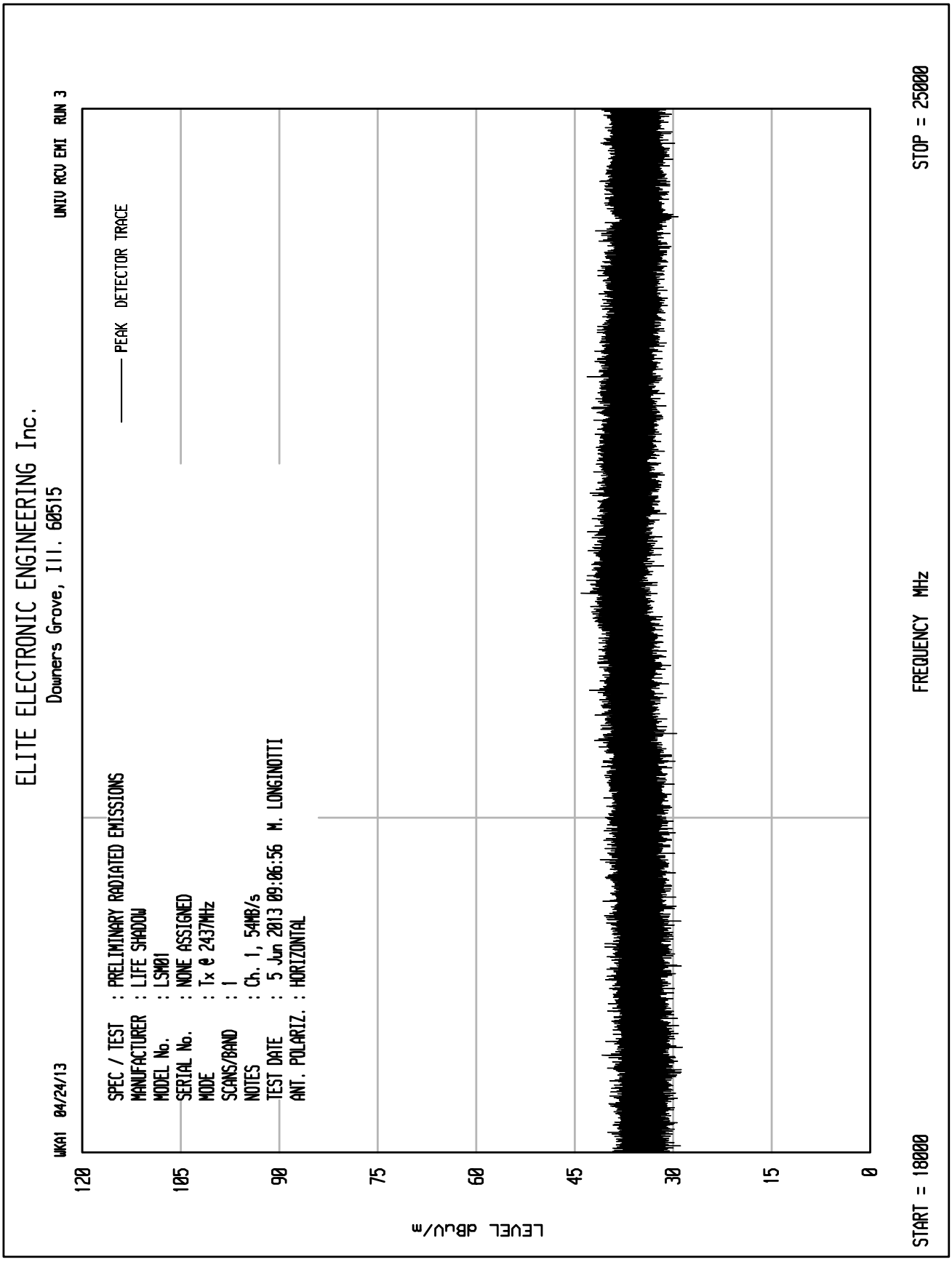

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 3
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/sec
TEST DATE : 5 Jun 2013 10:20:19 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 30
100
FREQUENCY MHz
STOP = 1000

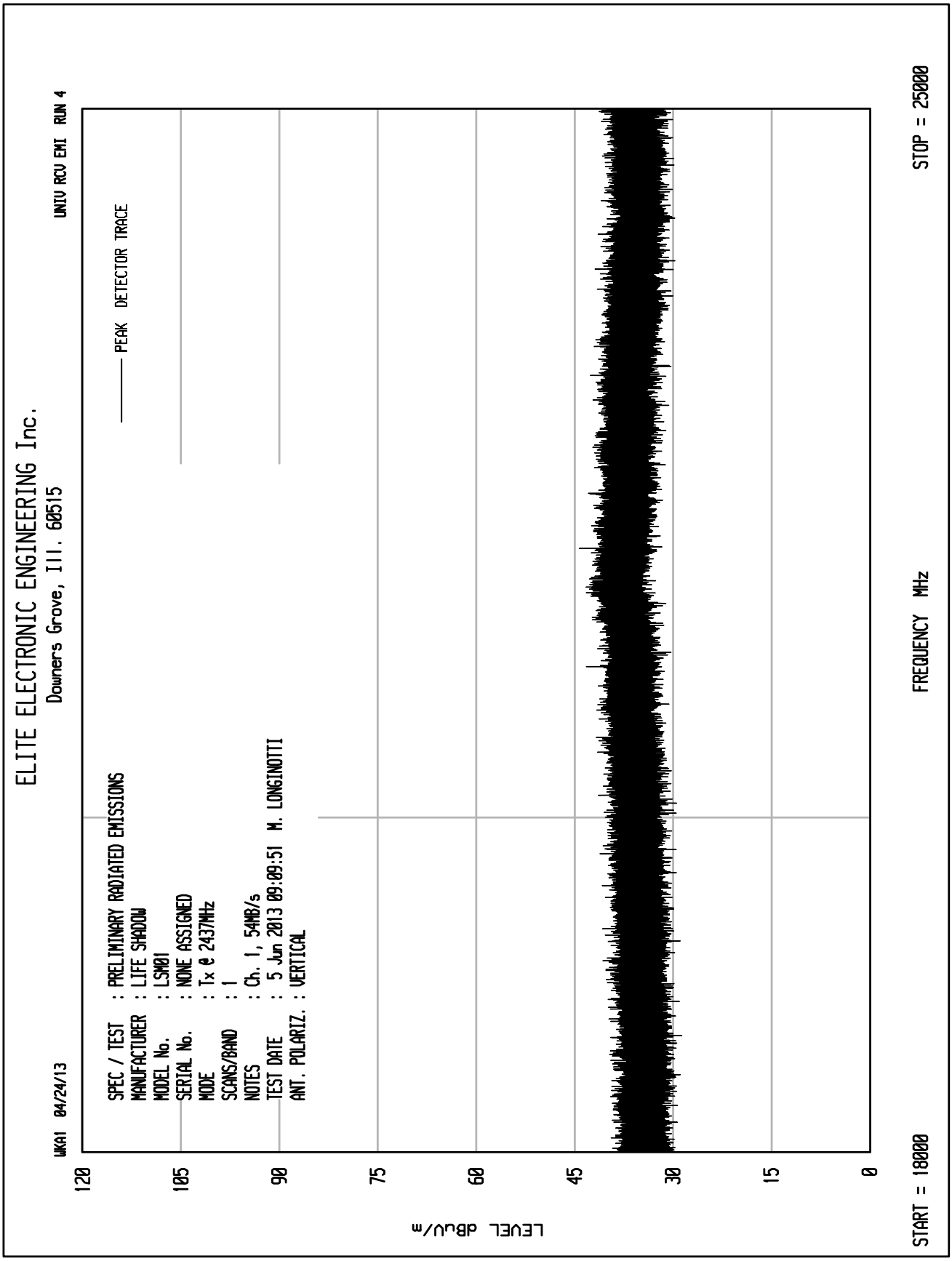

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 10
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 4 Jun 2013 15:37:33 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 4000

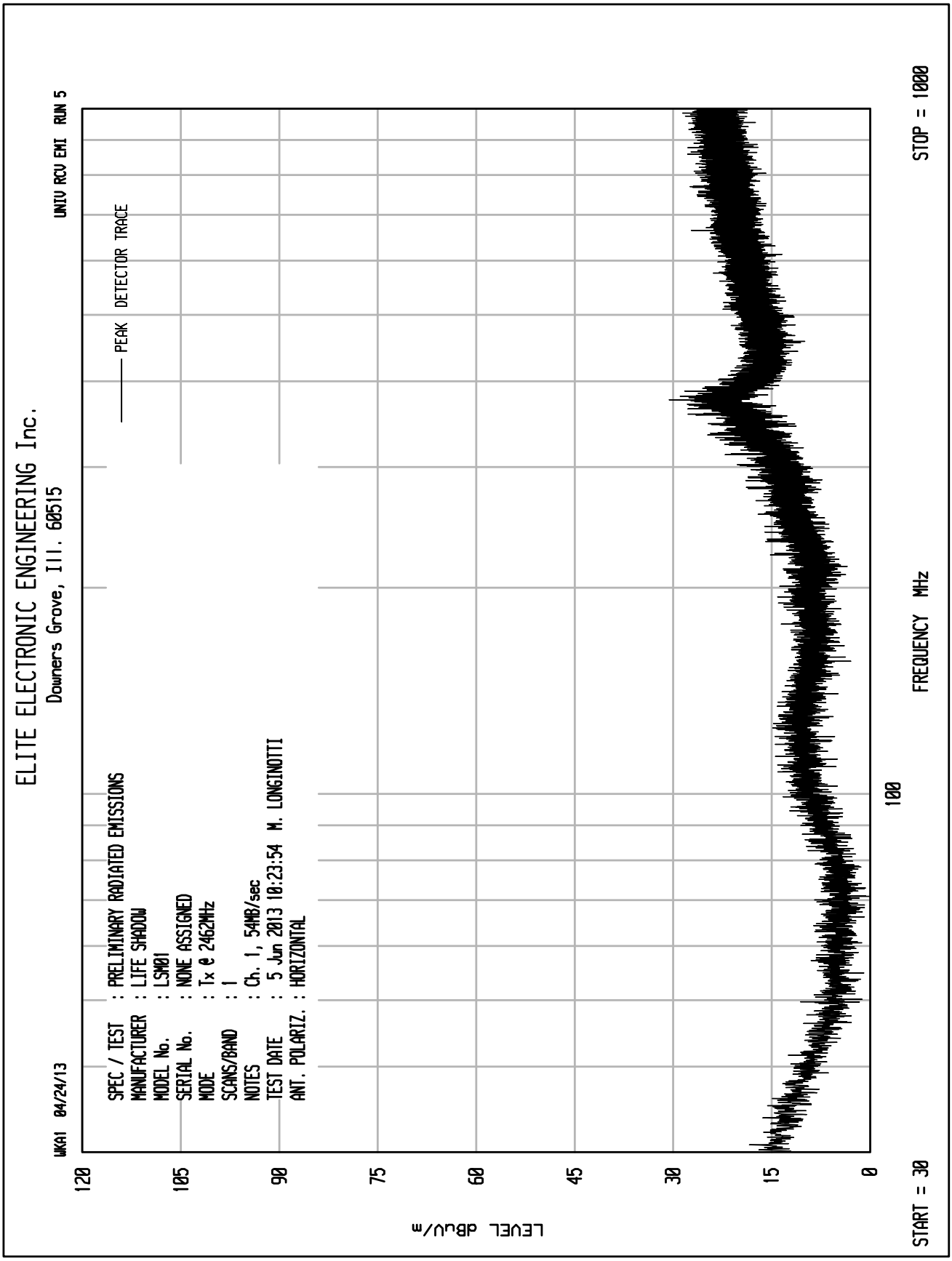

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 11
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 4 Jun 2013 15:38:53 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 4000

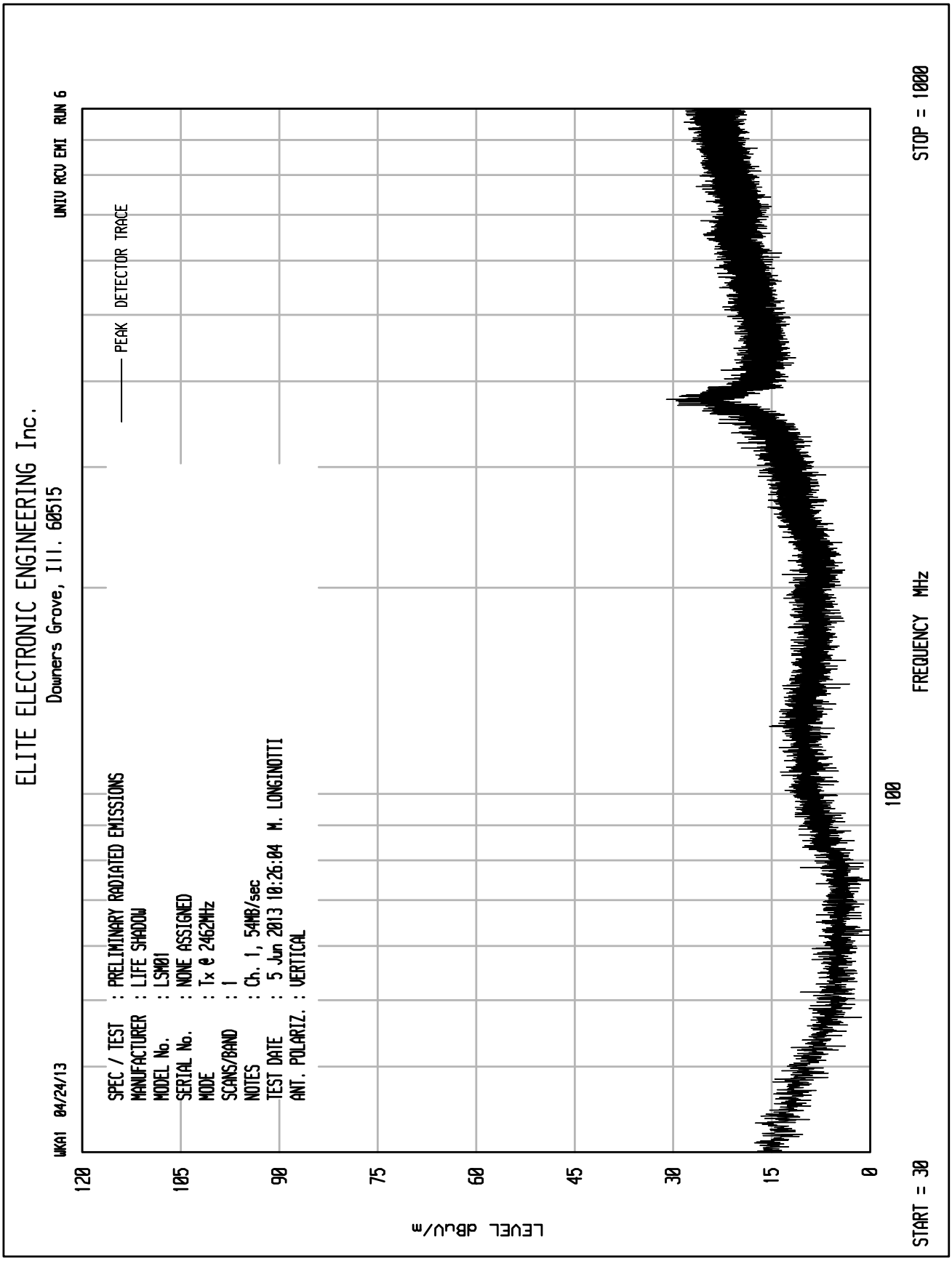

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 3
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 3 Jun 2013 11:37:00 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 4000
10000
FREQUENCY MHz
STOP = 18000

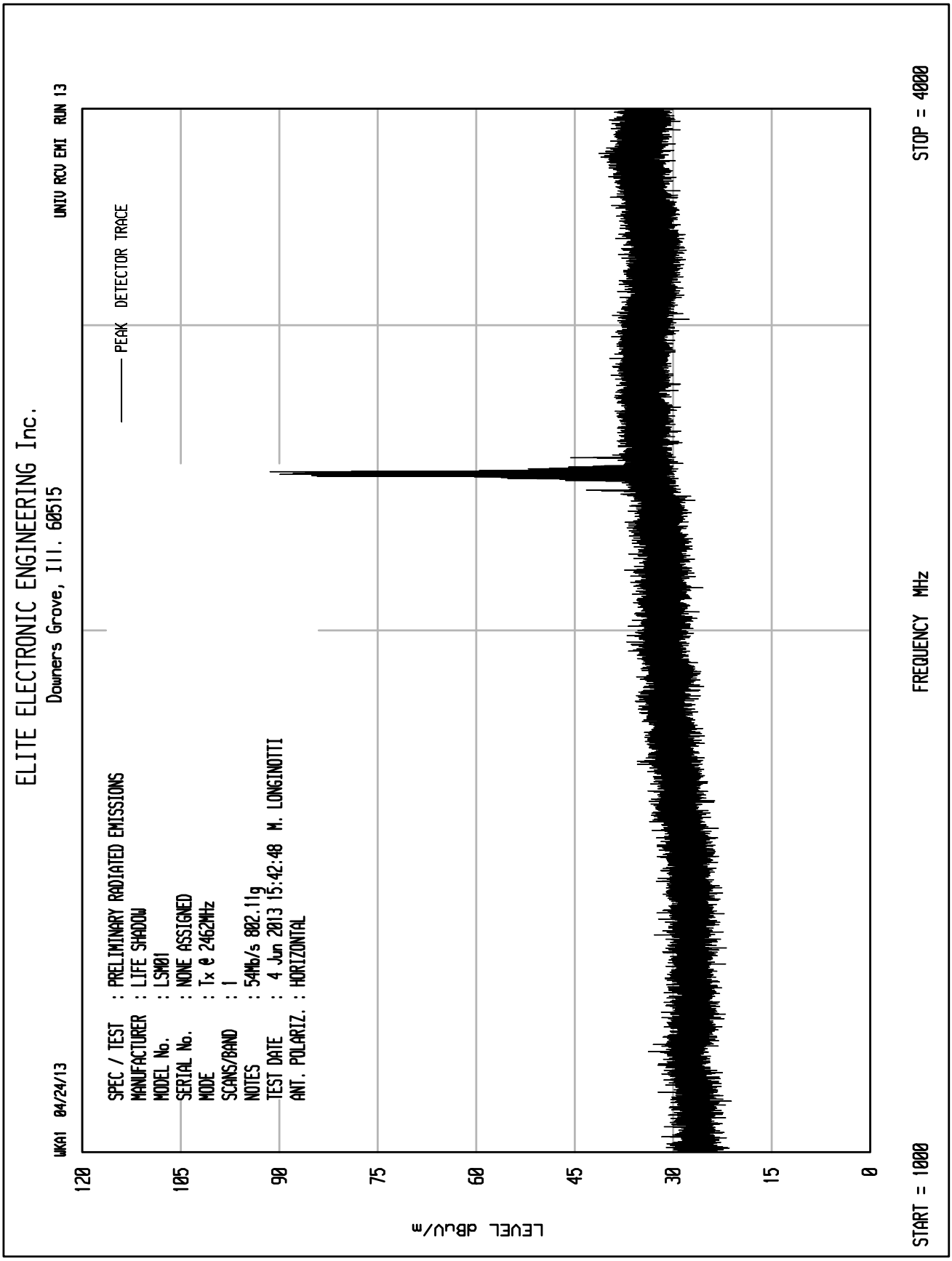

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 4
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 3 Jun 2013 11:40:17 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 4000
10000
FREQUENCY MHz
STOP = 18000

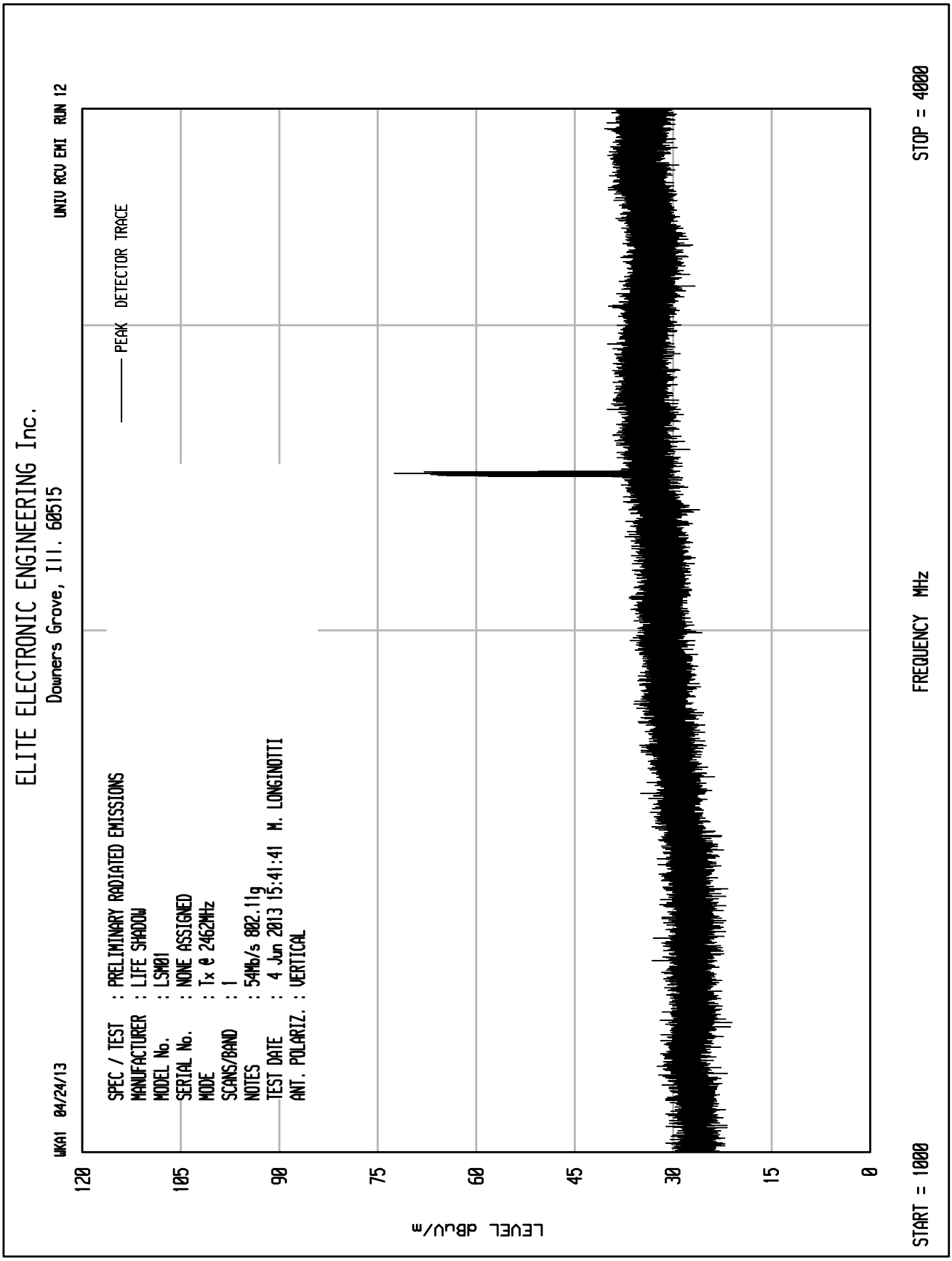

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 3
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/s
TEST DATE : 5 Jun 2013 09:06:56 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 25000

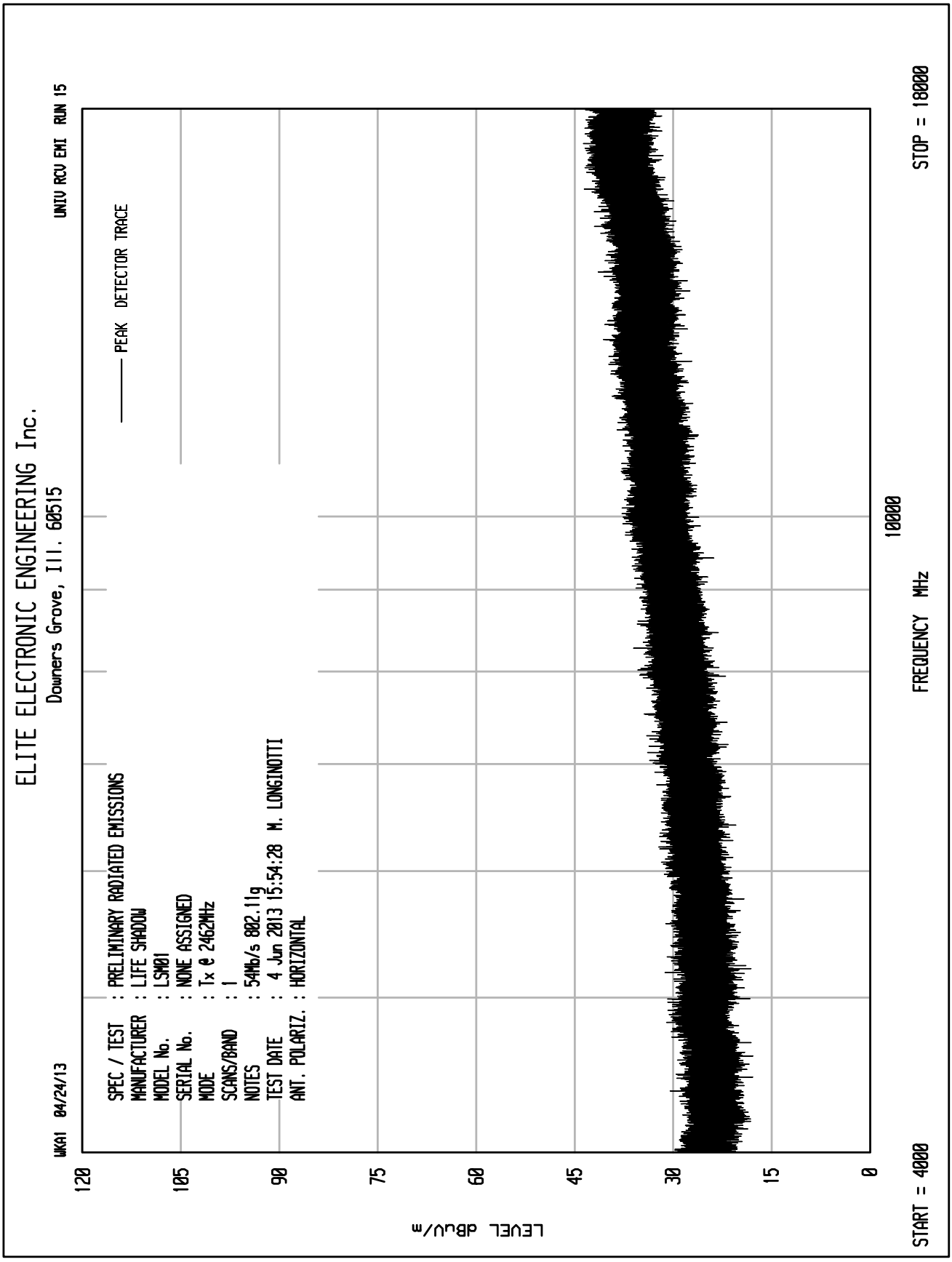

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 4
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2437MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/s
TEST DATE : 5 Jun 2013 09:09:51 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 25000

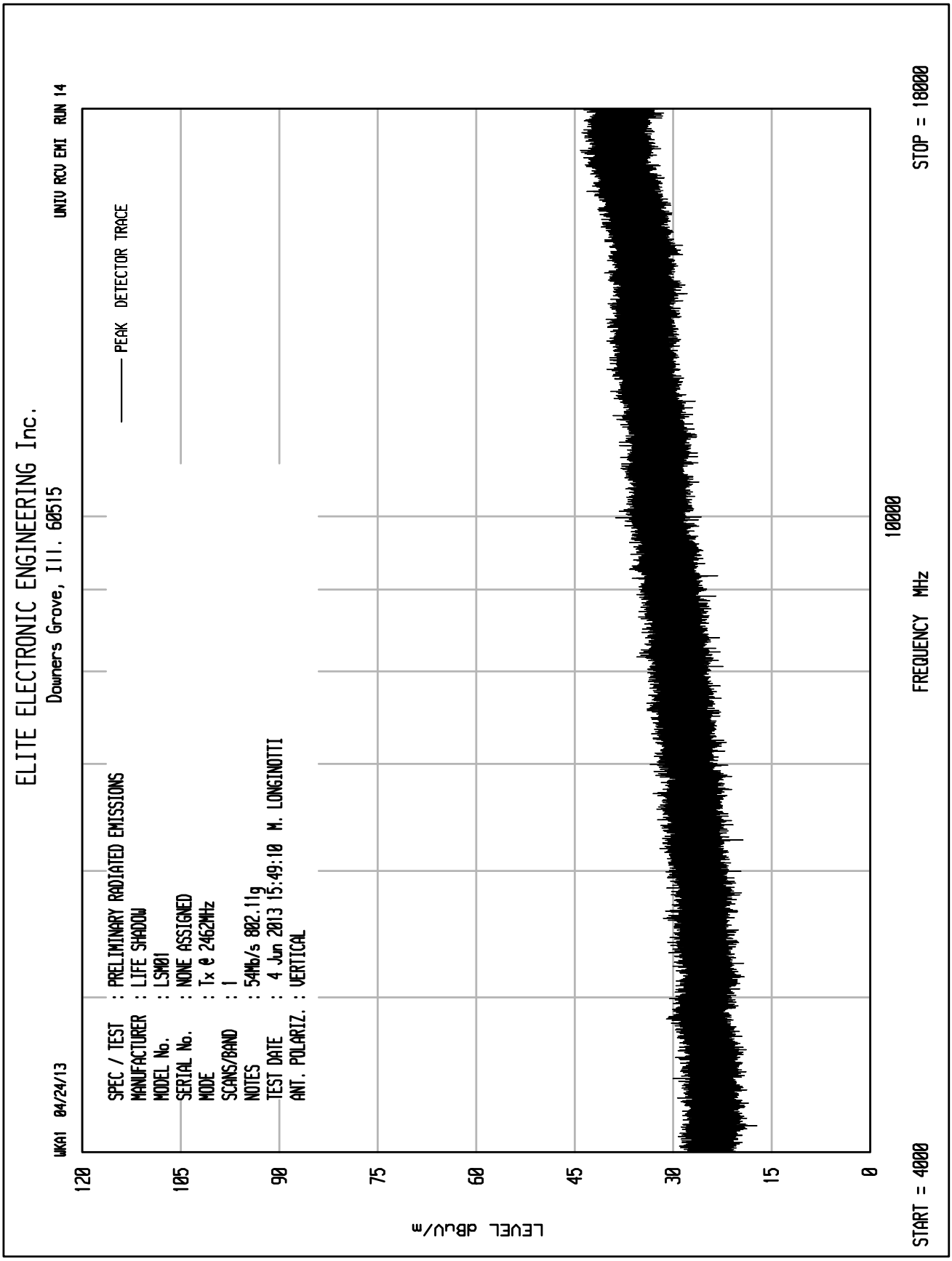

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 5
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/sec
TEST DATE : 5 Jun 2013 10:23:54 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 30
100
FREQUENCY MHz
STOP = 1000

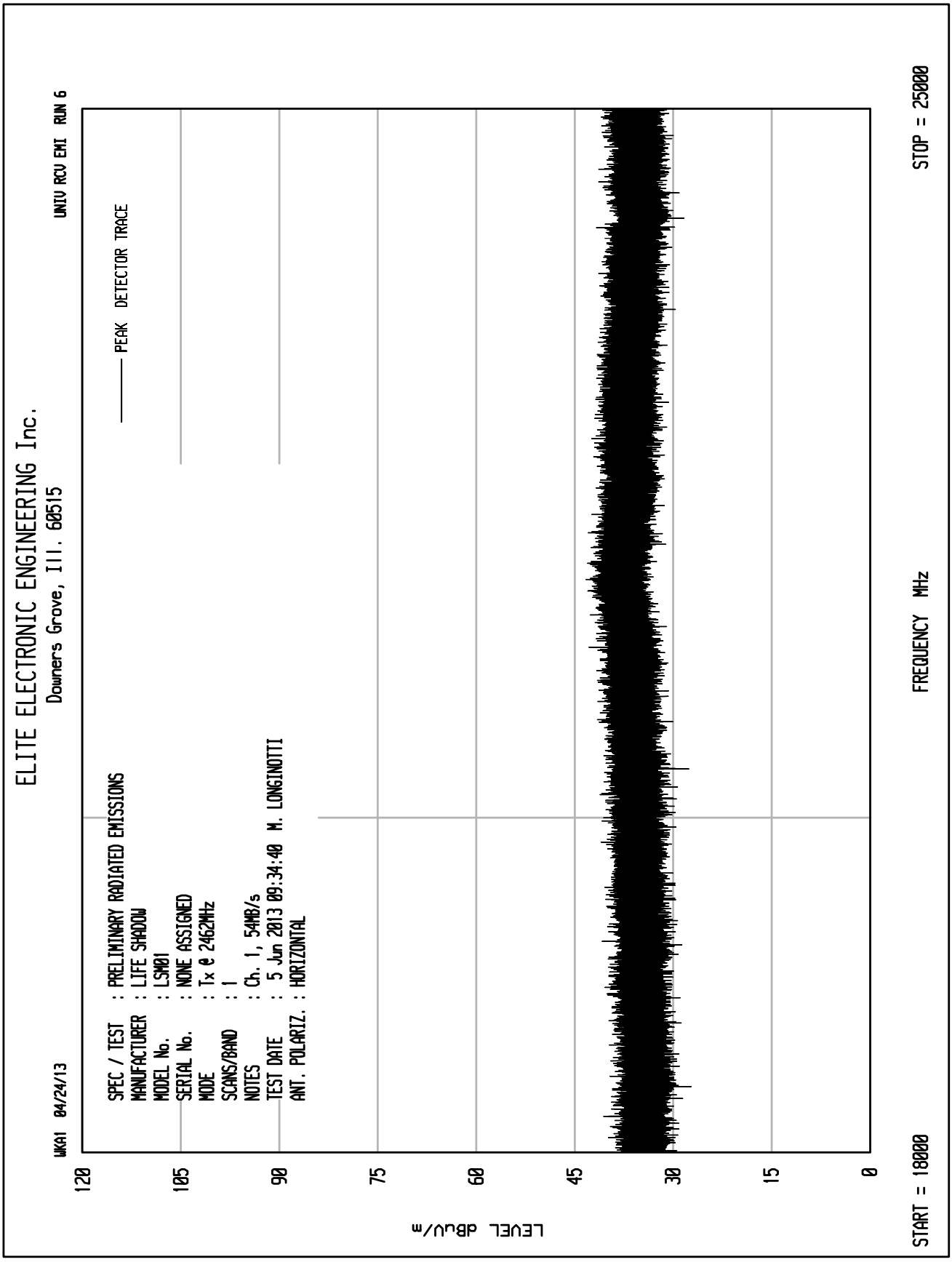

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 6
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/sec
TEST DATE : 5 Jun 2013 10:26:04 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 30
100
FREQUENCY MHz
STOP = 1000

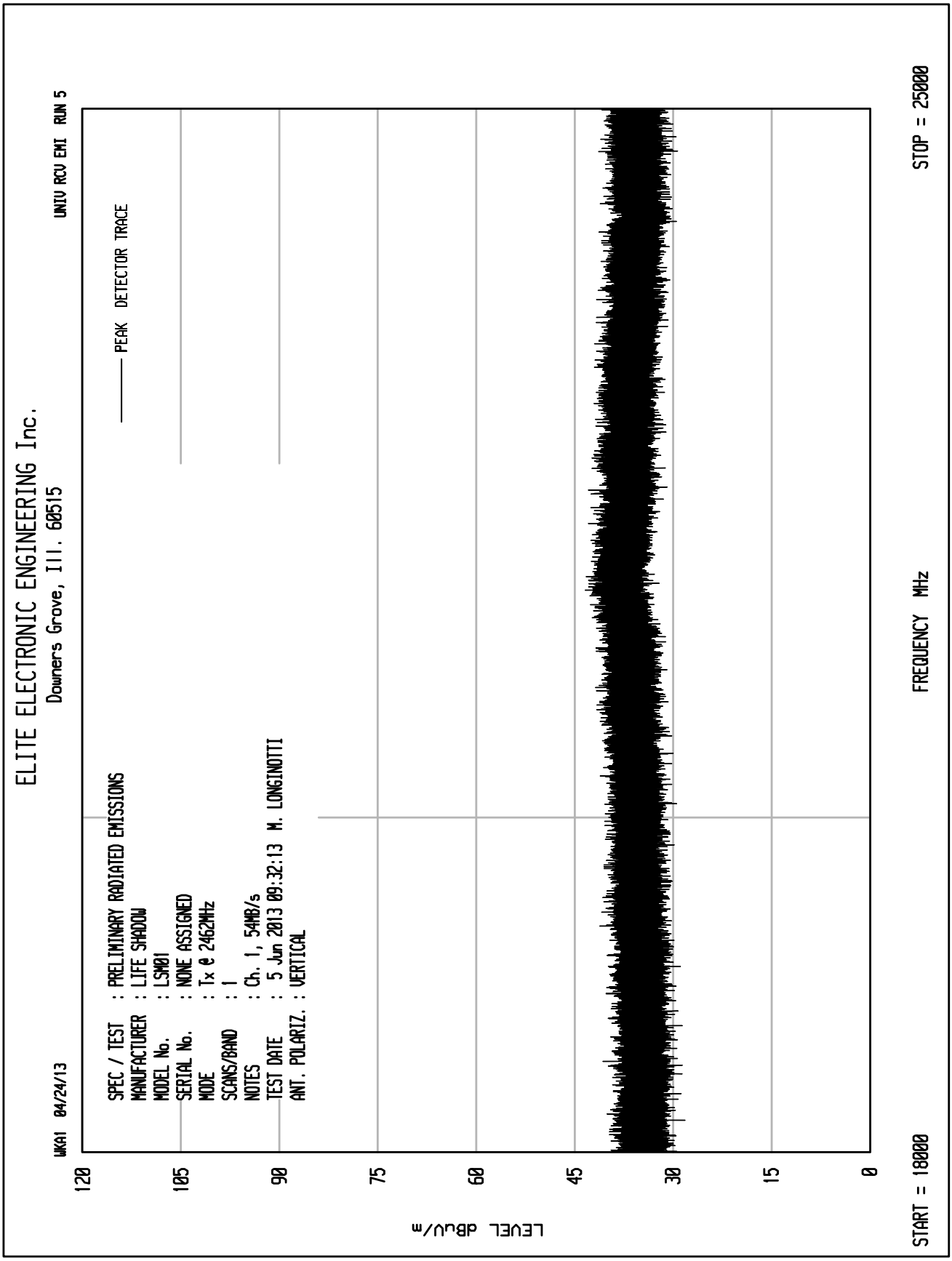

ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 13
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 4 Jun 2013 15:42:48 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 4000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 12
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 4 Jun 2013 15:41:41 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 1000
FREQUENCY MHz
STOP = 4000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 15
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 4 Jun 2013 15:54:28 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 4000
10000
FREQUENCY MHz
STOP = 18000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 14
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : 54Mb/s 802.11g
TEST DATE : 4 Jun 2013 15:49:10 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 4000
10000
FREQUENCY MHz
STOP = 18000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 6
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/s
TEST DATE : 5 Jun 2013 09:34:40 M. LONGINOTTI
ANT. POLARIZ. : HORIZONTAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 25000


ELITE ELECTRONIC ENGINEERING Inc.
Downers Grove, Ill. 60515
UNIV RCV EMI RUN 5
WKA1 04/24/13
SPEC / TEST : PRELIMINARY RADIATED EMISSIONS
MANUFACTURER : LIFE SHADOW
MODEL No. : LSM01
SERIAL No. : NONE ASSIGNED
MODE : Tx @ 2462MHz
SCANS/BAND : 1
NOTES : Ch. 1, 54MB/s
TEST DATE : 5 Jun 2013 09:32:13 M. LONGINOTTI
ANT. POLARIZ. : VERTICAL
PEAK DETECTOR TRACE
LEVEL dBuV/m
120
105
90
75
60
45
30
15
0
START = 18000
FREQUENCY MHz
STOP = 25000

MANUFACTURER : Life Shadow LLC
MODEL NO. : LSM01
TEST SPECIFICATION : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions
DATE : June 3, 2013 through June 5, 2013
MODE : Transmit @ 2412MHz, 802.11g 54MB/s
TEST DISTANCE : 3 meters
TEST EQUIPMENT : RBB0, NTA2,NWQ2,NHG0,APW3,APW0,X0B0,XPR0,CMA1
NOTES : Peak Detector
: Total = Meter Reading + Cable Fac + Antenna Factor + Preamp Gain

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
2412.00	H	60.1		3.4	32.2	0.0	95.8	61343.5		
2412.00	V	52.5		3.4	32.2	0.0	88.2	25572.2		
4824.00	H	47.6	Ambient	4.8	34.4	-40.1	46.7	216.8	5000.0	-27.3
4824.00	V	47.6	Ambient	4.8	34.4	-40.1	46.7	216.8	5000.0	-27.3
7236.00	H	35.8	Ambient	6.1	35.4	-39.8	37.6	75.9	6134.3	-38.1
7236.00	V	36.2	Ambient	6.1	35.4	-39.8	38.0	79.5	6134.3	-37.7
9648.00	H	36.1	Ambient	6.8	36.8	-38.8	41.0	111.8	6134.3	-34.8
9648.00	V	36.6	Ambient	6.8	36.8	-38.8	41.5	118.4	6134.3	-34.3
12060.00	H	47.0	Ambient	8.0	39.0	-39.6	54.4	524.3	5000.0	-19.6
12060.00	V	46.5	Ambient	8.0	39.0	-39.6	53.9	494.9	5000.0	-20.1
14472.00	H	46.6	Ambient	8.7	39.5	-39.9	54.9	558.2	5000.0	-19.0
14472.00	V	46.5	Ambient	8.7	39.5	-39.9	54.8	551.8	5000.0	-19.1
16884.00	H	36.9	Ambient	9.4	40.9	-38.7	48.5	266.4	6134.3	-27.2
16884.00	V	37.2	Ambient	9.4	40.9	-38.7	48.8	275.7	6134.3	-26.9
19296.00	H	35.4	Ambient	3.3	40.4	-27.4	51.7	384.5	5000.0	-22.3
19296.00	V	35.5	Ambient	3.3	40.4	-27.4	51.8	388.9	5000.0	-22.2
21708.00	H	26.2	Ambient	3.4	40.6	-26.4	43.8	154.1	6134.3	-32.0
21708.00	V	26.0	Ambient	3.4	40.6	-26.4	43.6	150.5	6134.3	-32.2
24120.00	H	25.4	Ambient	3.4	40.6	-27.4	42.0	125.2	6134.3	-33.8
24120.00	V	25.5	Ambient	3.4	40.6	-27.4	42.1	126.7	6134.3	-33.7

MANUFACTURER : Life Shadow LLC
MODEL NO. : LSM01
TEST SPECIFICATION : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions
DATE : June 3, 2013 through June 5, 2013
MODE : Transmit @ 2412MHz, 802.11g 54MB/s
TEST DISTANCE : 3 meters
TEST EQUIPMENT : RBB0, NTA2,NWQ2,NHG0,APW3,APW0,X0B0,XPR0,CMA1
NOTES : Average Readings in Restricted Bands
: Total = Meter Reading + Cable Fac + Antenna Factor + Preamp Gain

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4824.00	H	34.0	Ambient	4.8	34.4	-40.1	0.0	33.1	45.3	500.0	-20.9
4824.00	V	34.0	Ambient	4.8	34.4	-40.1	0.0	33.1	45.3	500.0	-20.9
12060.00	H	34.0	Ambient	8.0	39.0	-39.6	0.0	41.4	117.4	500.0	-12.6
12060.00	V	34.0	Ambient	8.0	39.0	-39.6	0.0	41.4	117.4	500.0	-12.6
14472.00	H	34.1	Ambient	8.7	39.5	-39.9	0.0	42.4	132.4	500.0	-11.5
14472.00	V	34.0	Ambient	8.7	39.5	-39.9	0.0	42.3	130.9	500.0	-11.6
19296.00	H	22.8	Ambient	3.3	40.4	-27.4	0.0	39.1	90.1	500.0	-14.9
19296.00	V	22.8	Ambient	3.3	40.4	-27.4	0.0	39.1	90.1	500.0	-14.9

MANUFACTURER : Life Shadow LLC
MODEL NO. : LSM01
TEST SPECIFICATION : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions
DATE : June 3, 2013 through June 5, 2013
MODE : Transmit @ 2437MHz, 802.11g 54MB/s
TEST DISTANCE : 3 meters
TEST EQUIPMENT : RBB0, NTA2,NWQ2,NHG0,APW3,APW0,X0B0,XPR0,CMA1
NOTES : Peak Detector
: Total = Meter Reading + Cable Fac + Antenna Factor + Preamp Gain

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
2437.00	H	60.0		3.5	32.3	0.0	95.7	61152.5		
2437.00	V	56.7		3.5	32.3	0.0	92.4	41822.9		
4874.00	H	47.7	Ambient	4.9	34.4	-40.1	46.9	220.4	5000.0	-27.1
4874.00	V	46.3	Ambient	4.9	34.4	-40.1	45.5	187.6	5000.0	-28.5
7311.00	H	49.4	Ambient	6.2	35.4	-39.8	51.2	363.9	5000.0	-22.8
7311.00	V	47.8	Ambient	6.2	35.4	-39.8	49.6	302.7	5000.0	-24.4
9748.00	H	37.9	Ambient	6.9	36.9	-38.7	43.0	141.3	6115.2	-32.7
9748.00	V	37.6	Ambient	6.9	36.9	-38.7	42.7	136.5	6115.2	-33.0
12185.00	H	47.7	Ambient	8.0	39.0	-39.5	55.2	575.7	5000.0	-18.8
12185.00	V	47.3	Ambient	8.0	39.0	-39.5	54.8	549.8	5000.0	-19.2
14622.00	H	37.6	Ambient	8.8	39.6	-40.1	46.0	199.5	6115.2	-29.7
14622.00	V	38.2	Ambient	8.8	39.6	-40.1	46.6	213.8	6115.2	-29.1
17059.00	H	37.6	Ambient	9.5	40.9	-38.7	49.4	294.0	6115.2	-26.4
17059.00	V	37.6	Ambient	9.5	40.9	-38.7	49.4	294.0	6115.2	-26.4
19496.00	H	35.2	Ambient	3.3	40.4	-27.2	51.7	385.3	5000.0	-22.3
19496.00	V	34.3	Ambient	3.3	40.4	-27.2	50.8	347.4	5000.0	-23.2
21933.00	H	27.3	Ambient	3.3	40.6	-26.9	44.3	164.7	6115.2	-31.4
21933.00	V	26.4	Ambient	3.3	40.6	-26.9	43.4	148.5	6115.2	-32.3
24370.00	H	26.8	Ambient	3.3	40.6	-27.5	43.3	146.1	6115.2	-32.4
24370.00	V	26.2	Ambient	3.3	40.6	-27.5	42.7	136.4	6115.2	-33.0

MANUFACTURER : Life Shadow LLC
MODEL NO. : LSM01
TEST SPECIFICATION : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions
DATE : June 3, 2013 through June 5, 2013
MODE : Transmit @ 2437MHz, 802.11g 54MB/s
TEST DISTANCE : 3 meters
TEST EQUIPMENT : RBB0, NTA2,NWQ2,NHG0,APW3,APW0,X0B0,XPR0,CMA1
NOTES : Average Readings in Restricted Bands
: Total = Meter Reading + Cable Fac + Antenna Factor + Preamp Gain

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4874.00	H	34.2	Ambient	4.9	34.4	-40.1	0.0	33.4	46.6	500.0	-20.6
4874.00	V	34.2	Ambient	4.9	34.4	-40.1	0.0	33.4	46.6	500.0	-20.6
7311.00	H	34.30	Ambient	6.2	35.4	-39.8	0.0	36.1	64.0	500.0	-17.9
7311.00	V	34.2	Ambient	6.2	35.4	-39.8	0.0	36.0	63.2	500.0	-18.0
12185.00	H	34.3	Ambient	8.0	39.0	-39.5	0.0	41.8	123.1	500.0	-12.2
12185.00	V	34.3	Ambient	8.0	39.0	-39.5	0.0	41.8	123.1	500.0	-12.2
19496.00	H	22.8	Ambient	3.3	40.4	-27.2	0.0	39.3	92.4	500.0	-14.7
19496.00	V	22.8	Ambient	3.3	40.4	-27.2	0.0	39.3	92.4	500.0	-14.7

MANUFACTURER : Life Shadow LLC
MODEL NO. : LSM01
TEST SPECIFICATION : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions
DATE : June 3, 2013 through June 5, 2013
MODE : Transmit @ 2462MHz, 802.11g 54MB/s
TEST DISTANCE : 3 meters
TEST EQUIPMENT : RBB0, NTA2,NWQ2,NHG0,APW3,APW0,X0B0,XPR0,CMA1
NOTES : Peak Detector
: Total = Meter Reading + Cable Fac + Antenna Factor + Preamp Gain

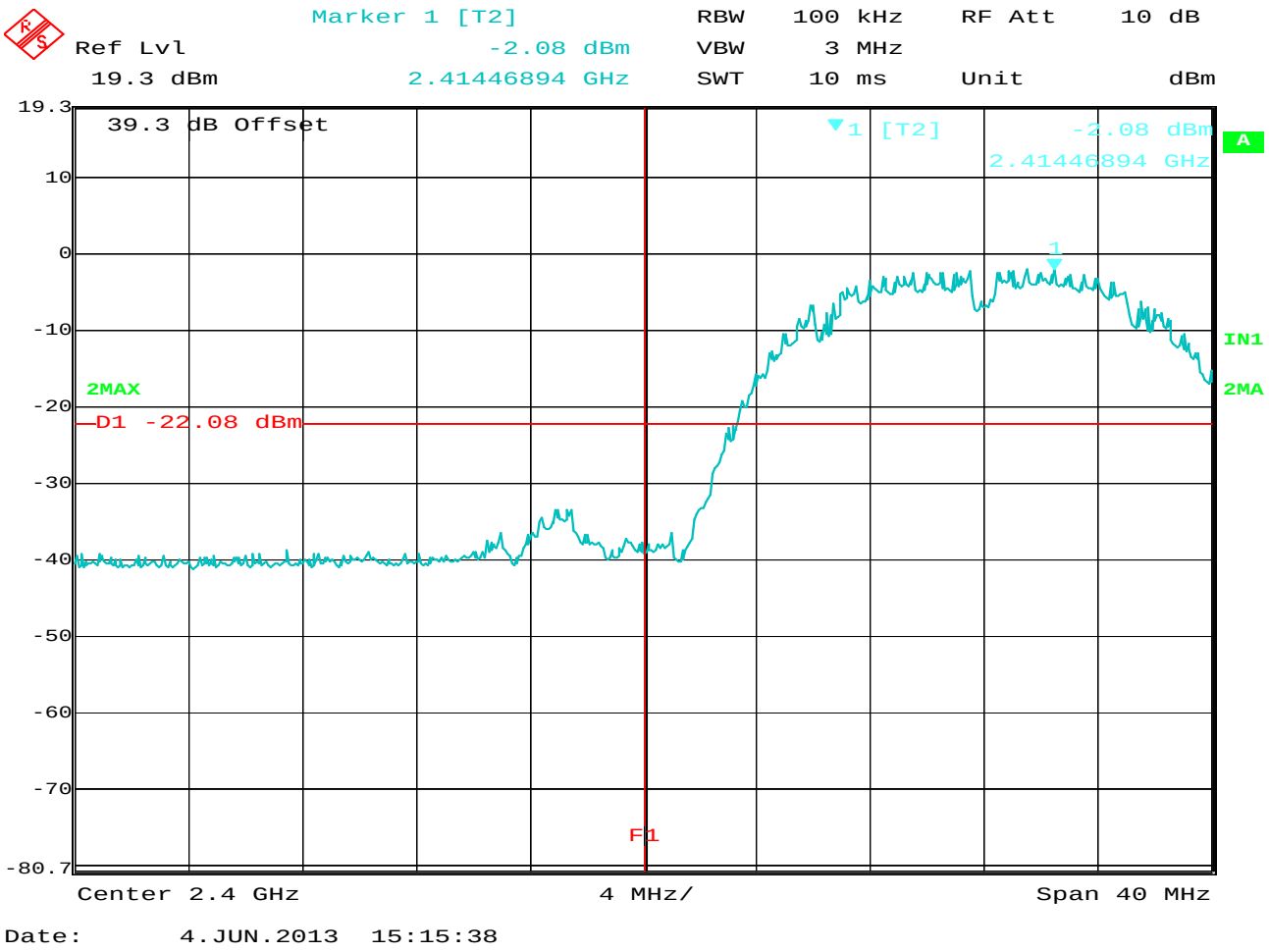
Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
2462.00	H	61.2		3.5	32.3	0.0	97.0	70798.2		
2462.00	V	58.9		3.5	32.3	0.0	94.7	54327.8		
4924.00	H	47.0	Ambient	4.9	34.5	-40.1	46.2	204.1	5000.0	-27.8
4924.00	V	47.8	Ambient	4.9	34.5	-40.1	47.0	223.8	5000.0	-27.0
7386.00	H	46.2	Ambient	6.2	35.4	-39.7	48.1	253.9	5000.0	-25.9
7386.00	V	47.2	Ambient	6.2	35.4	-39.7	49.1	284.9	5000.0	-24.9
9848.00	H	38.1	Ambient	6.9	37.0	-38.7	43.3	147.0	7079.8	-33.7
9848.00	V	37.9	Ambient	6.9	37.0	-38.7	43.1	143.7	7079.8	-33.9
12310.00	H	47.3	Ambient	8.0	38.9	-39.3	54.9	554.4	5000.0	-19.1
12310.00	V	47.4	Ambient	8.0	38.9	-39.3	55.0	560.9	5000.0	-19.0
14772.00	H	36.9	Ambient	8.9	39.7	-40.2	45.3	183.4	7079.8	-31.7
14772.00	V	37.5	Ambient	8.9	39.7	-40.2	45.9	196.5	7079.8	-31.1
17234.00	H	38.2	Ambient	9.6	41.0	-38.9	50.0	315.6	7079.8	-27.0
17234.00	V	37.6	Ambient	9.6	41.0	-38.9	49.4	294.5	7079.8	-27.6
19696.00	H	34.1	Ambient	3.3	40.4	-27.0	50.8	348.2	5000.0	-23.1
19696.00	V	35.7	Ambient	3.3	40.4	-27.0	52.4	418.7	5000.0	-21.5
22158.00	H	35.0	Ambient	3.3	40.6	-27.0	51.9	392.2	5000.0	-22.1
22158.00	V	35.6	Ambient	3.3	40.6	-27.0	52.5	420.3	5000.0	-21.5
24620.00	H	26.2	Ambient	3.3	40.6	-27.4	42.8	137.8	7079.8	-34.2
24620.00	V	22.7	Ambient	3.3	40.6	-27.4	39.3	92.1	7079.8	-37.7

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
2462.00	H	61.2		3.5	32.3	0.0	97.0	70798.2		
2462.00	V	58.9		3.5	32.3	0.0	94.7	54327.8		
4924.00	H	47.0	Ambient	4.9	34.5	-40.1	46.2	204.1	5000.0	-27.8
4924.00	V	47.8	Ambient	4.9	34.5	-40.1	47.0	223.8	5000.0	-27.0
7386.00	H	46.2	Ambient	6.2	35.4	-39.7	48.1	253.9	5000.0	-25.9
7386.00	V	47.2	Ambient	6.2	35.4	-39.7	49.1	284.9	5000.0	-24.9

9848.00	H	38.1	Ambient	6.9	37.0	-38.7	43.3	147.0	7079.8	-33.7
9848.00	V	37.9	Ambient	6.9	37.0	-38.7	43.1	143.7	7079.8	-33.9
12310.00	H	47.3	Ambient	8.0	38.9	-39.3	54.9	554.4	5000.0	-19.1
12310.00	V	47.4	Ambient	8.0	38.9	-39.3	55.0	560.9	5000.0	-19.0
14772.00	H	36.9	Ambient	8.9	39.7	-40.2	45.3	183.4	7079.8	-31.7
14772.00	V	37.5	Ambient	8.9	39.7	-40.2	45.9	196.5	7079.8	-31.1
17234.00	H	38.2	Ambient	9.6	41.0	-38.9	50.0	315.6	7079.8	-27.0
17234.00	V	37.6	Ambient	9.6	41.0	-38.9	49.4	294.5	7079.8	-27.6
19696.00	H	34.1	Ambient	3.3	40.4	-27.0	50.8	348.2	5000.0	-23.1
19696.00	V	35.7	Ambient	3.3	40.4	-27.0	52.4	418.7	5000.0	-21.5
22158.00	H	35.0	Ambient	3.3	40.6	-27.0	51.9	392.2	5000.0	-22.1
22158.00	V	35.6	Ambient	3.3	40.6	-27.0	52.5	420.3	5000.0	-21.5
24620.00	H	26.2	Ambient	3.3	40.6	-27.4	42.8	137.8	7079.8	-34.2
24620.00	V	22.7	Ambient	3.3	40.6	-27.4	39.3	92.1	7079.8	-37.7

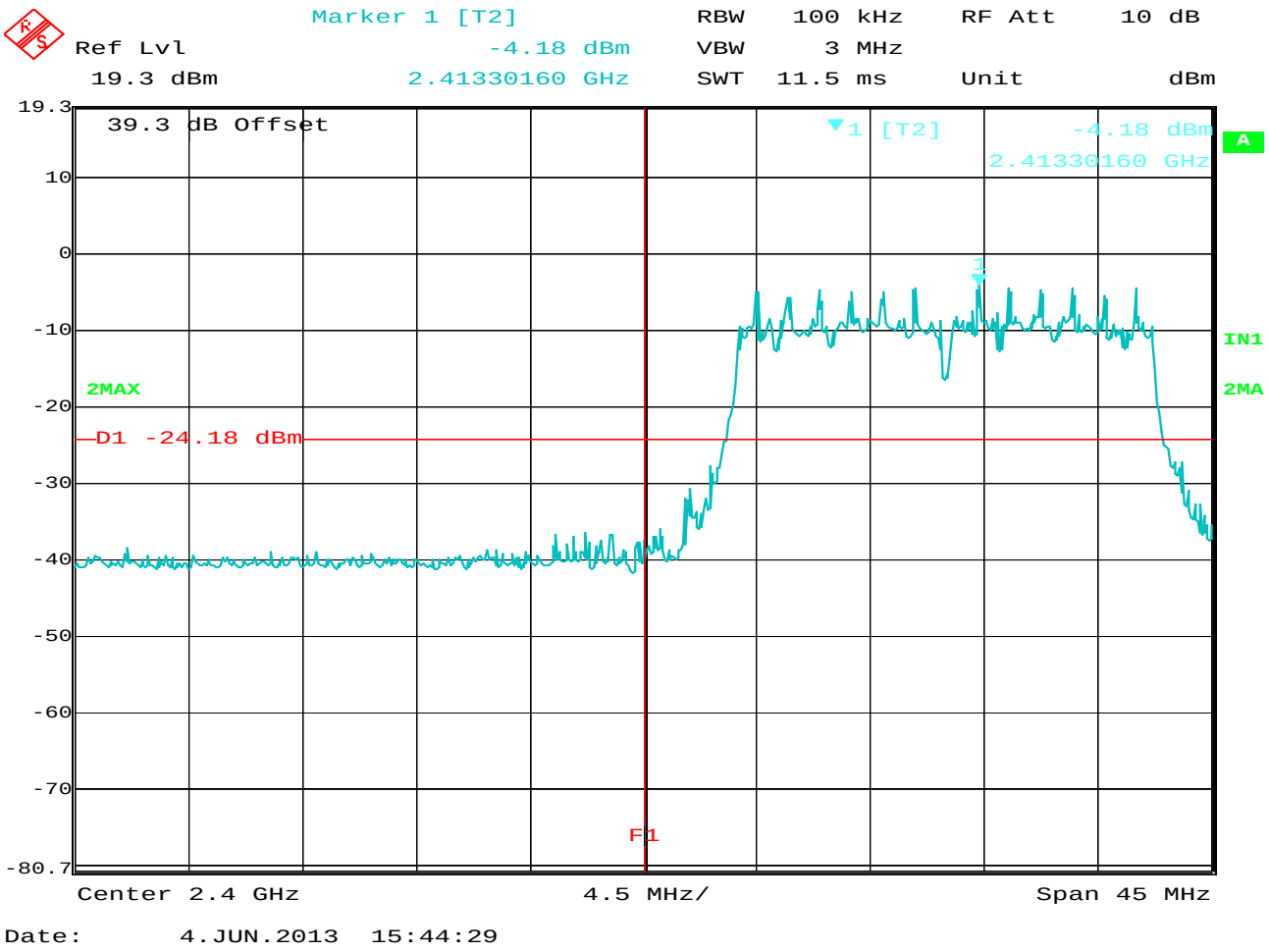
MANUFACTURER : Life Shadow LLC
MODEL NO. : LSM01
TEST SPECIFICATION : FCC Part 15, Subpart C, Section 15.247, Radiated Emissions
DATE : June 3, 2013 through June 5, 2013
MODE : Transmit @ 2462MHz, 802.11g 54MB/s
TEST DISTANCE : 3 meters
TEST EQUIPMENT : RBB0, NTA2,NWQ2,NHG0,APW3,APW0,X0B0,XPR0,CMA1
NOTES : Average Readings in Restricted Bands
: Total = Meter Reading + Cable Fac + Antenna Factor + Preamp Gain

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
4924.00	H	33.8	Ambient	4.9	34.5	-40.1	0.0	33.0	44.7	500.0	-21.0
4924.00	V	33.8	Ambient	4.9	34.5	-40.1	0.0	33.0	44.7	500.0	-21.0
7386.00	H	33.80	Ambient	6.2	35.4	-39.7	0.0	35.7	60.9	500.0	-18.3
7386.00	V	33.8	Ambient	6.2	35.4	-39.7	0.0	35.7	60.9	500.0	-18.3
12310.00	H	34.7	Ambient	8.0	38.9	-39.3	0.0	42.3	130.0	500.0	-11.7
12310.00	V	34.7	Ambient	8.0	38.9	-39.3	0.0	42.3	130.0	500.0	-11.7
19696.00	H	22.5	Ambient	3.3	40.4	-27.0	0.0	39.2	91.6	500.0	-14.7
19696.00	V	22.6	Ambient	3.3	40.4	-27.0	0.0	39.3	92.7	500.0	-14.6
22158.00	H	23.2	Ambient	3.3	40.6	-27.0	0.0	40.1	100.8	500.0	-13.9
22158.00	V	23.4	Ambient	3.3	40.6	-27.0	0.0	40.3	103.2	500.0	-13.7



Band-edge Compliance

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Band-edge compliance
NOTES	:	802.11b, 11Mb/s
NOTES	:	Display Line (F1) represents the low band-edge (2400MHz).
	:	Display Line (D1) represents the 20dB point relative to the maximum in-band peak PSD in a 100kHz bandwidth.
EQUIPMENT USED	:	RBB0, T2S3,T2S6



Band-edge Compliance

MANUFACTURER	:	Life Shadow LLC
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Band-edge compliance
NOTES	:	802.11g, 54Mb/s
NOTES	:	Display Line (F1) represents the low band-edge (2400MHz).
	:	Display Line (D1) represents the 20dB point relative to the maximum in-band peak PSD in a 100kHz bandwidth.
EQUIPMENT USED	:	RBB0, T2S3,T2S6

MANUFACTURER : Life Shadow LLC
MODEL NO. : LSM01
TEST SPECIFICATION : FCC Part 15, Subpart C, Section 15.247, Band Edge Compliance
DATE : June 3, 2013 through June 5, 2013
MODE : Transmit @ 2462MHz, 802.11b 11MB/s
TEST DISTANCE : 3 meters
TEST EQUIPMENT : RBB0, NWQ2,CMA1
NOTES : Peak Detector
: Total = Meter Reading + Cable Fac + Antenna Factor + Preamp Gain

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
2483.50	H	30.2		3.5	32.4	0.0	66.1	2009.5	5000.0	-7.9
2483.50	V	27.9		3.5	32.4	0.0	63.8	1542.0	5000.0	-10.2

MANUFACTURER : Life Shadow LLC
MODEL NO. : LSM01
TEST SPECIFICATION : FCC Part 15, Subpart C, Section 15.247, Band Edge Compliance
DATE : June 3, 2013 through June 5, 2013
MODE : Transmit @ 2462MHz, 802.11b 11MB/s
TEST DISTANCE : 3 meters
TEST EQUIPMENT : RBB0, NWQ2,CMA1
NOTES : Peak Detector
: Total = Meter Reading + Cable Fac + Antenna Factor + Preamp Gain

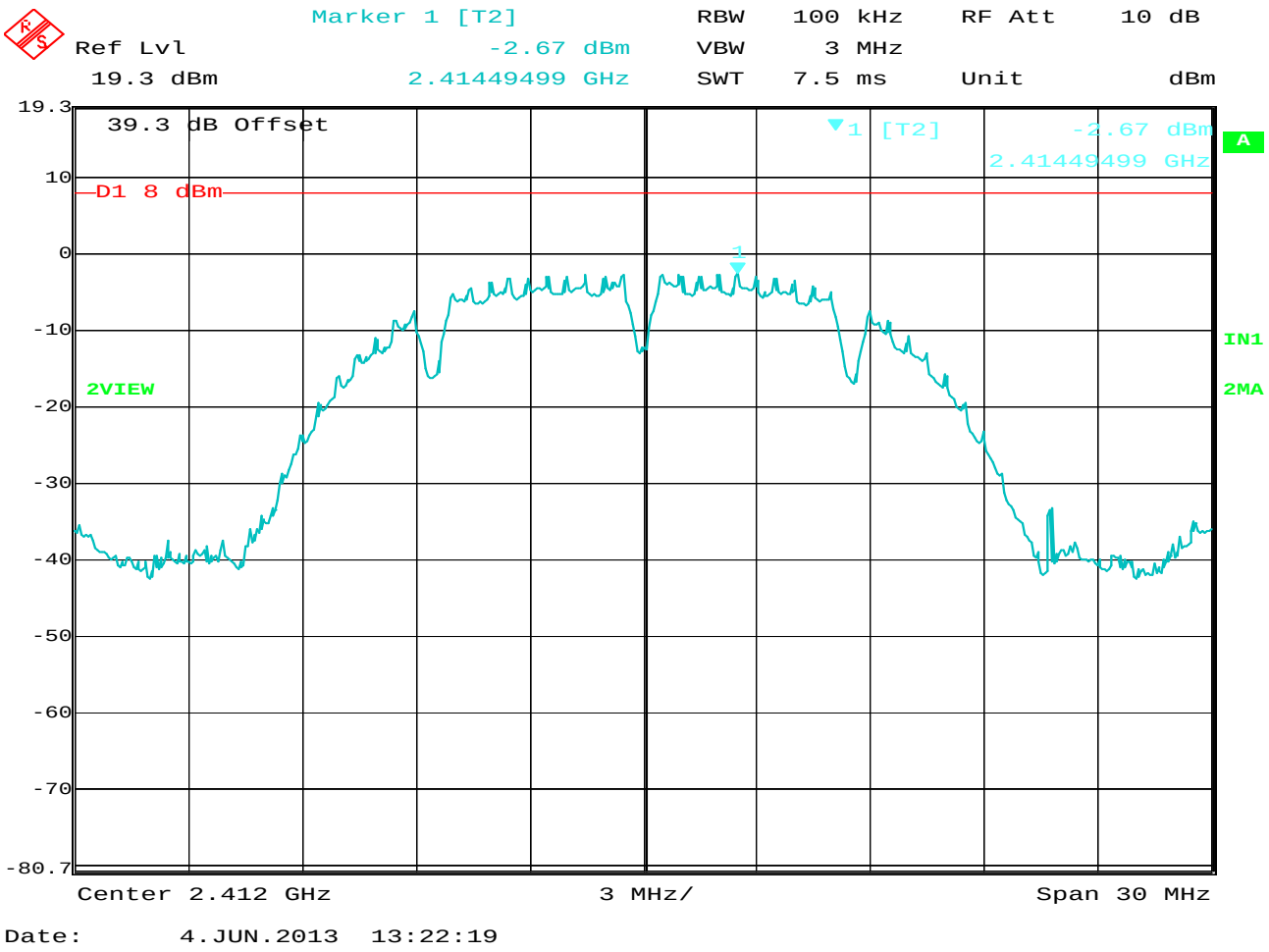
Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
2483.50	H	17.9		3.5	32.4	0.0	0.0	53.8	487.6	500.0	-0.2
2483.50	V	16.0		3.5	32.4	0.0	0.0	51.9	391.8	500.0	-2.1

MANUFACTURER : Life Shadow LLC
MODEL NO. : LSM01
TEST SPECIFICATION : FCC Part 15, Subpart C, Section 15.247, Band Edge Compliance
DATE : June 3, 2013 through June 5, 2013
MODE : Transmit @ 2462MHz, 802.11g 54MB/s
TEST DISTANCE : 3 meters
TEST EQUIPMENT : RBB0, NWQ2,CMA1
NOTES : Peak Detector
: Total = Meter Reading + Cable Fac + Antenna Factor + Preamp Gain

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Peak Total dBuV/m at 3m	Peak Total uV/m at 3 m	Peak Limit uV/m at 3 m	Margin (dB)
2483.50	H	35.1		3.5	32.4	0.0	71.0	3532.6	5000.0	-3.0
2483.50	V	28.6		3.5	32.4	0.0	64.5	1671.5	5000.0	-9.5

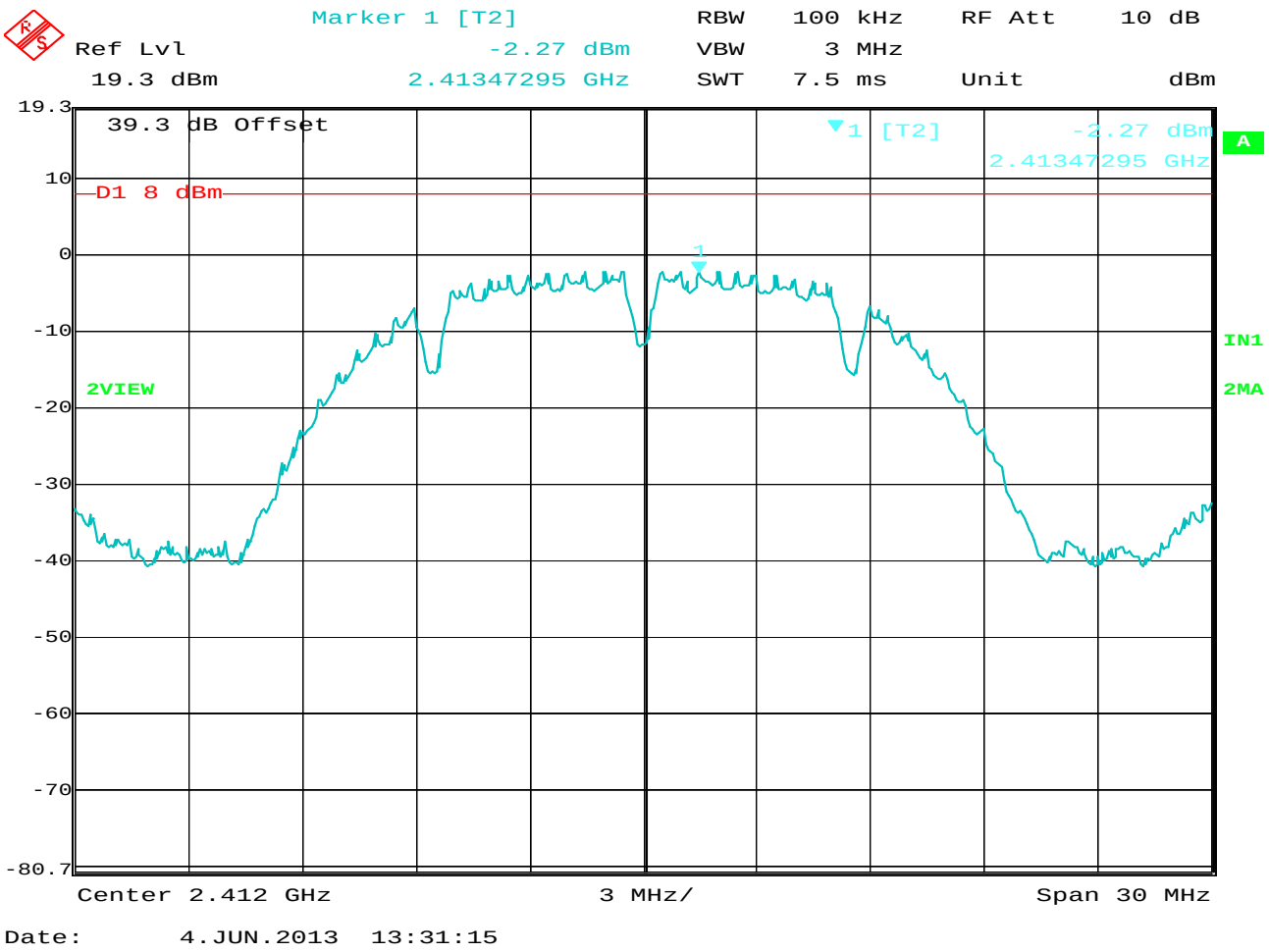
MANUFACTURER : Life Shadow LLC
MODEL NO. : LSM01
TEST SPECIFICATION : FCC Part 15, Subpart C, Section 15.247, Band Edge Compliance
DATE : June 3, 2013 through June 5, 2013
MODE : Transmit @ 2462MHz, 802.11g 54MB/s
TEST DISTANCE : 3 meters
TEST EQUIPMENT : RBB0, NWQ2,CMA1
NOTES : Peak Detector
: Total = Meter Reading + Cable Fac + Antenna Factor + Preamp Gain

Freq. MHz	Ant Pol	Meter Reading (dBuV)	Ambient	CBL Fac (dB)	Ant Fac (dB)	Pre Amp (dB)	Duty Cycle (dB)	Average Total dBuV/m at 3m	Average Total uV/m at 3 m	Average Limit uV/m at 3 m	Margin (dB)
2483.50	H	4.5		3.5	32.4	0.0	0.0	40.4	104.3	500.0	-13.6
2483.50	V	3.7		3.5	32.4	0.0	0.0	39.6	95.1	500.0	-14.4



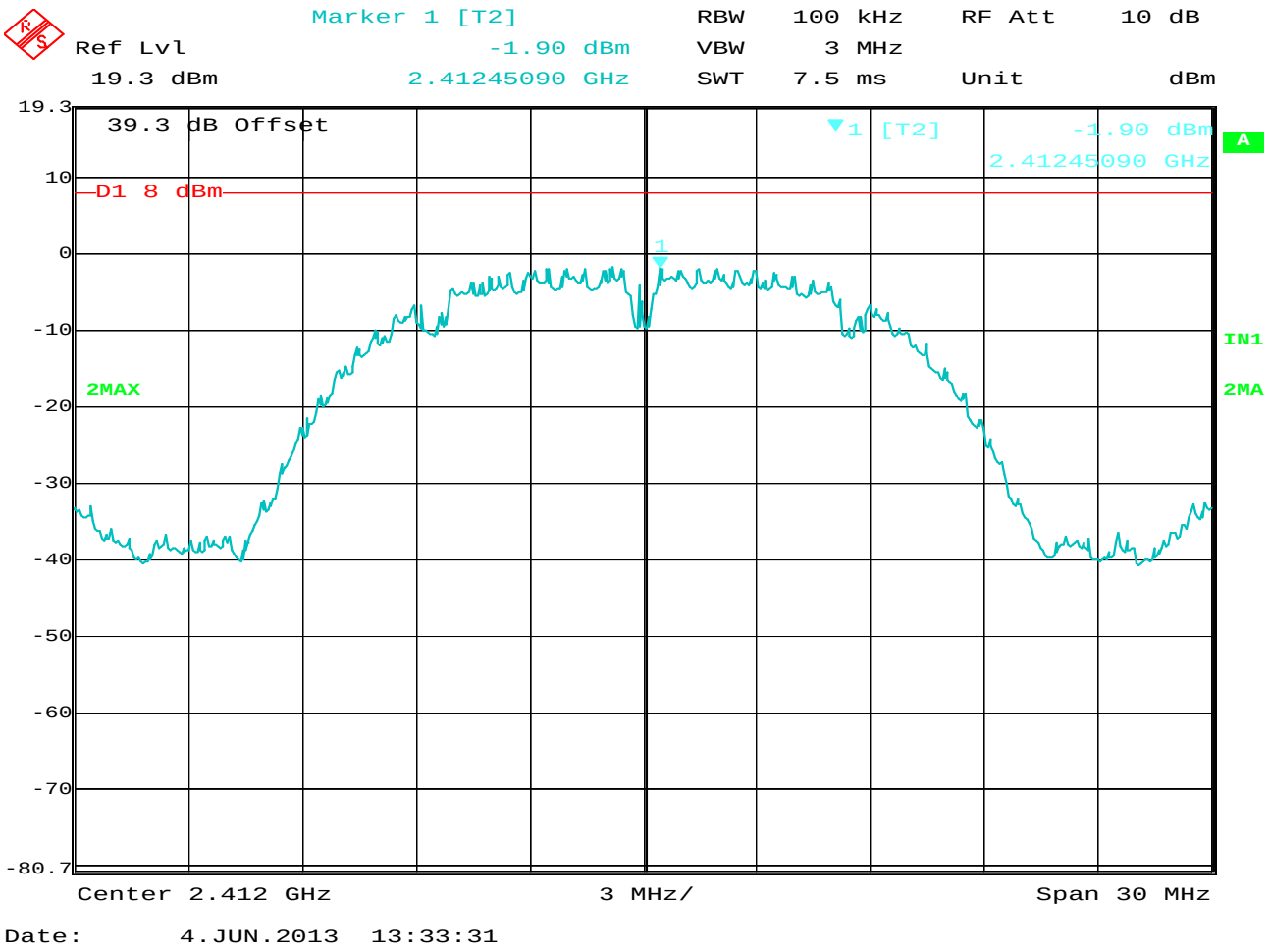
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 1Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



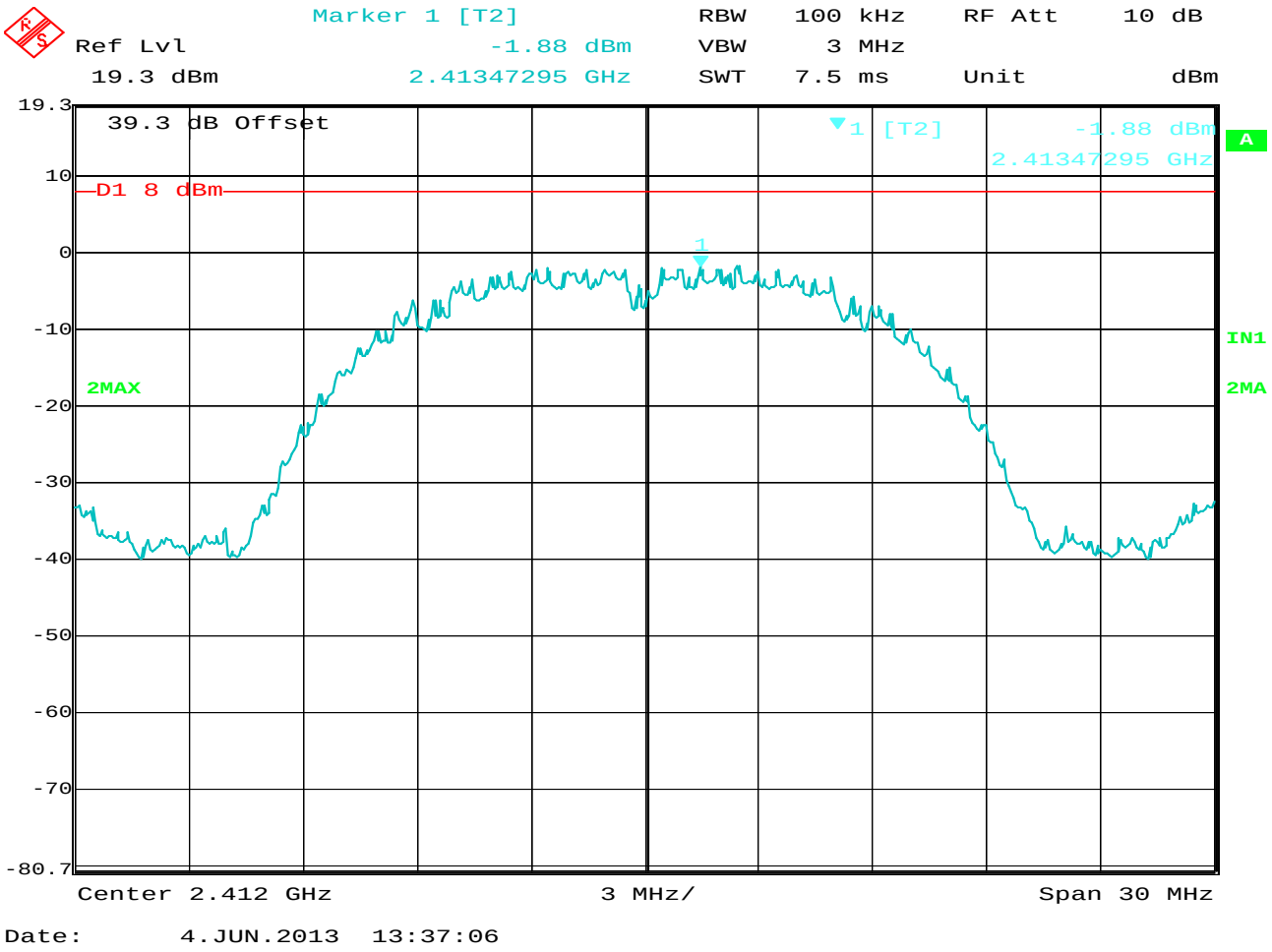
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 2Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



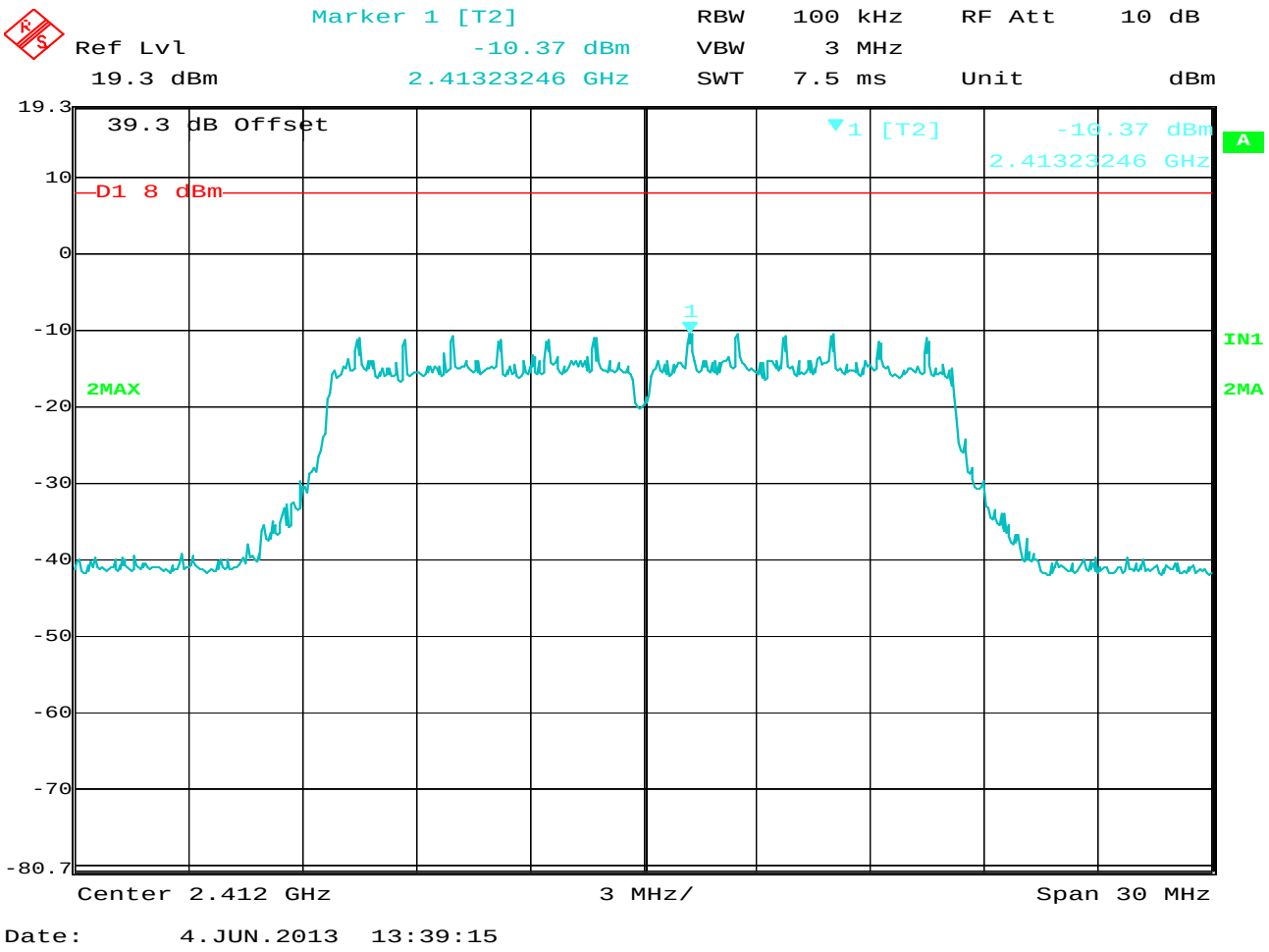
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 5.5Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



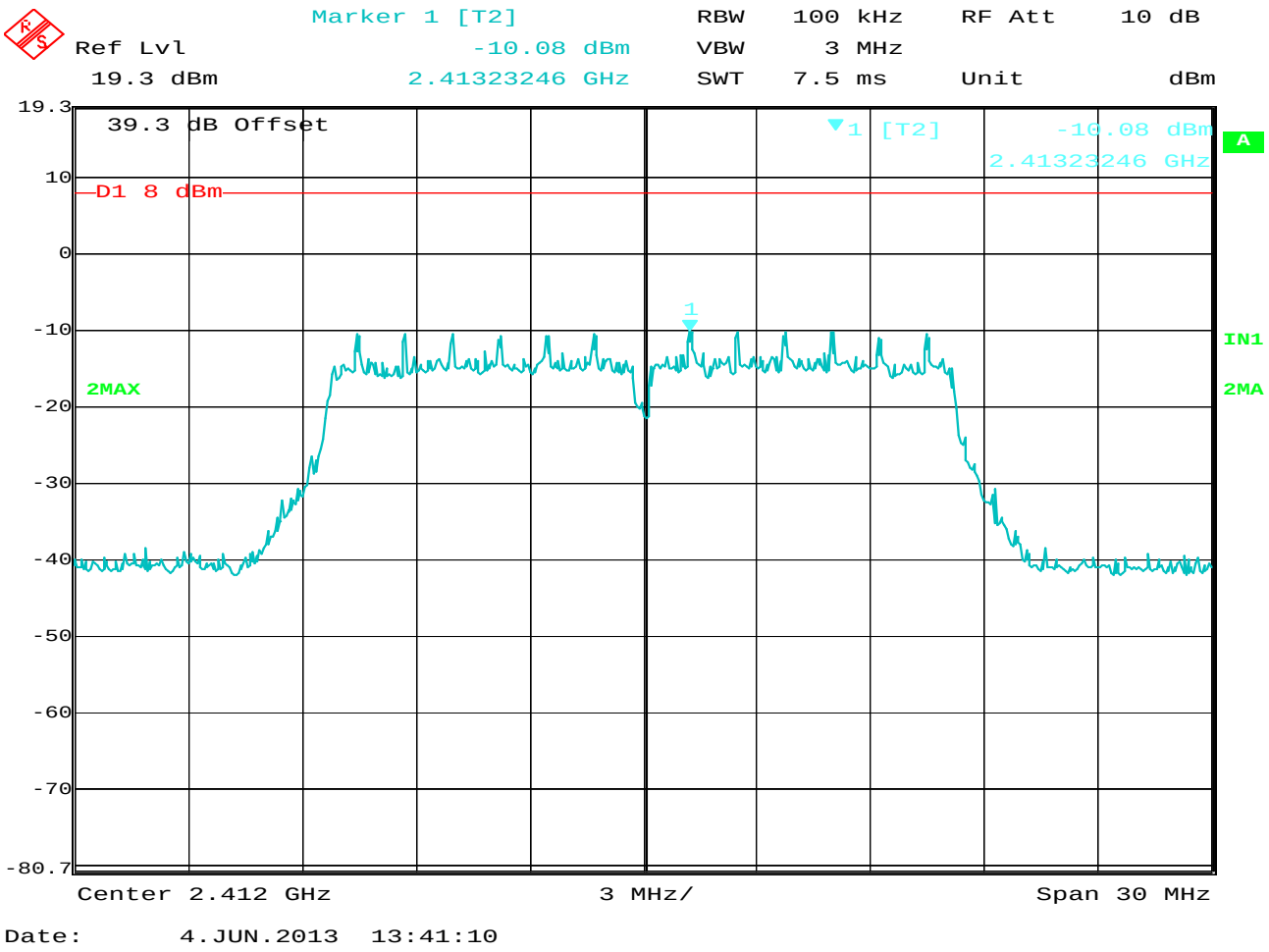
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 11Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



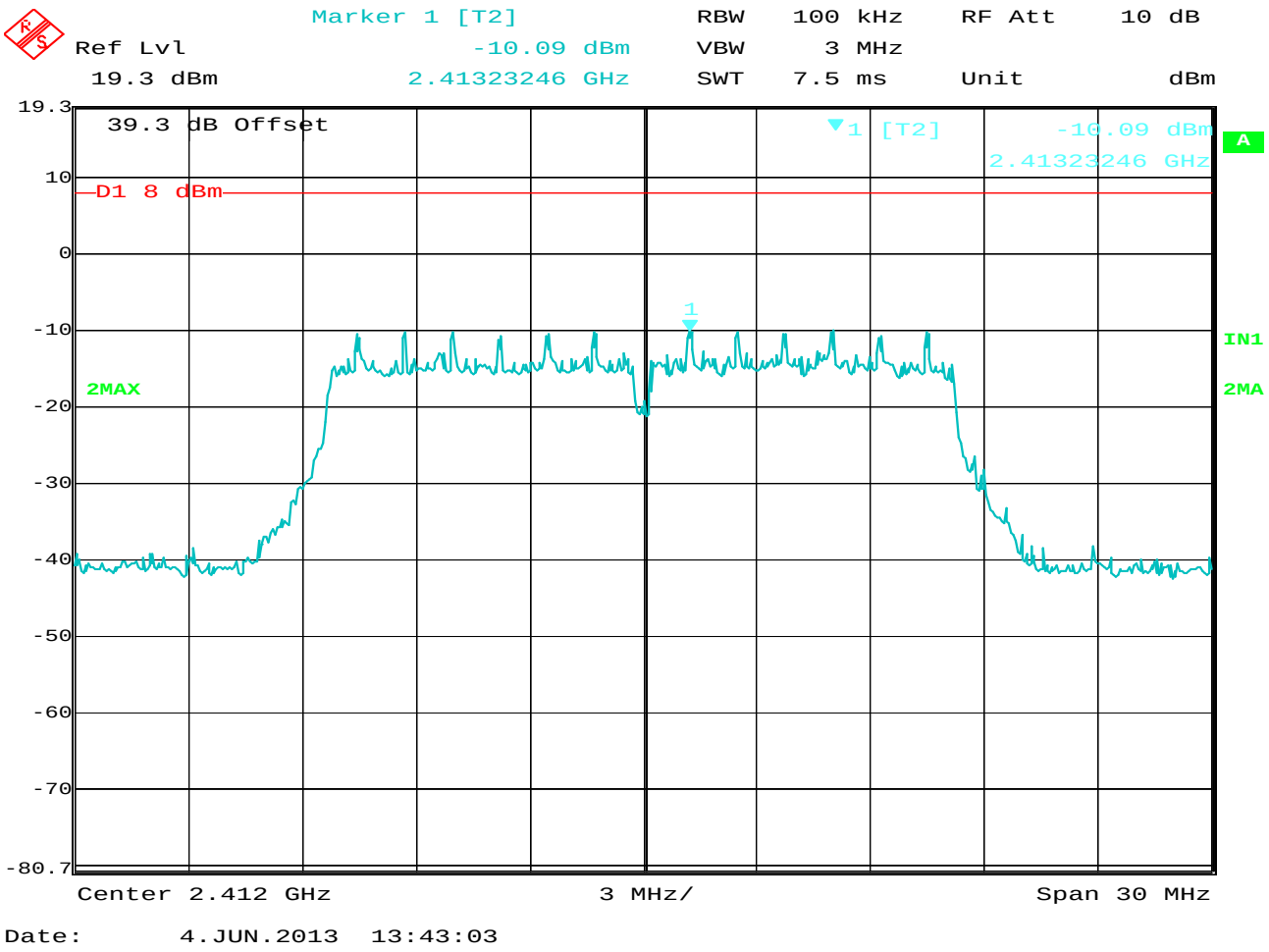
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 6Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



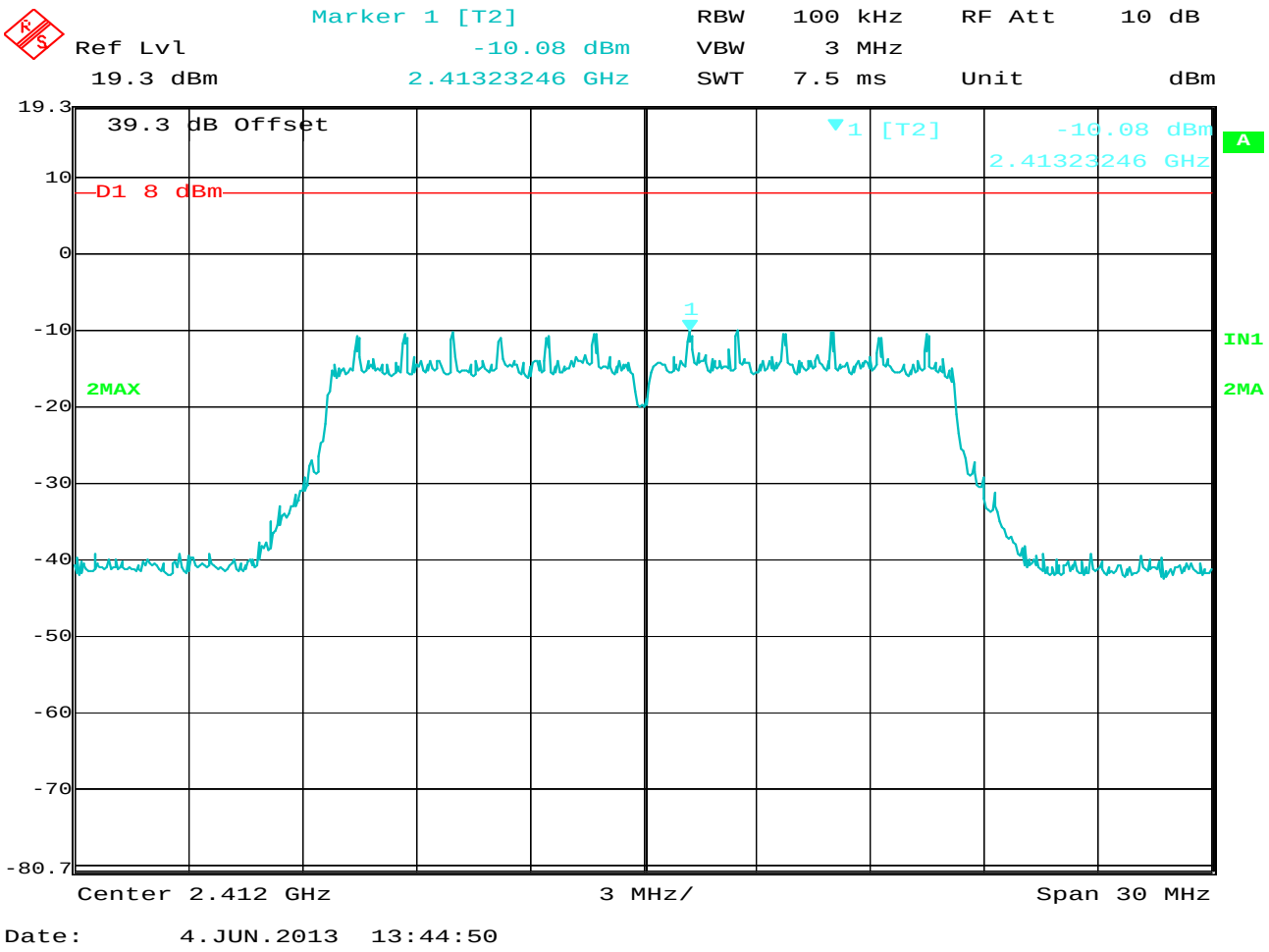
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 9Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



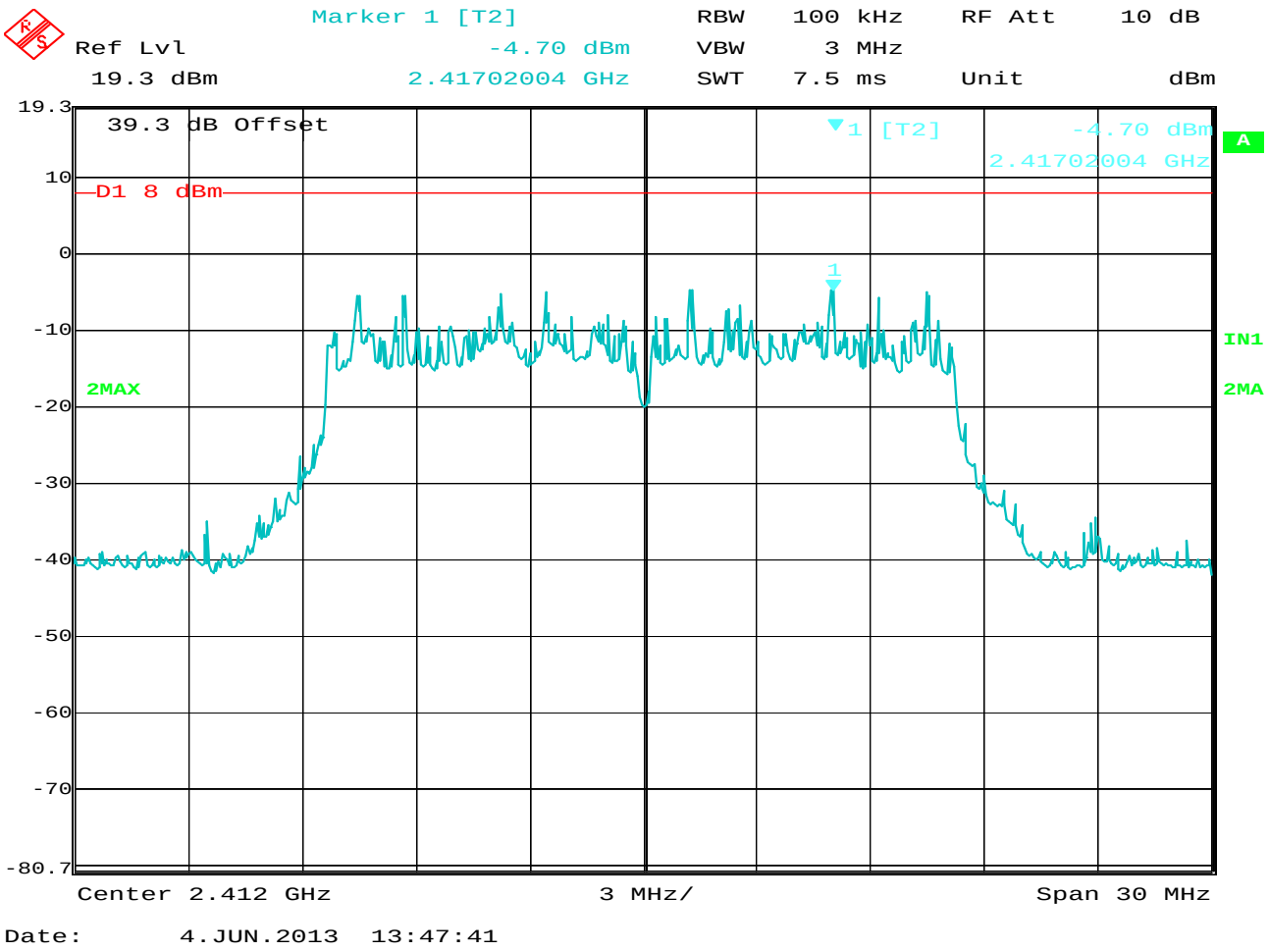
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 12Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



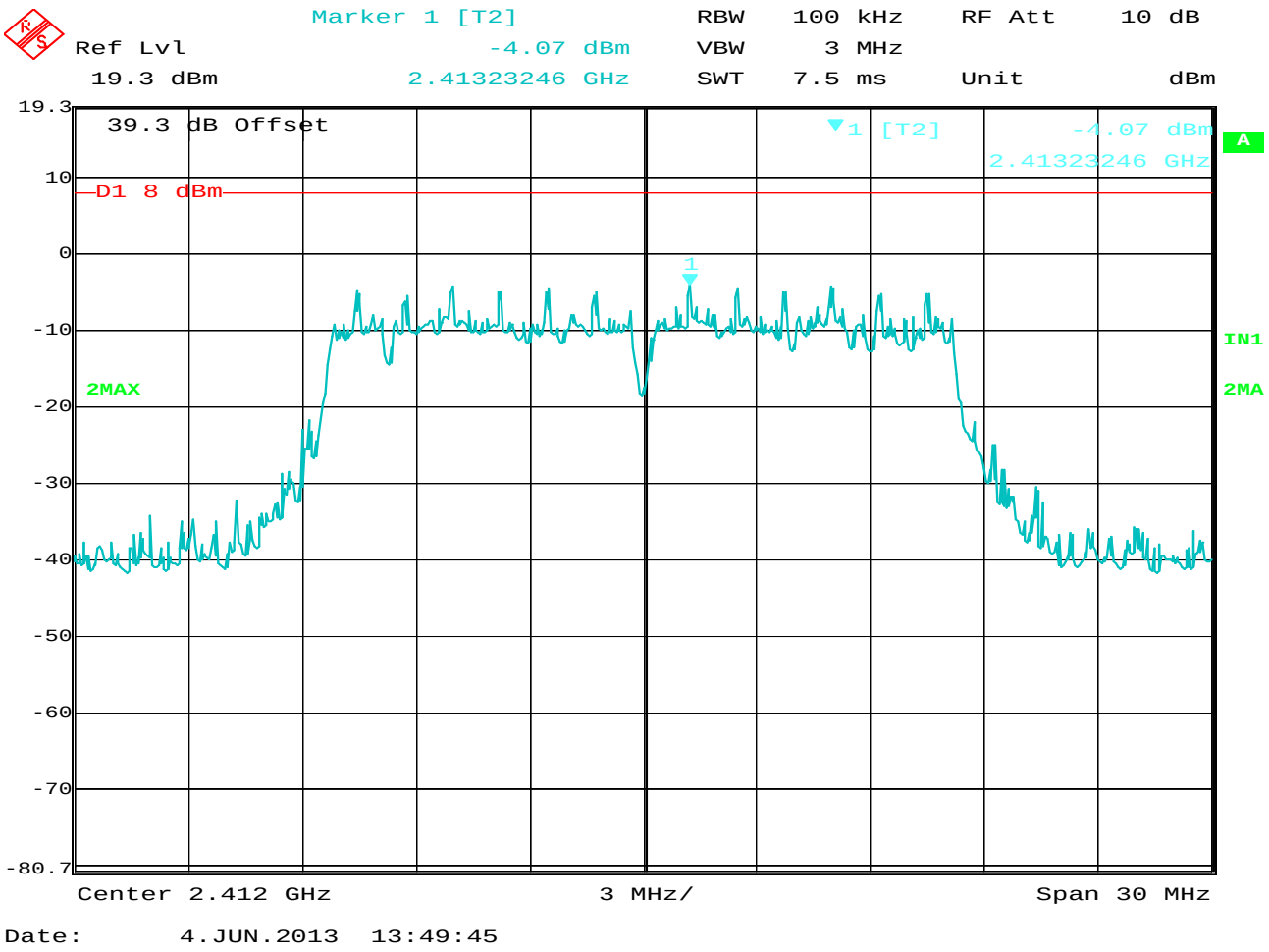
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 18Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



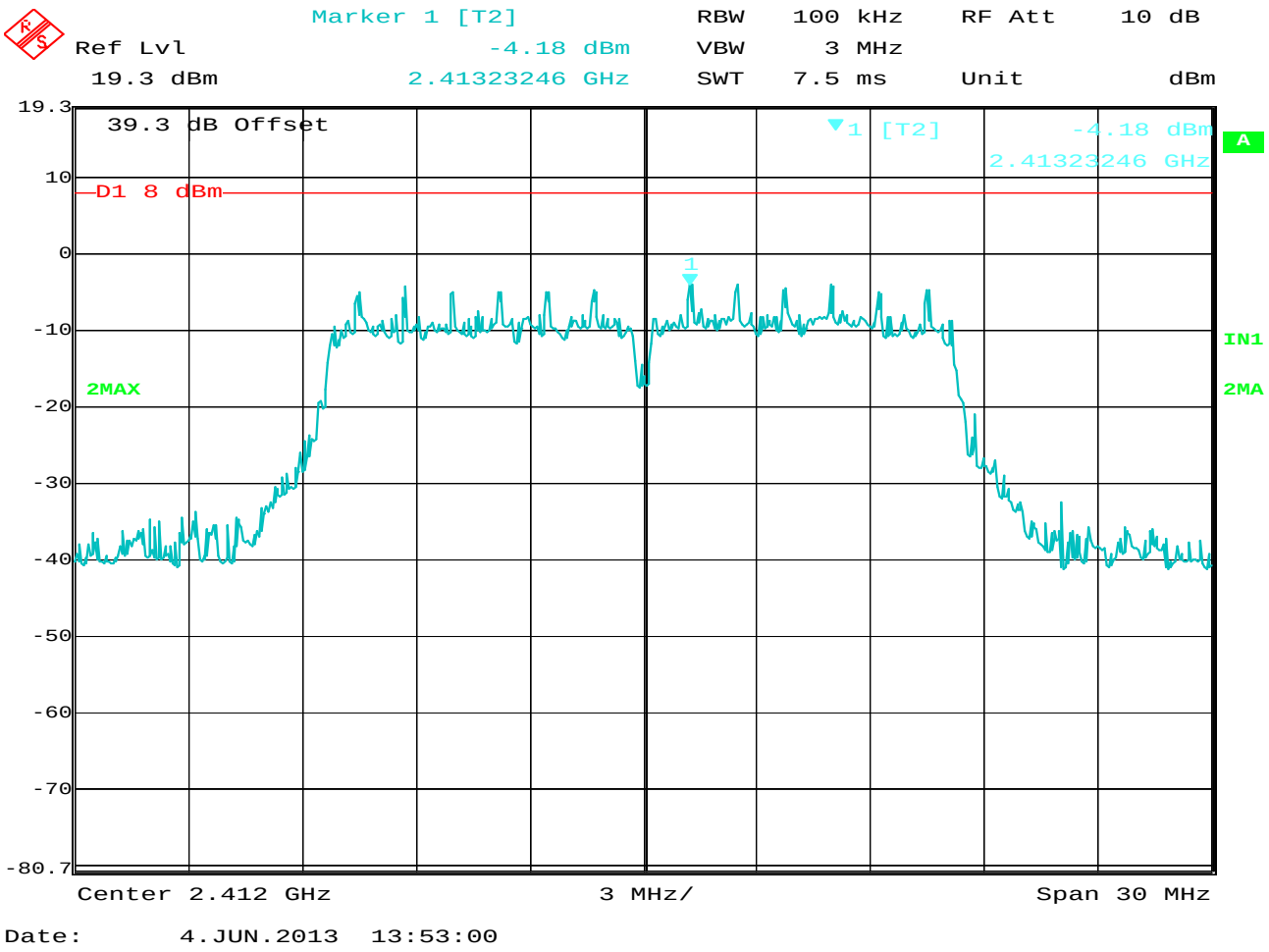
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 24Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



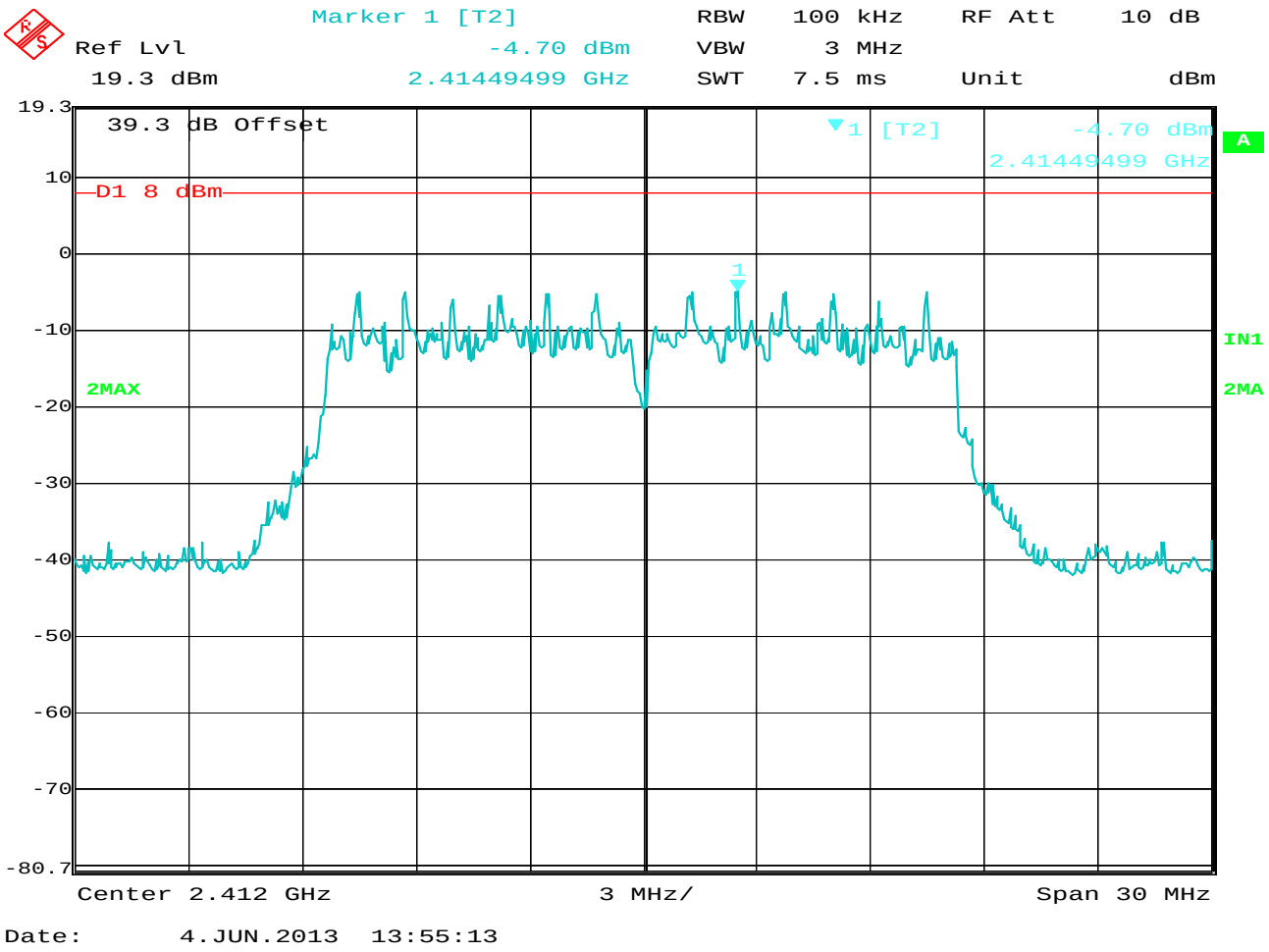
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 36Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



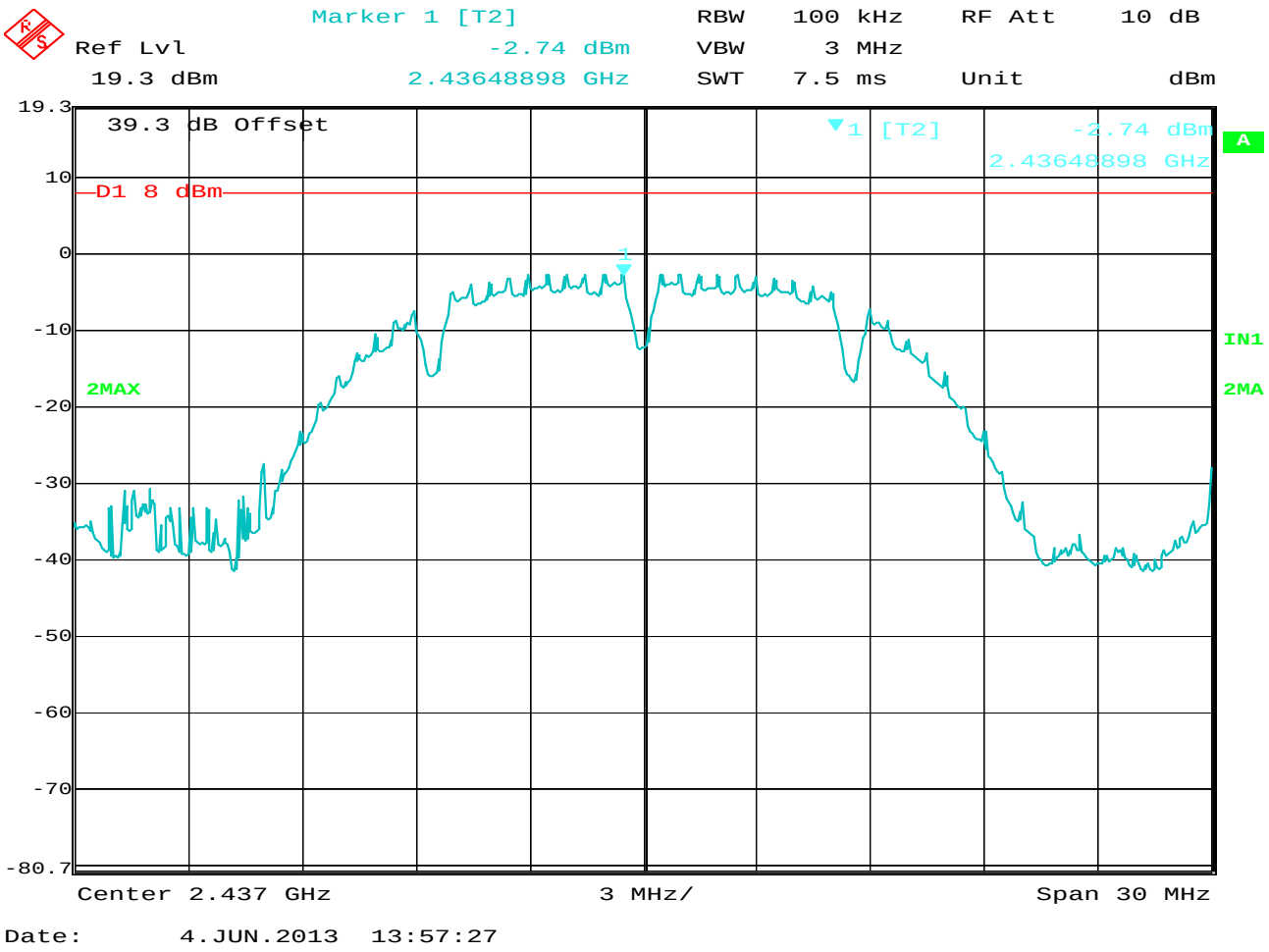
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 48Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



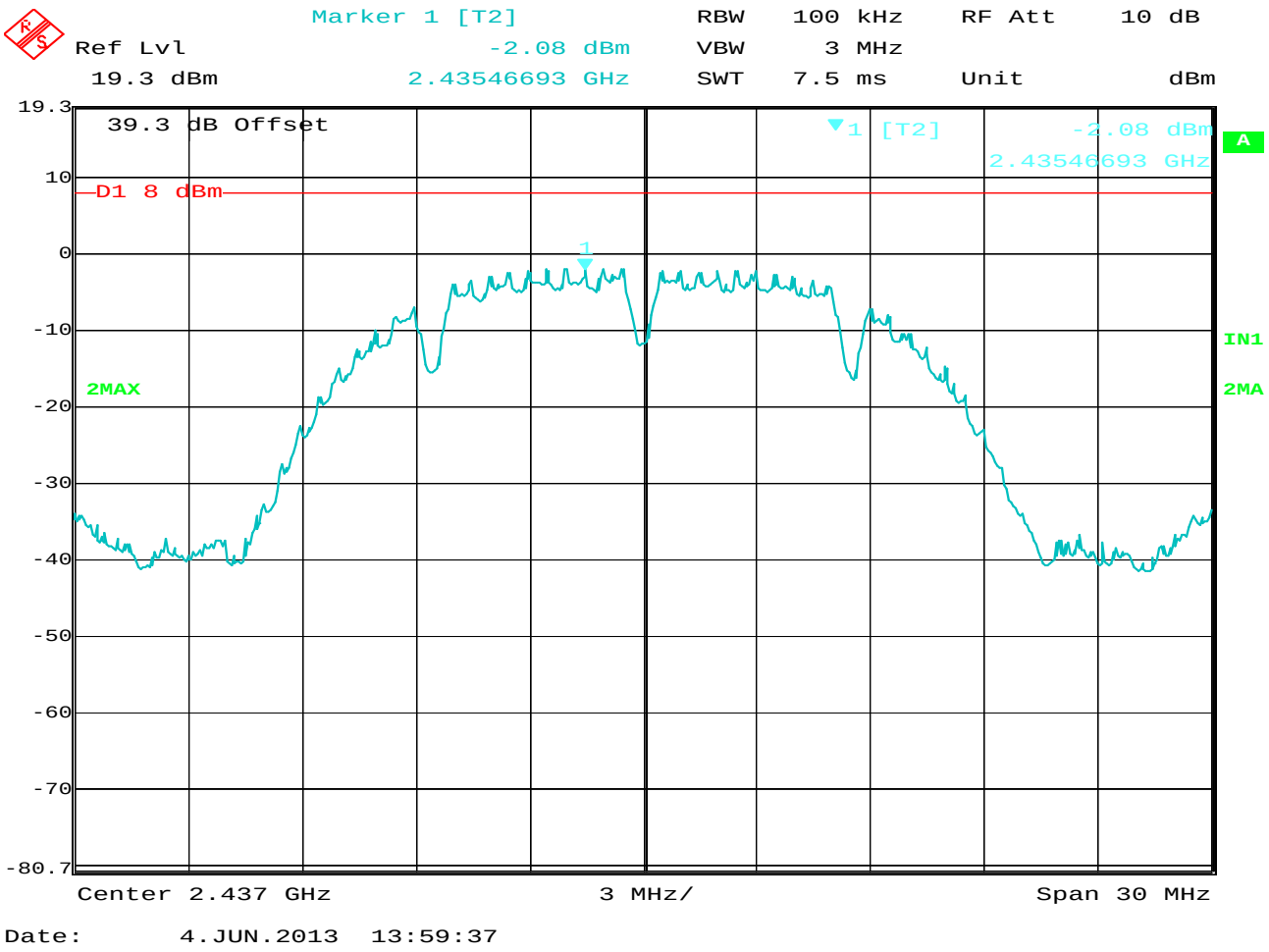
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.412GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 54Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



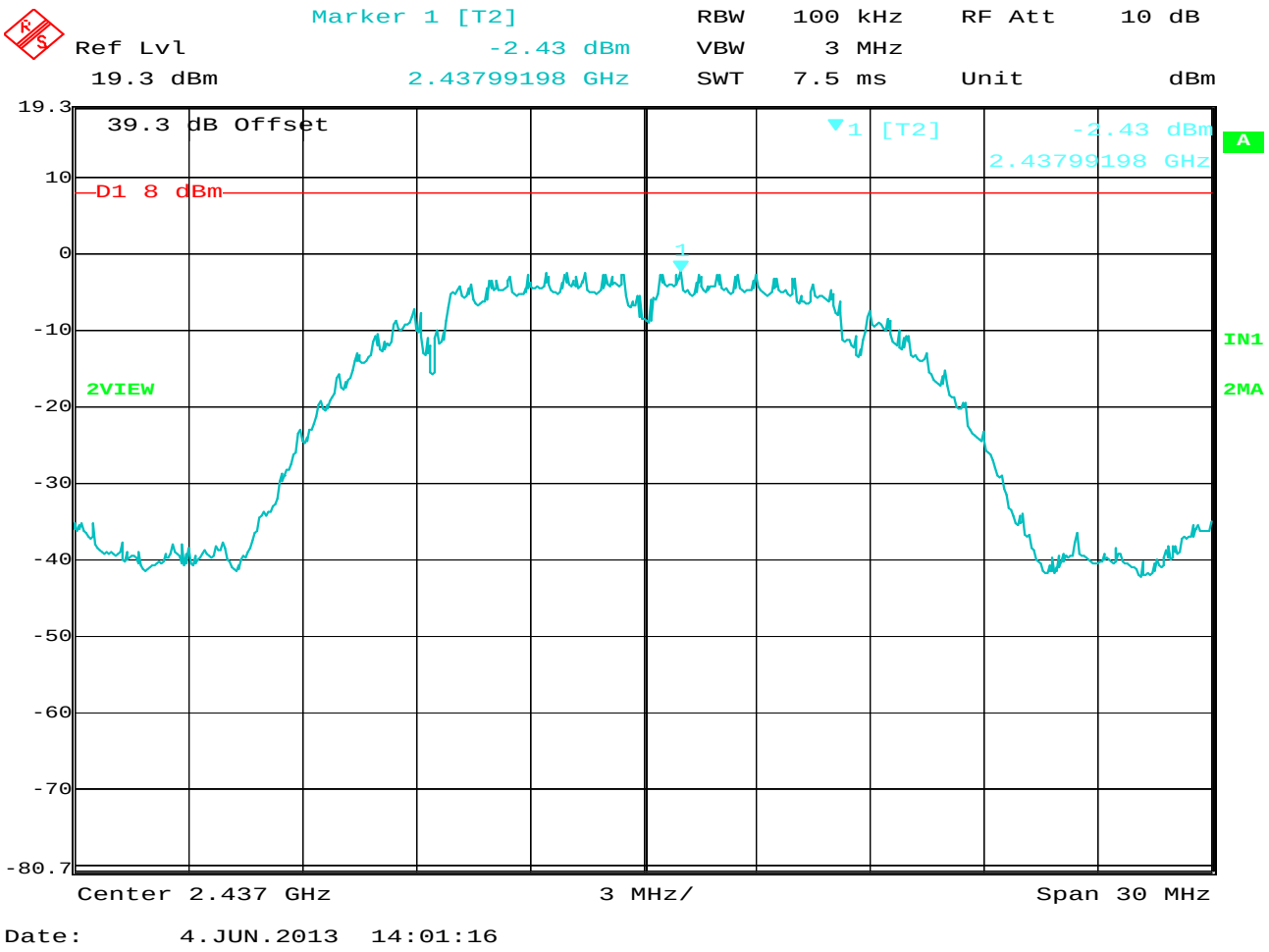
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 1 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



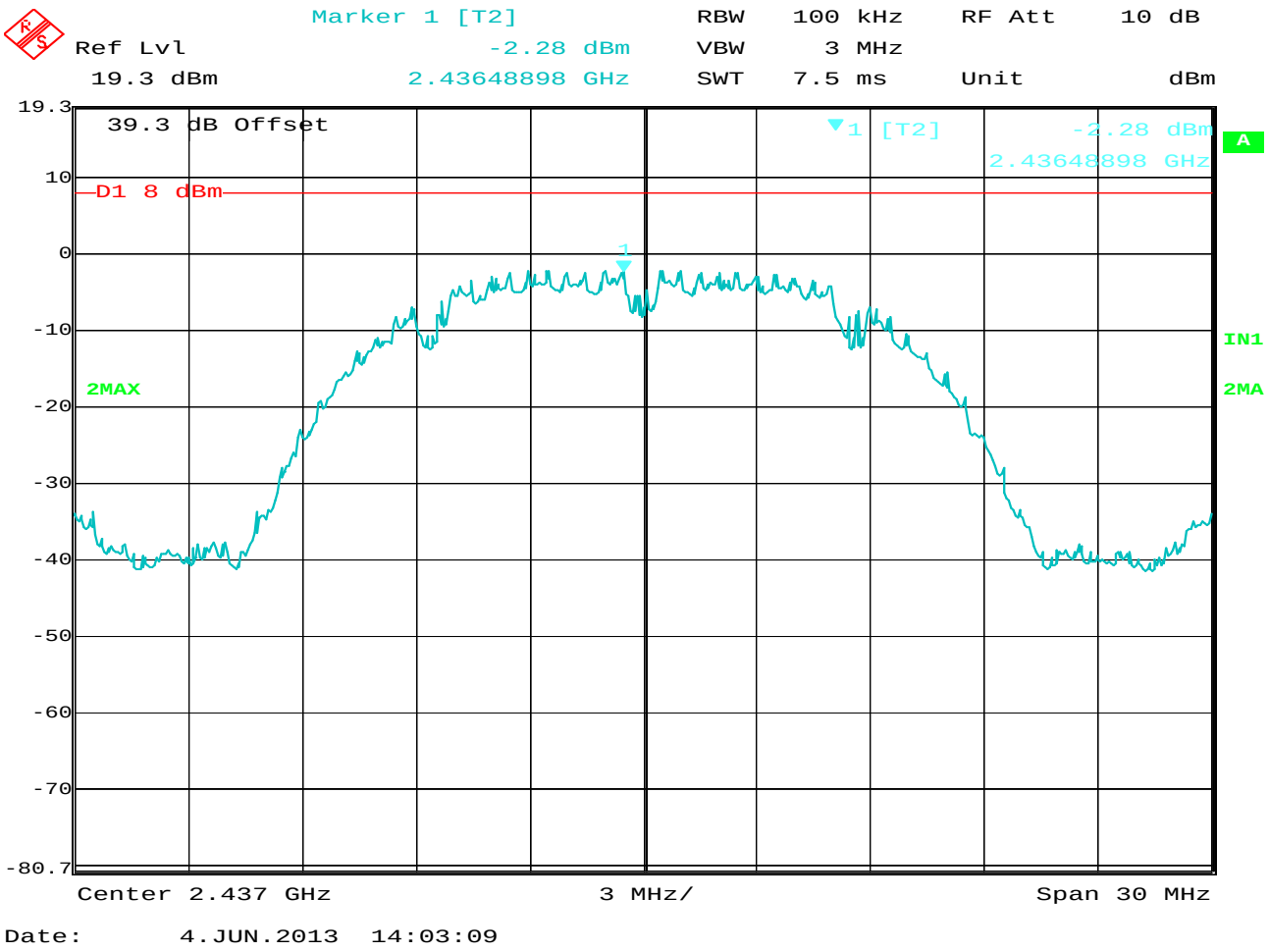
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 2Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



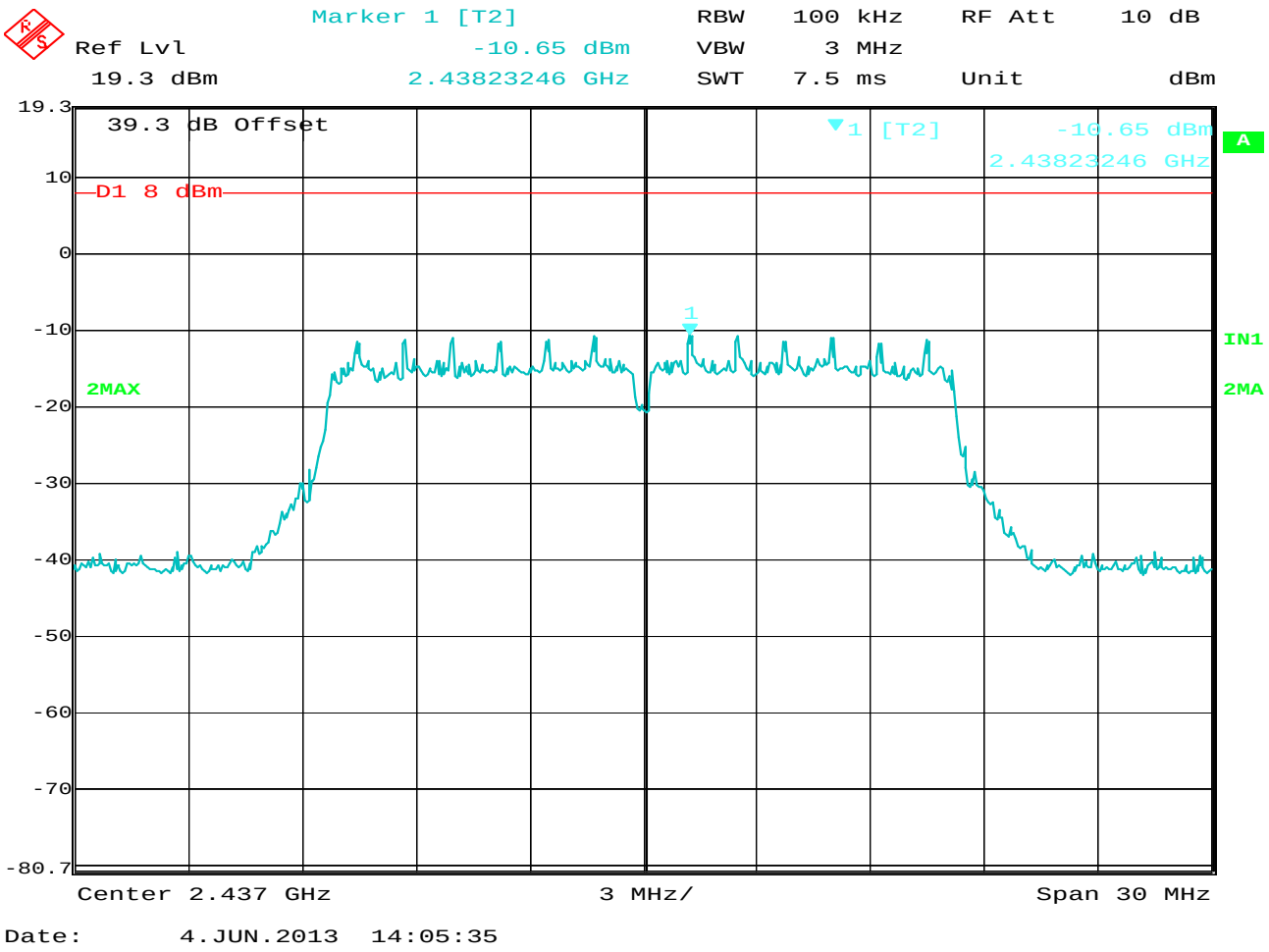
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 5.5Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



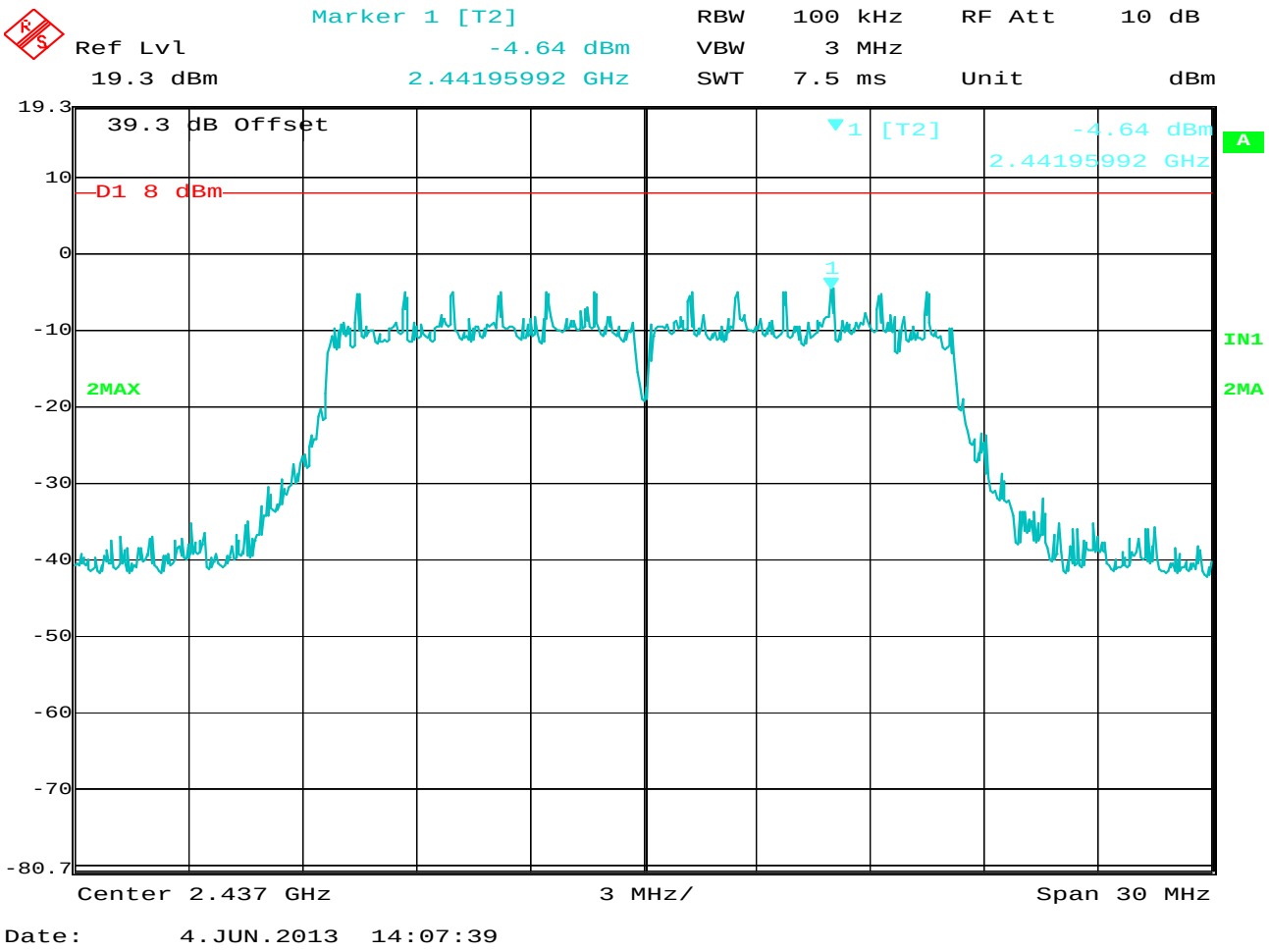
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 11Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



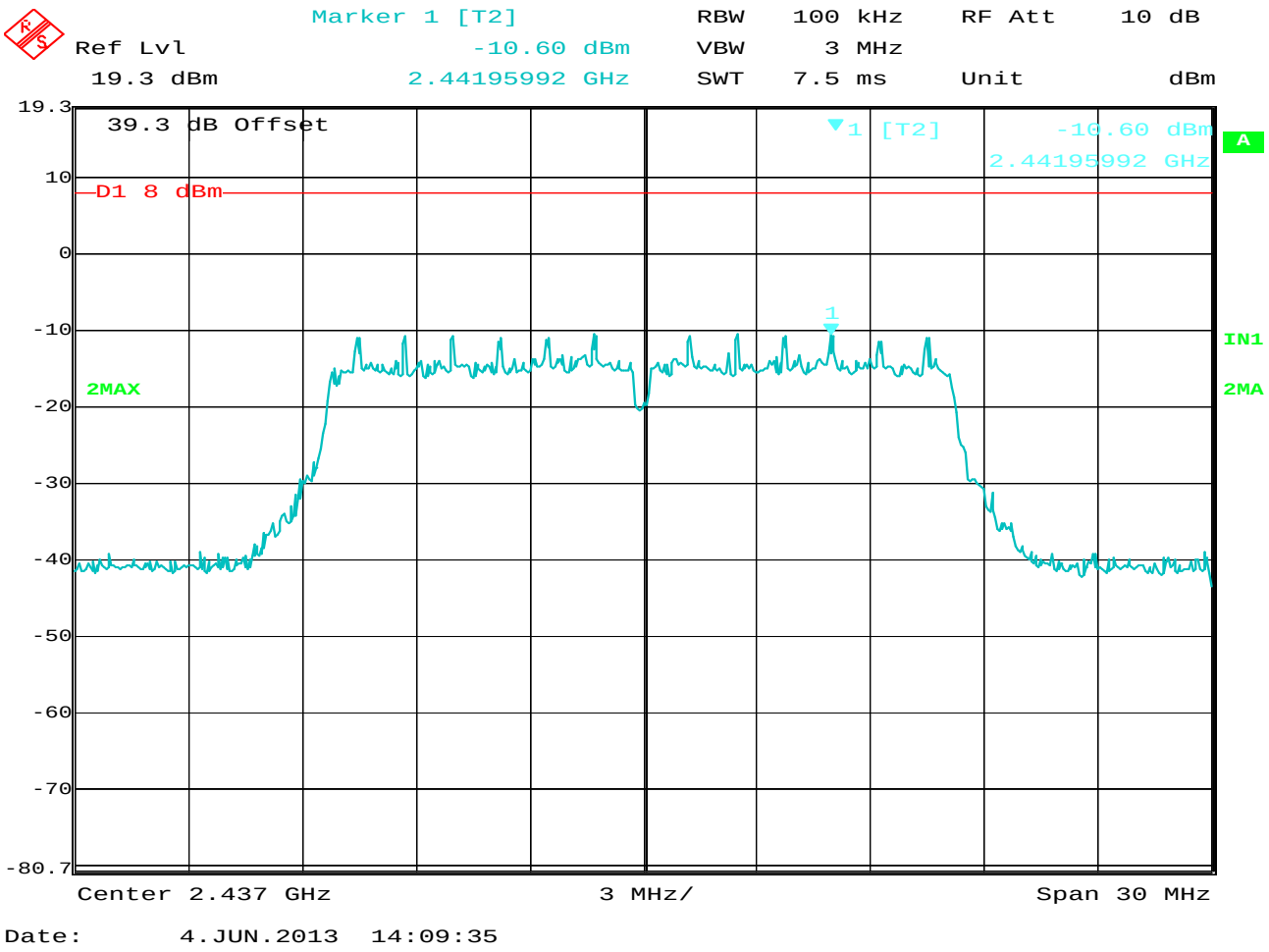
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 6 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



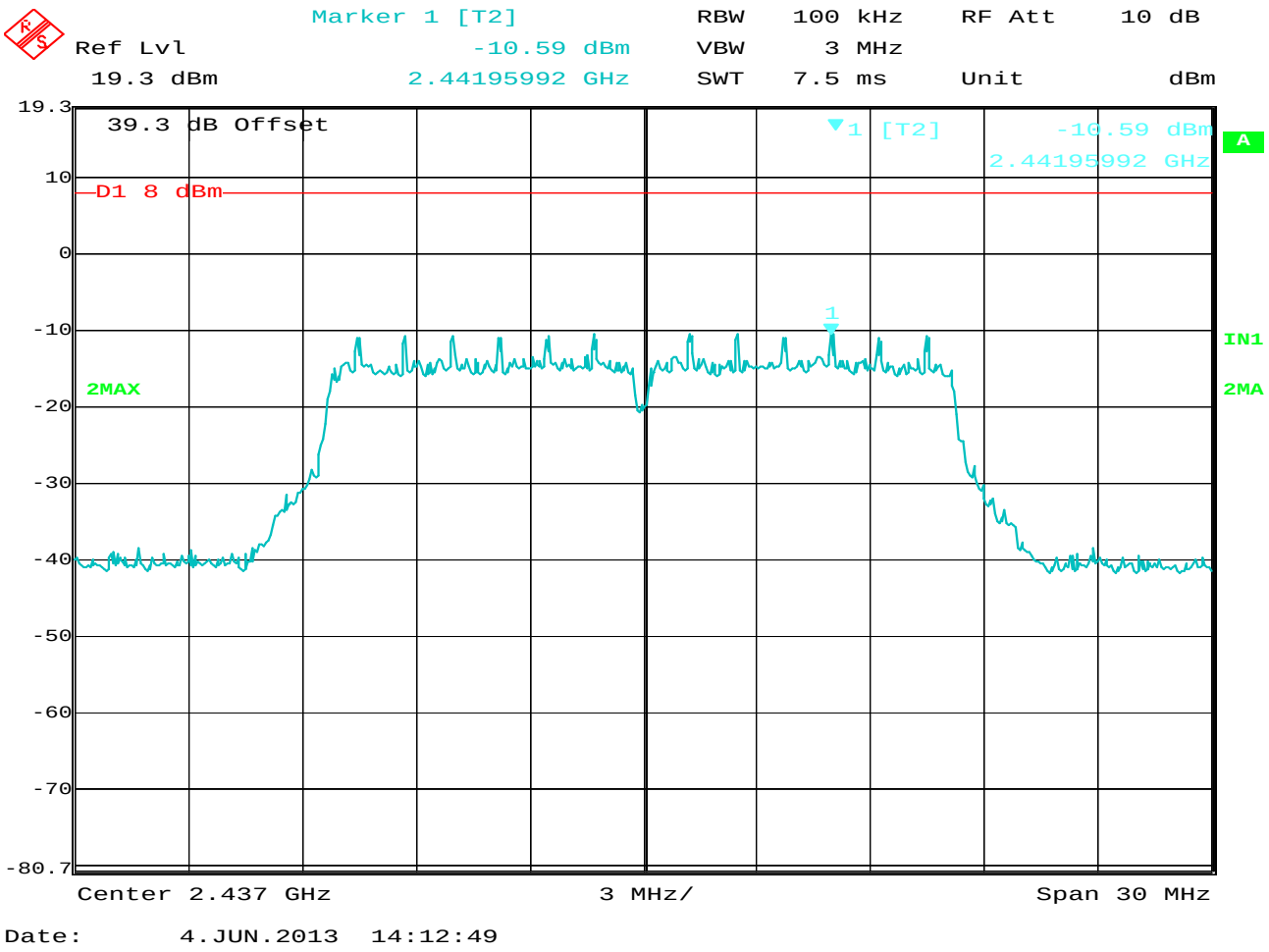
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 9 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



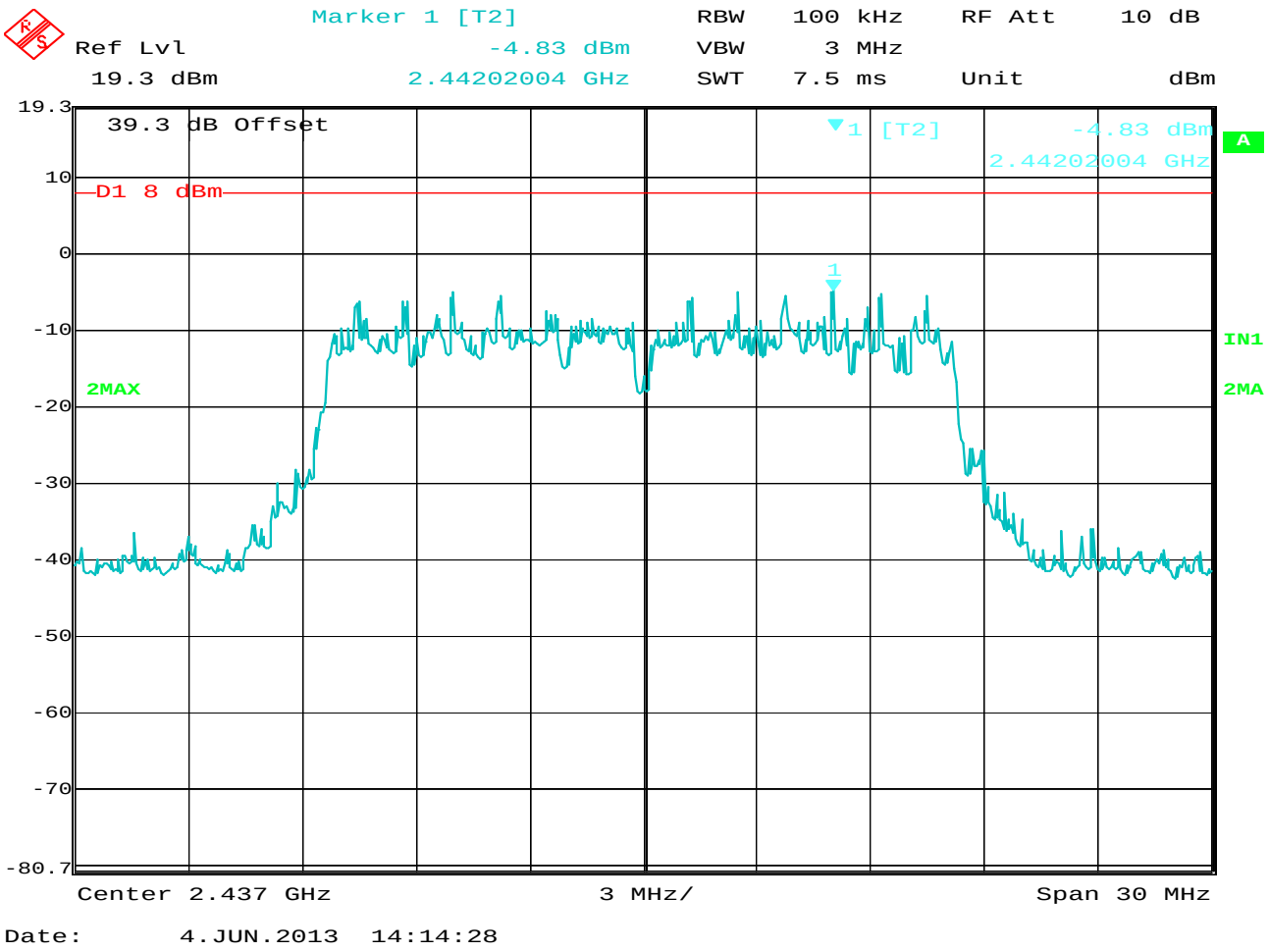
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 12 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



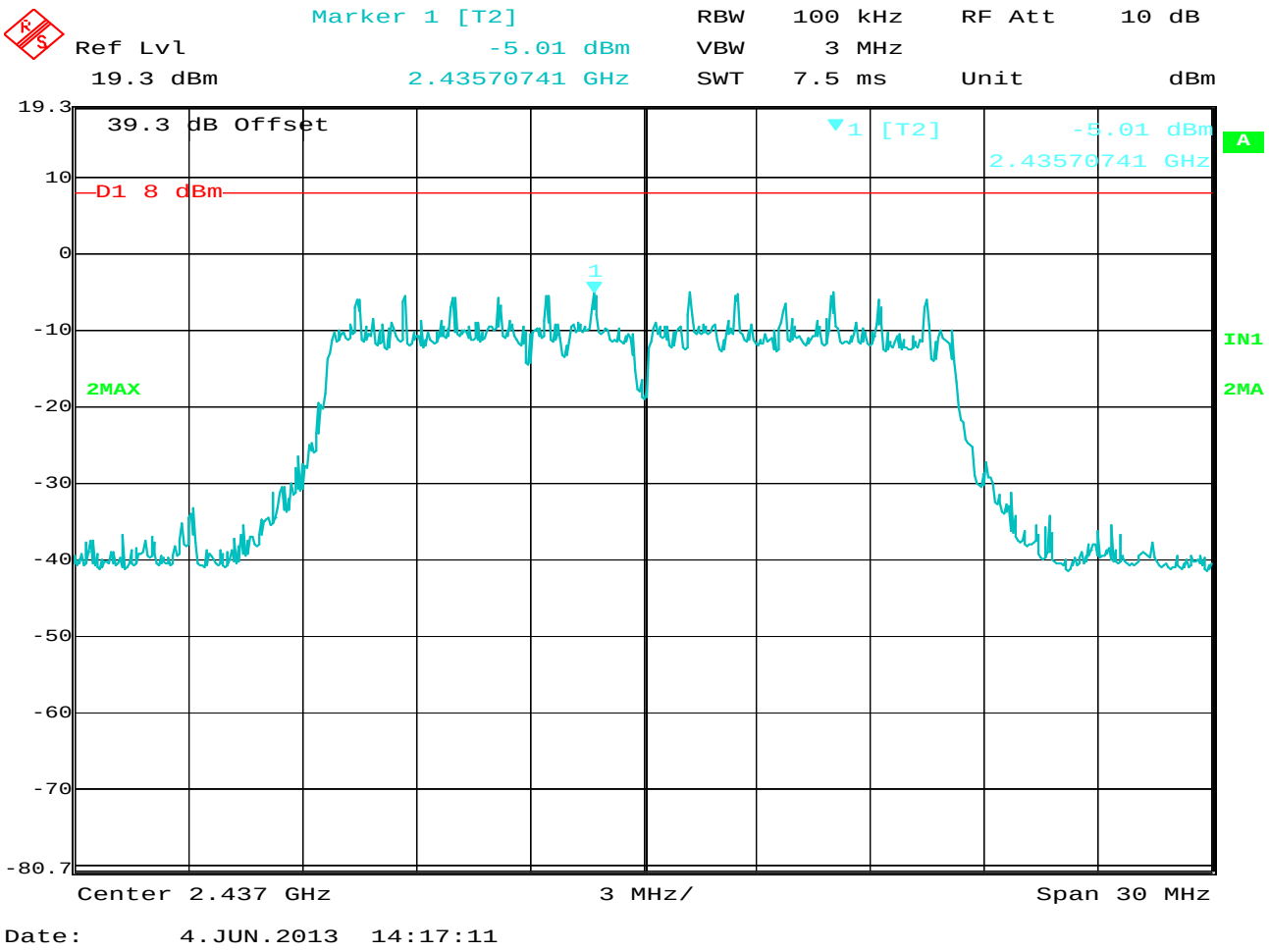
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 18 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



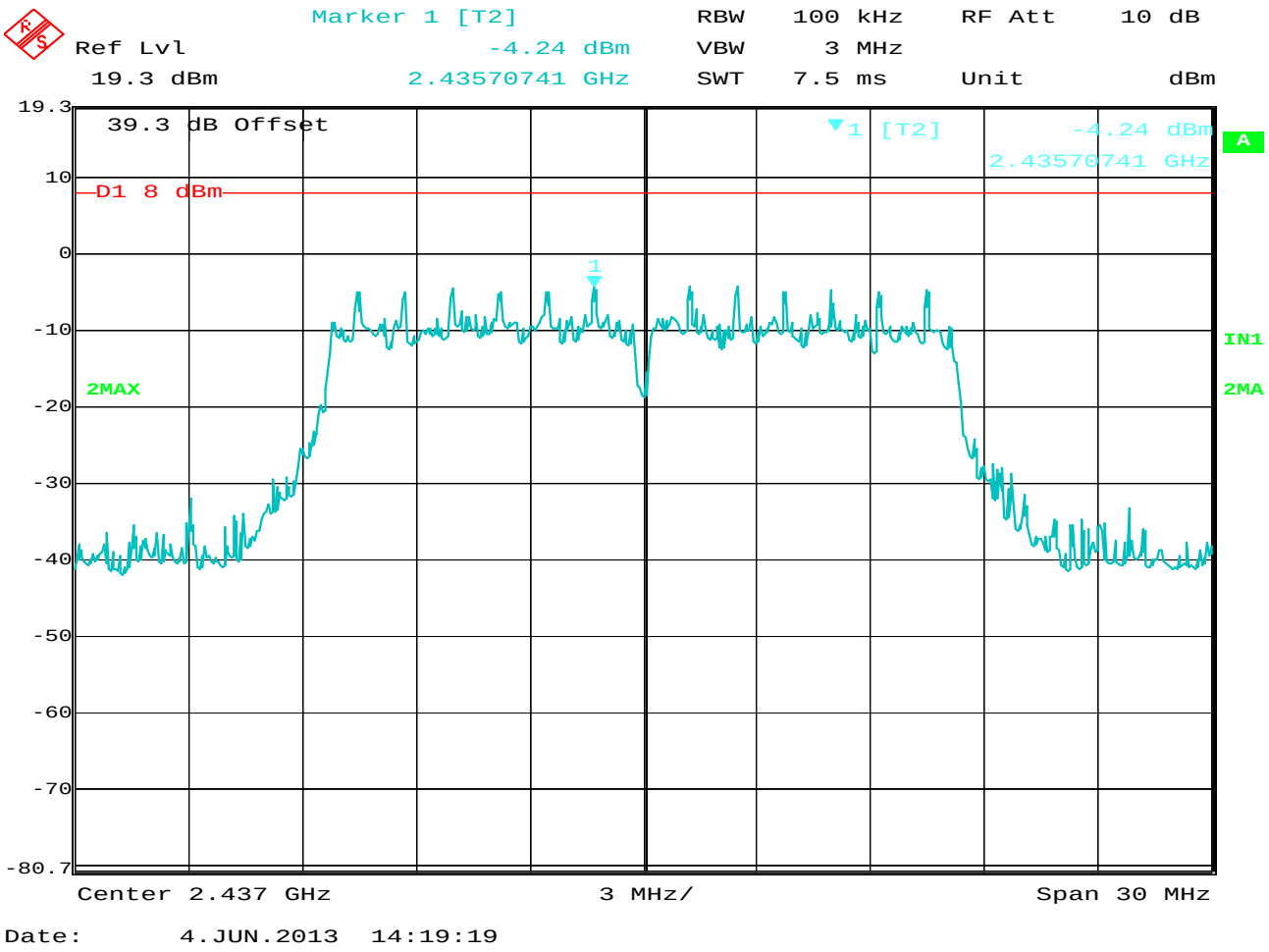
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 24 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



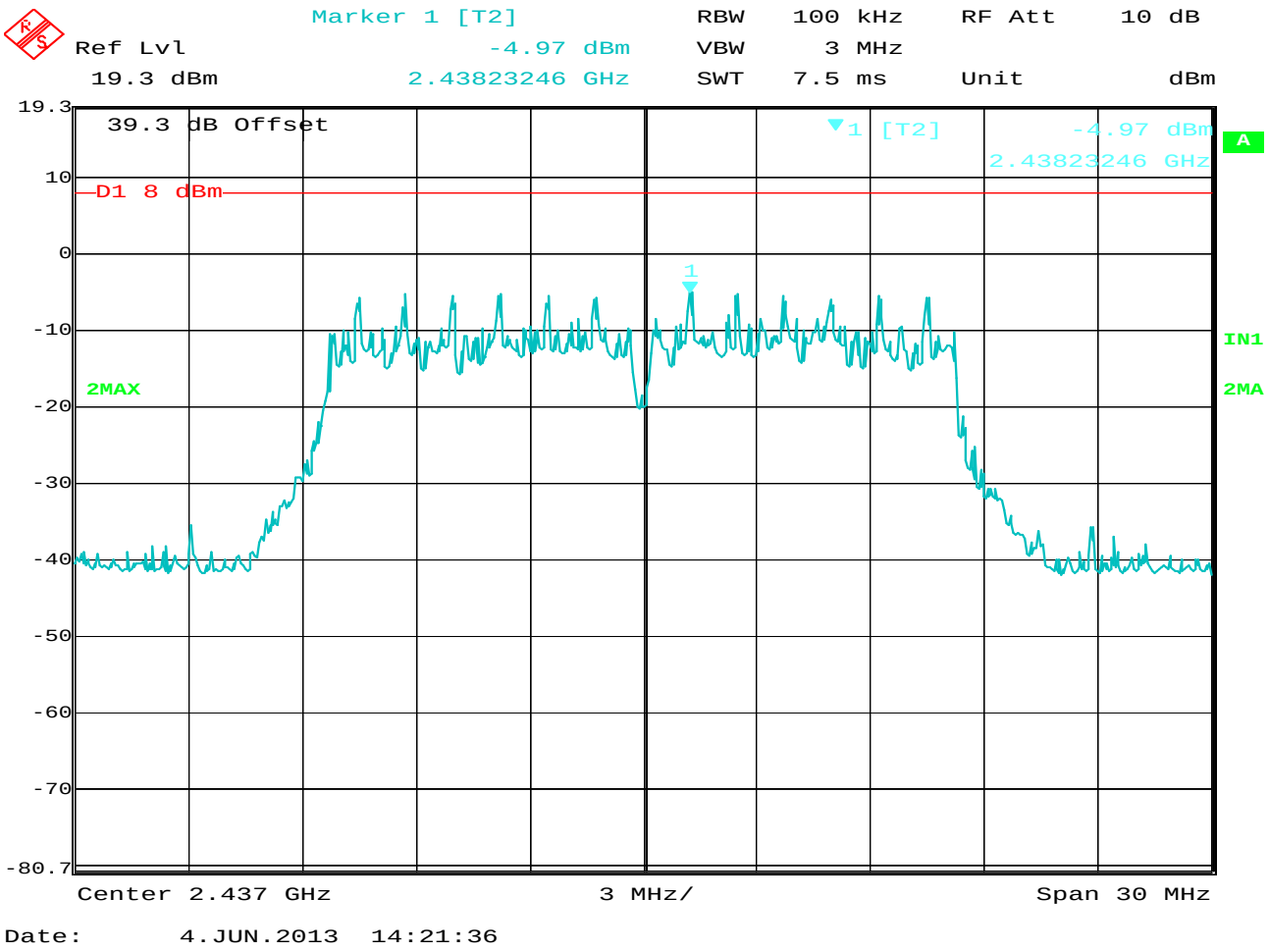
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 36 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



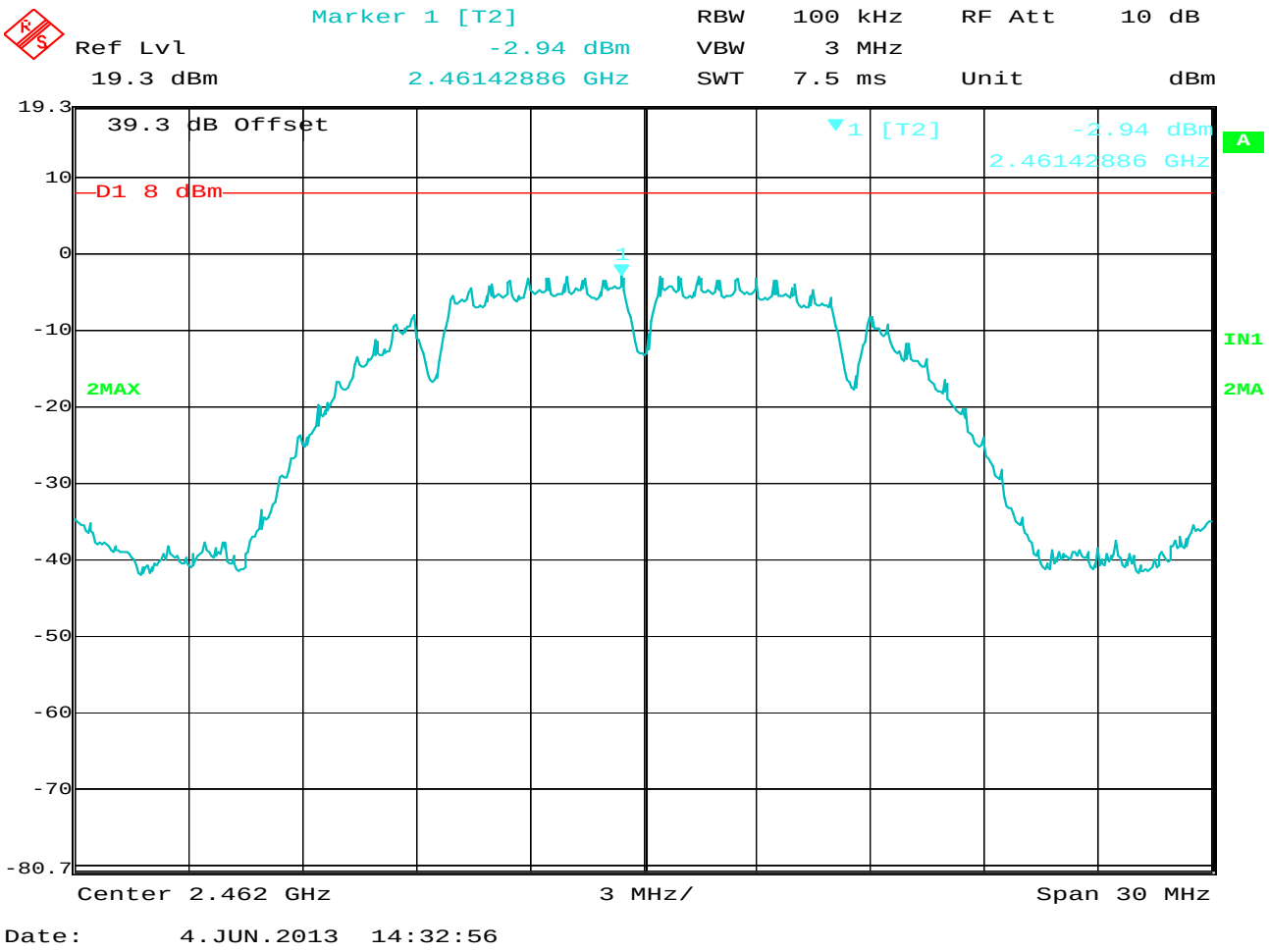
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 48 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



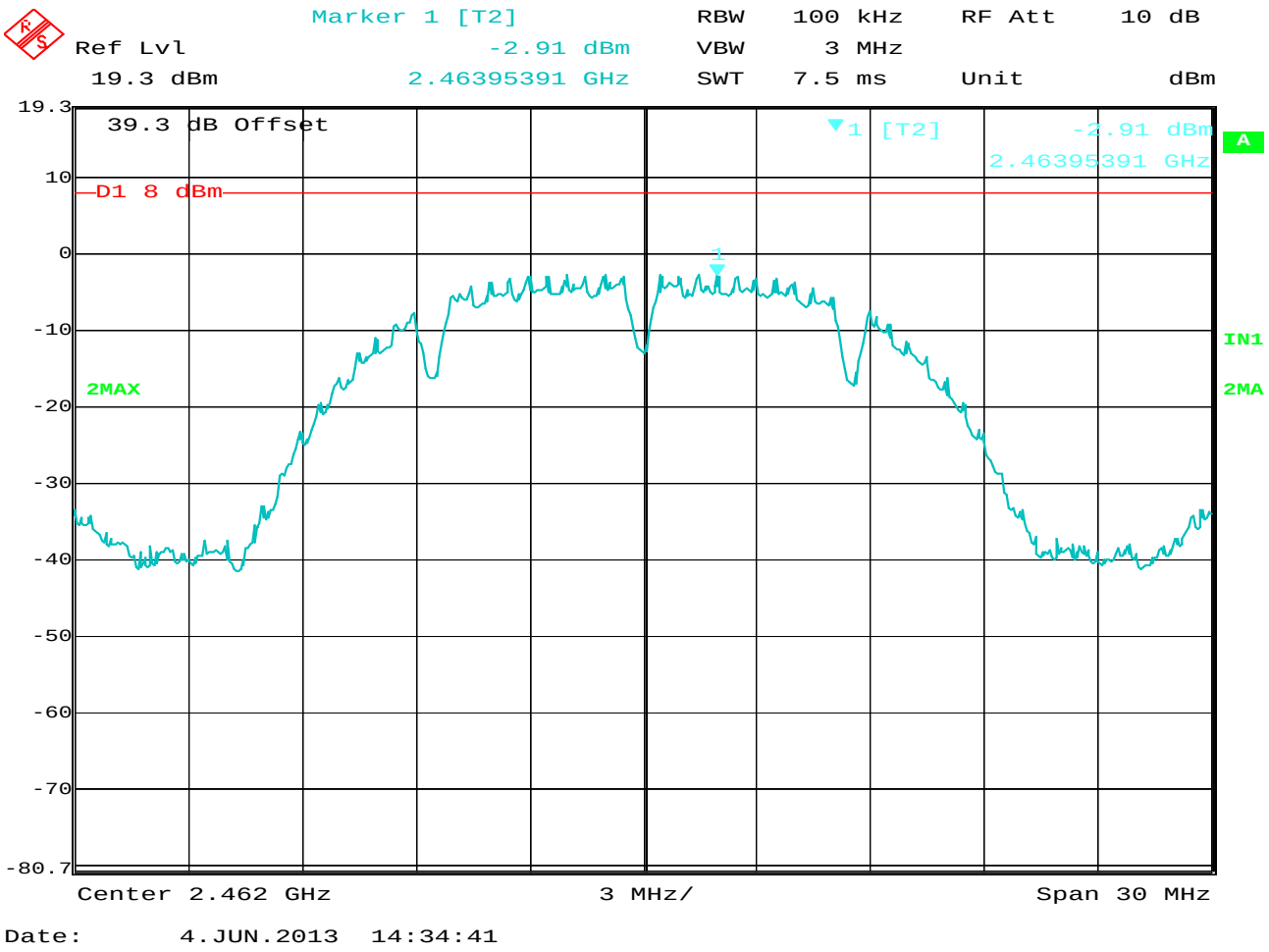
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.437GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 54 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



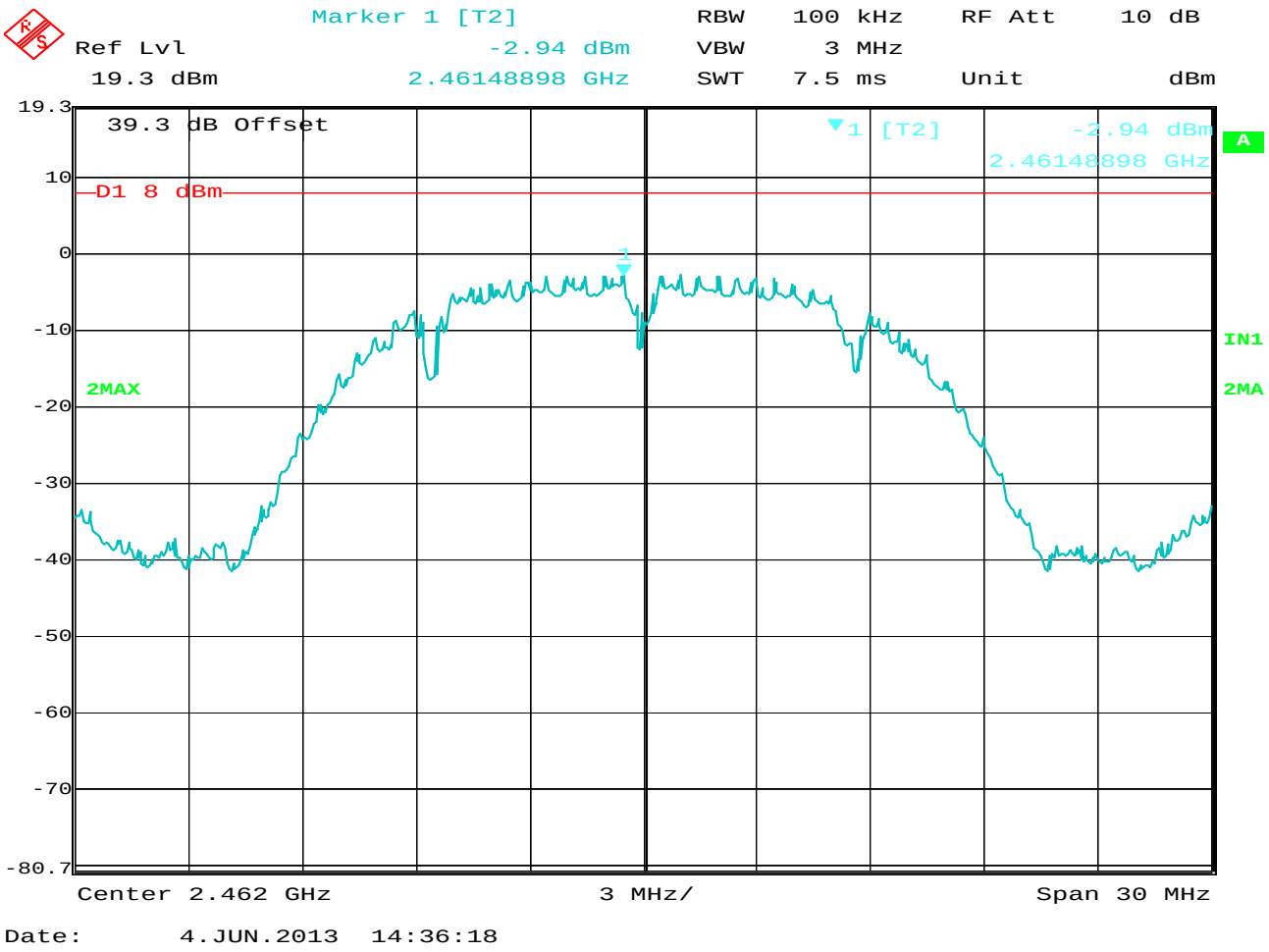
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 1 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



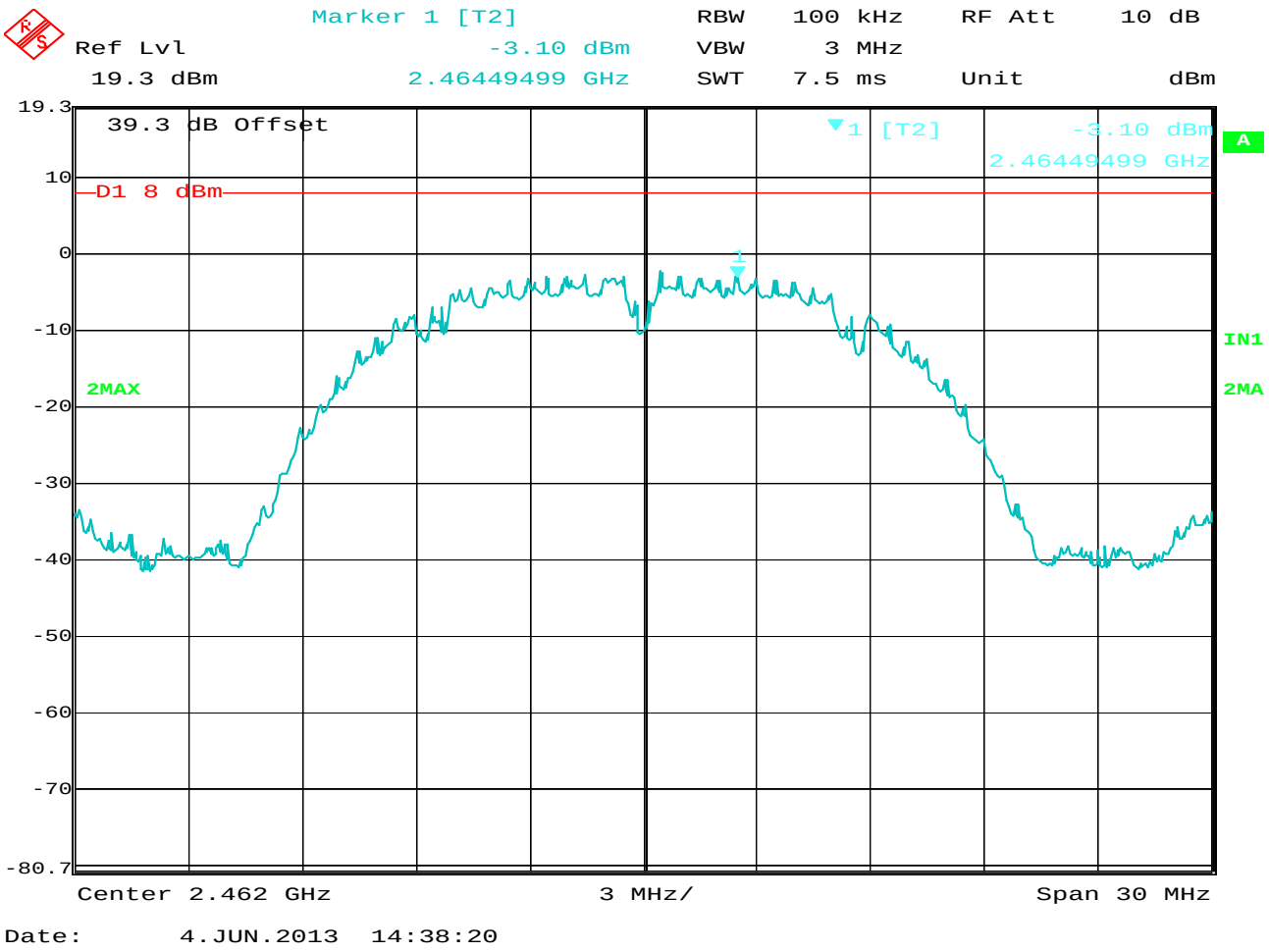
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 2 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



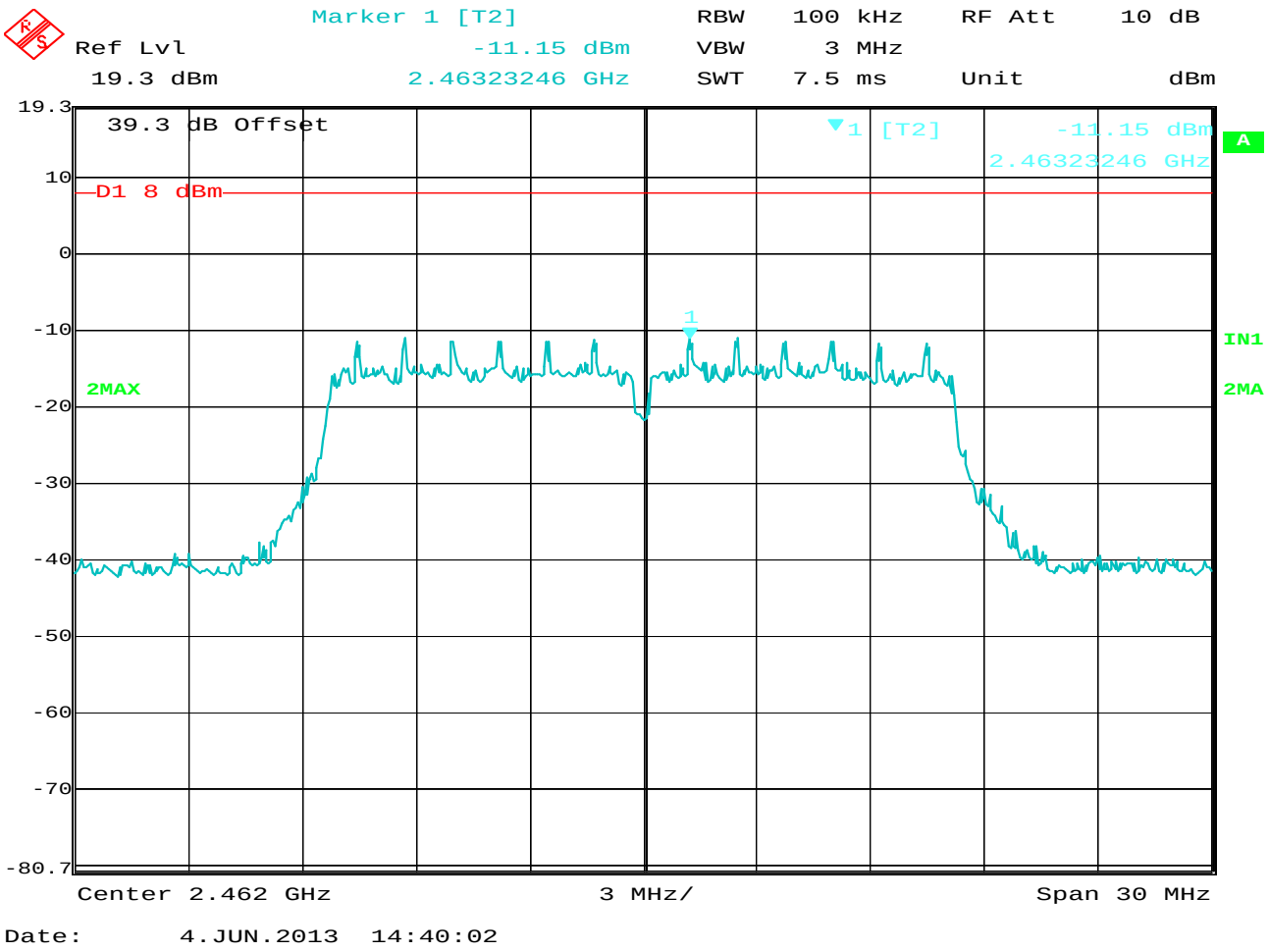
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 5.5 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



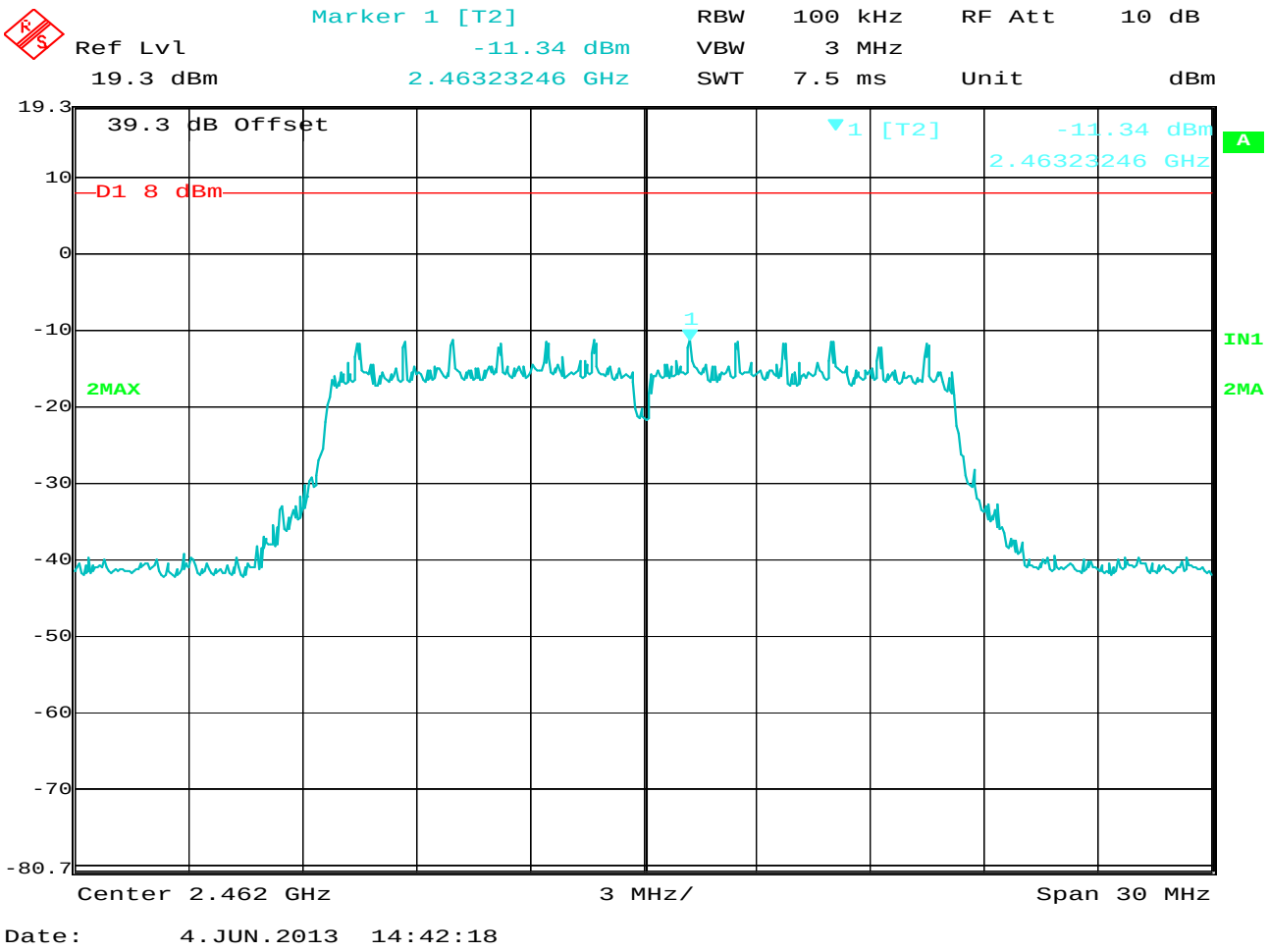
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11b, 11 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



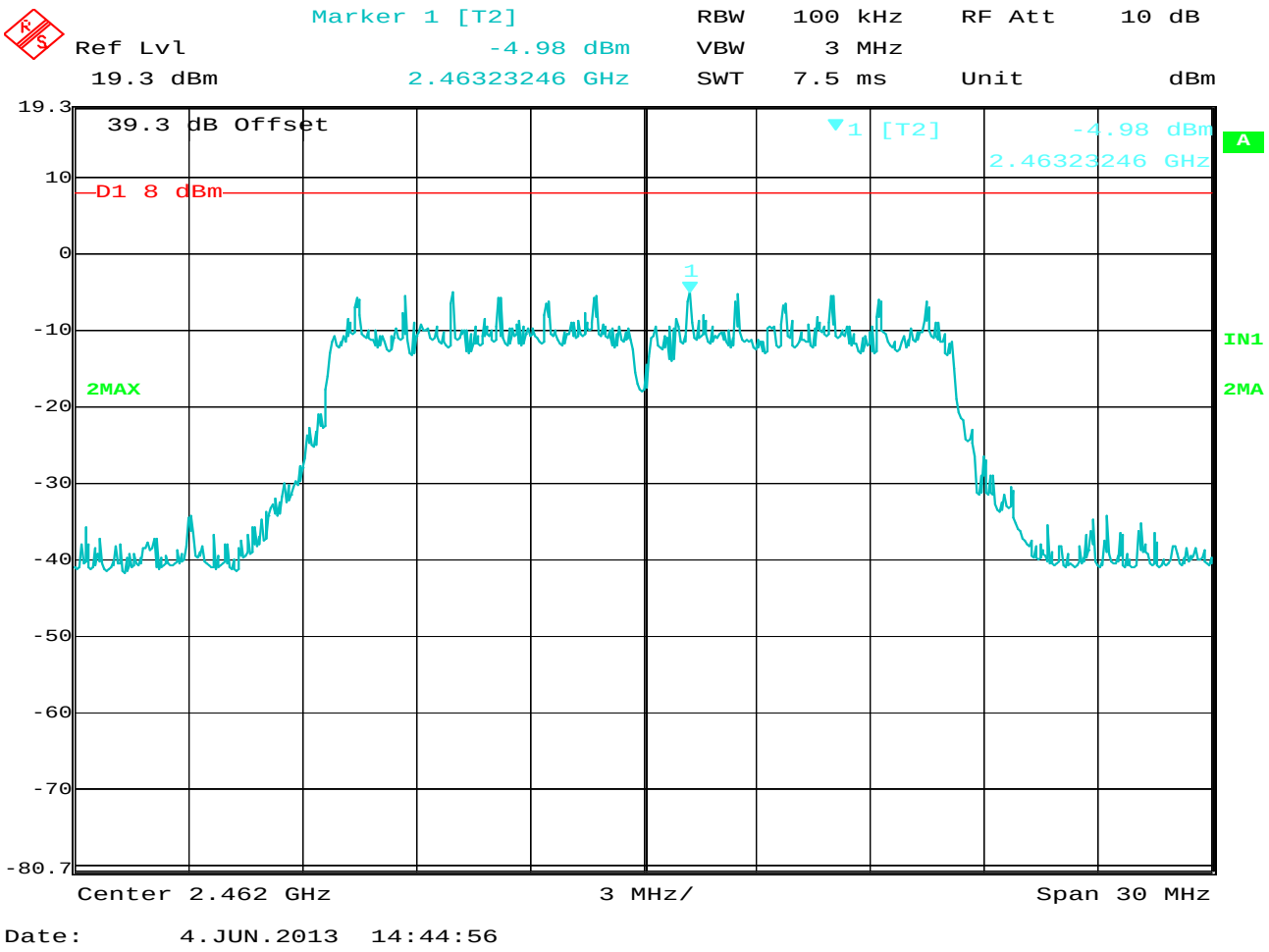
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 6 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



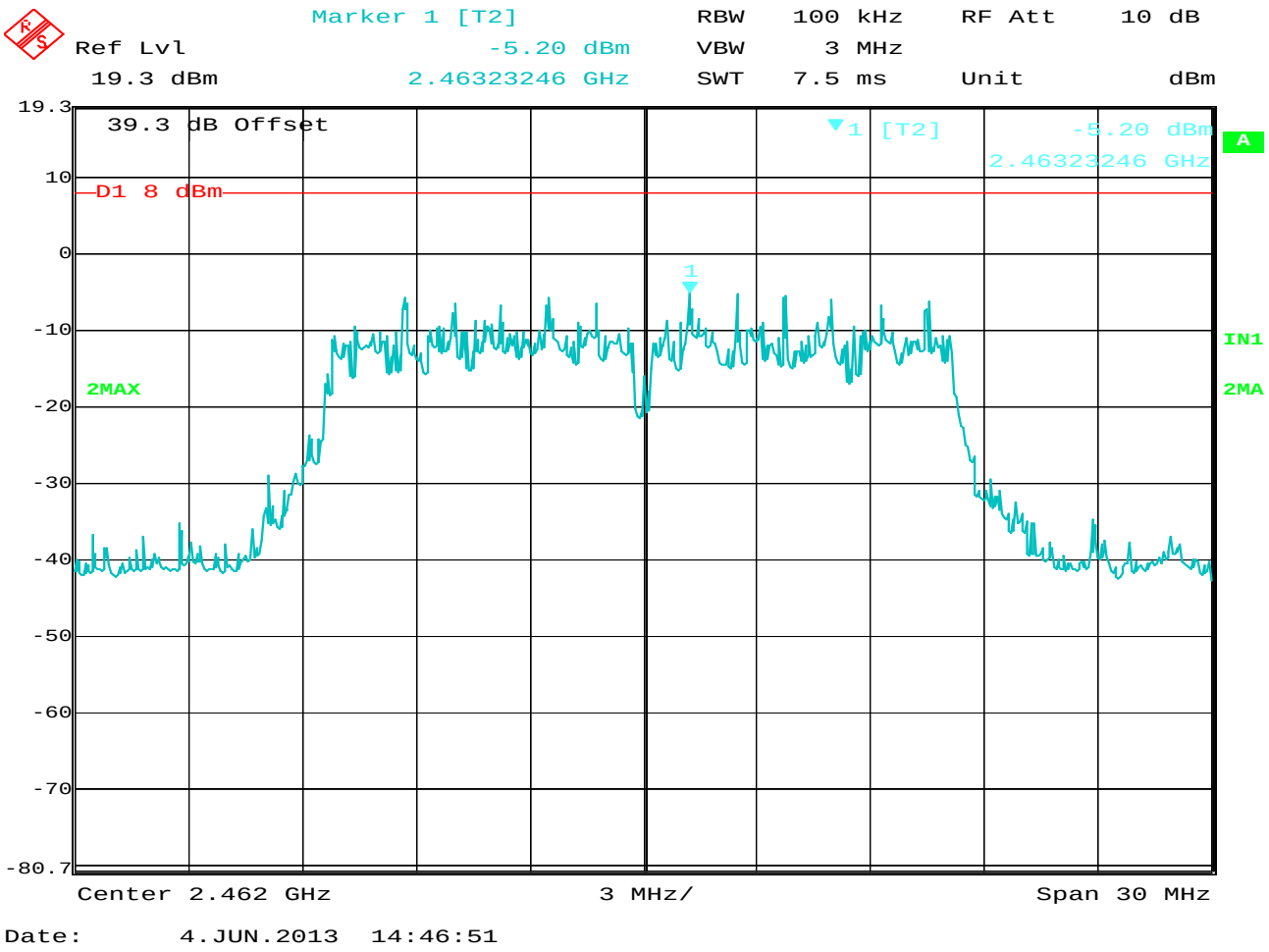
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 9 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



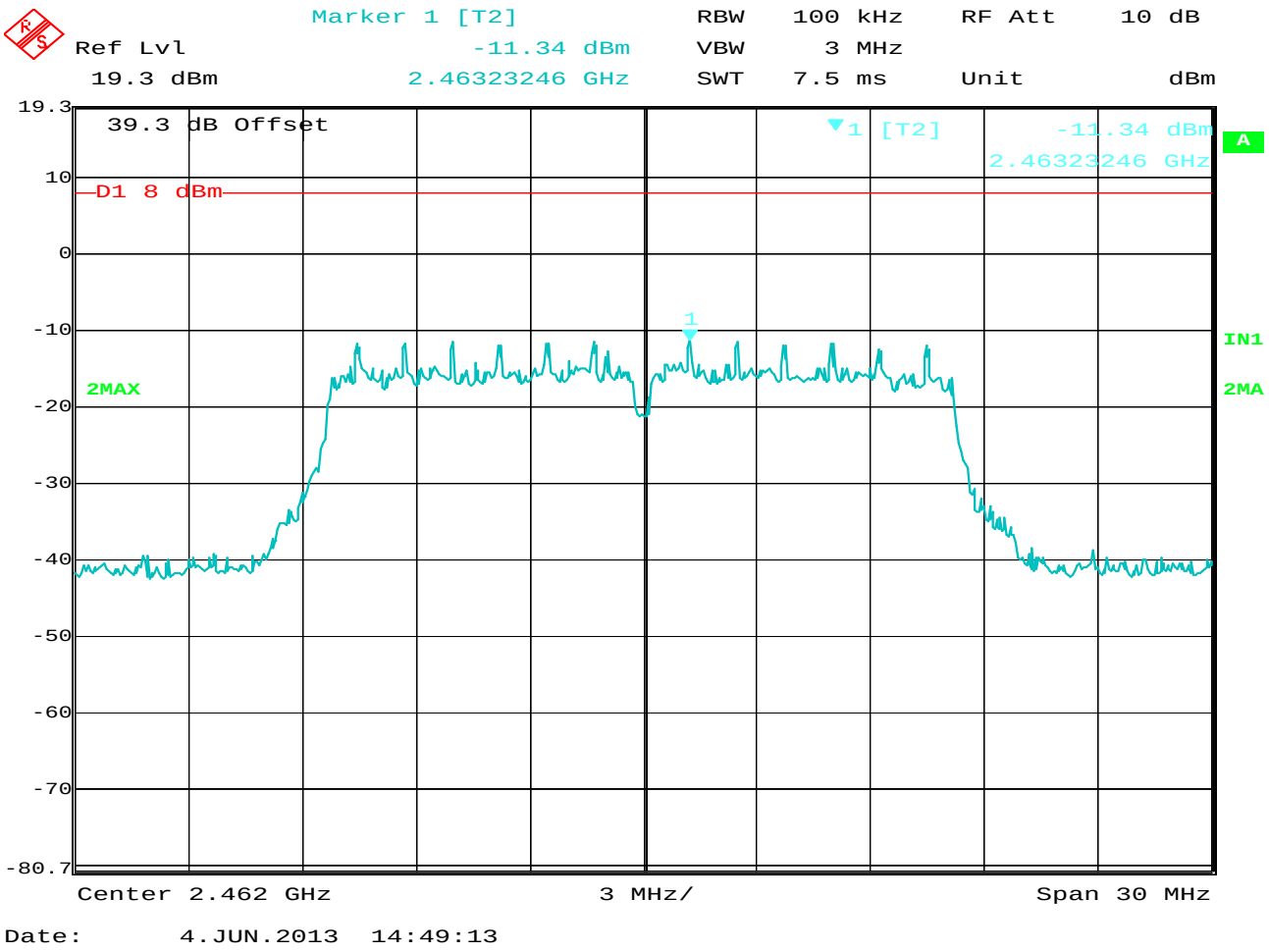
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 12 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



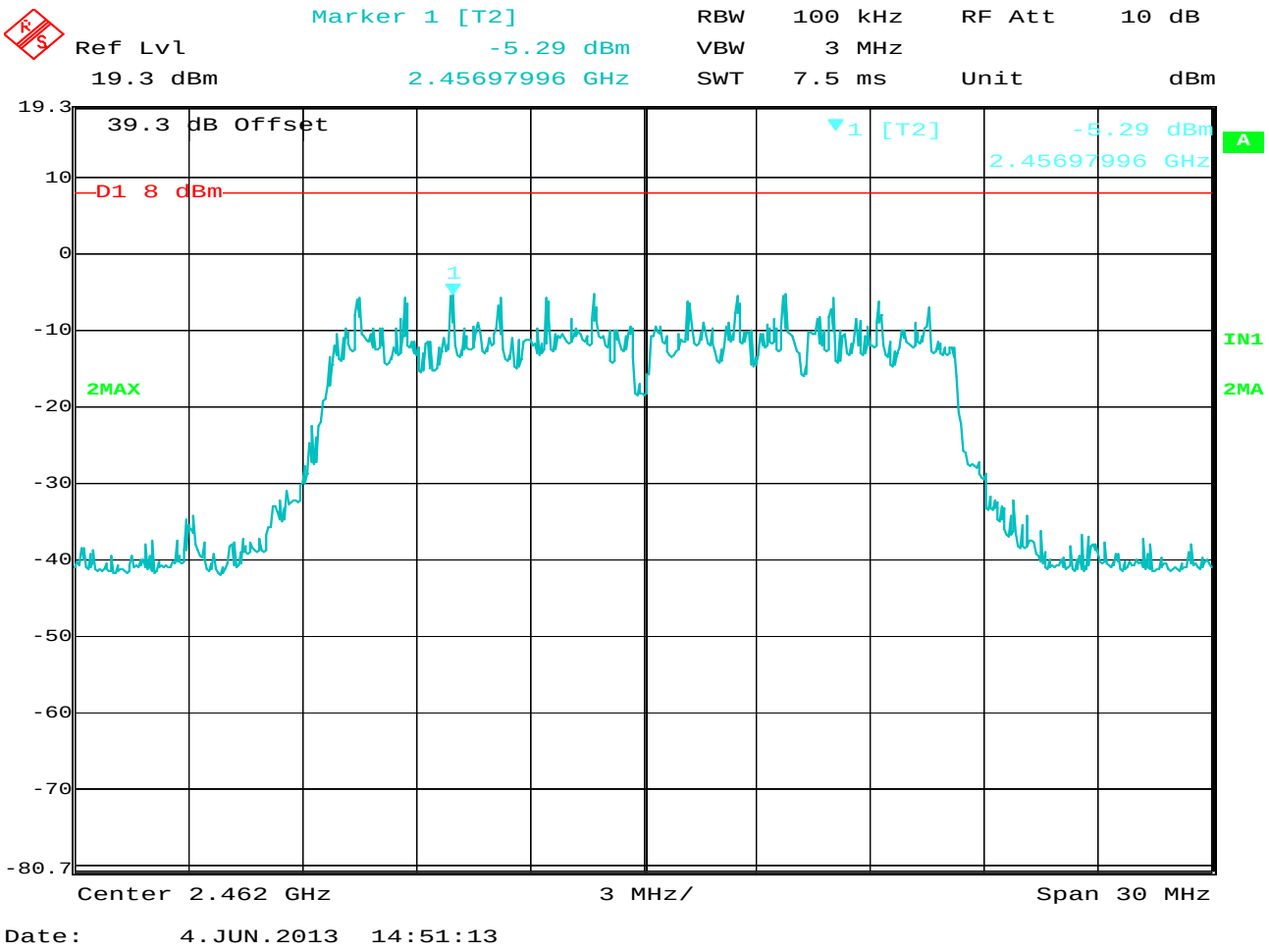
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 18 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



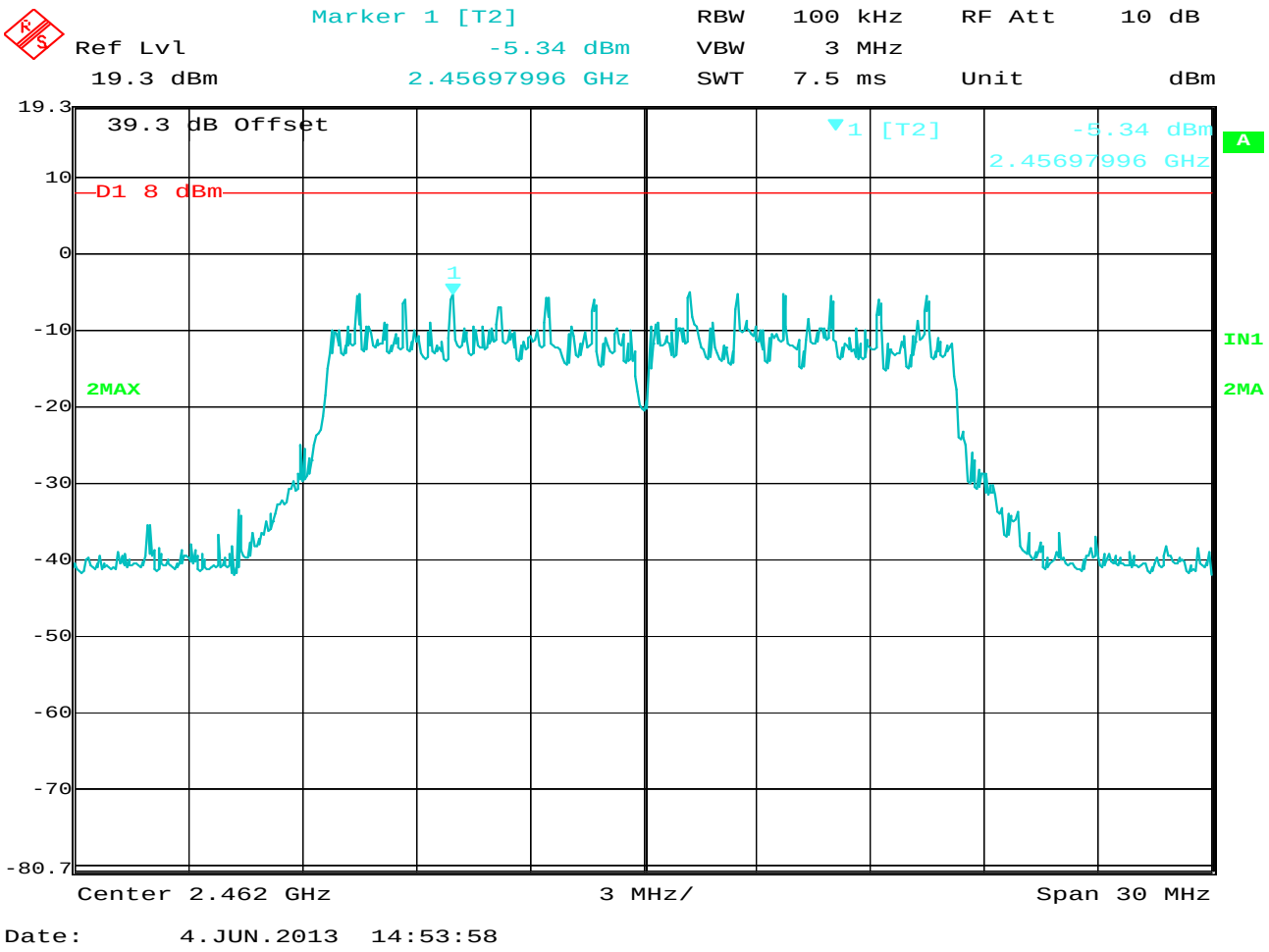
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 24 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



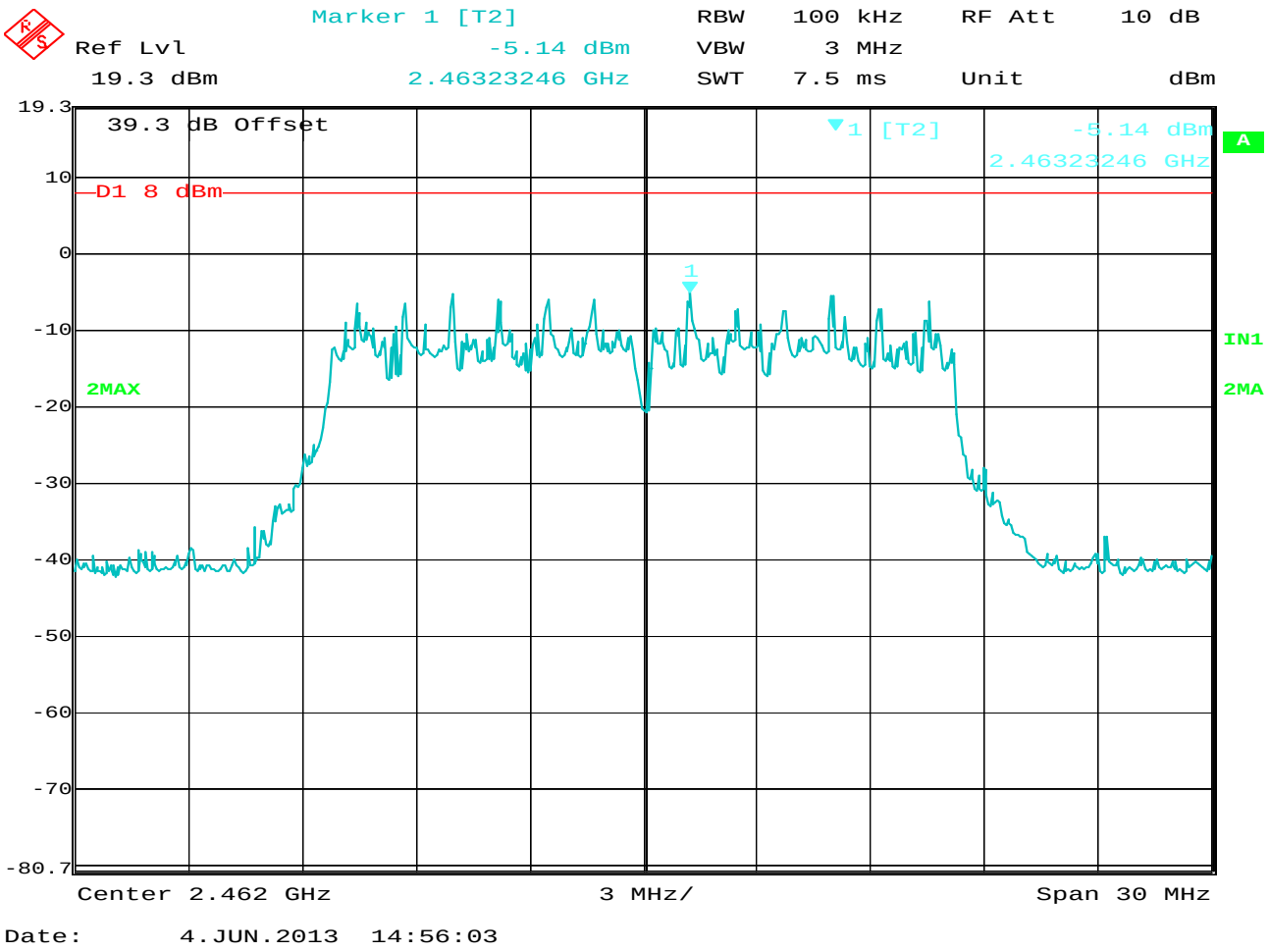
Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 36 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 48 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6



Power Spectral Density

MANUFACTURER	:	Life Shadow
MODEL NUMBER	:	LSM01
SERIAL NUMBER	:	None Assigned
TEST MODE	:	Tx @ 2.462GHz
TEST DATE	:	June 4, 2013
TEST PARAMETERS	:	Power Spectral Density
NOTES	:	802.11g, 54 Mb/s
EQUIPMENT USED	:	RBB0, T2S3,T2S6