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FCC PART 15.247 & IC RSS-247

900MHz FHSS

TEST REPORT

| | |
|-------------------------|------------------------------------|
| Applicant | VERDANT ENVIRONMENTAL TECHNOLOGIES |
| Address | 1850 55E AVENUE |
| | |
| | LACHINE QUEBEC H8T 3J5 CANADA |
| FCC ID | XEYWX |
| IC Certification Number | 8410A-WX |
| Model Number | WX, VX |
| Product Description | THERMOSTAT |
| Date Sample Received | 9/25/2017 |
| Final Test Date | 10/2/2017 |
| Tested By | Tim Royer |
| Approved By | Sid Sanders |

| Report Number | Version Number | Description | Issue Date |
|---------------------|----------------|---------------|------------|
| 871AYUT17TestReport | Rev1 | Initial Issue | 10/3/2017 |

**THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL
WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.**

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GENERAL REMARKS

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Summary

The device under test does:

- ☒ Fulfill the general approval requirements as identified in this test report and was selected by the customer.
- ☐ Not fulfill the general approval requirements as identified in this test report

Attestations

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.

I attest that the necessary measurements were made at:

Timco Engineering Inc.
849 NW State Road 45
Newberry, FL 32669



Tested by:

Name and Title: Tim Royer, Project Manager/Testing Engineer

Date: 10/02/2017



Reviewed and approved by: Name and Title: Sid Sanders, Engineer

Date: 10/03/17

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
FCC ID: XEYWX
IC: 8410A-WX
Report: 871YAAUT17TestReport_Rev1

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GENERAL INFORMATION

EUT Specification

| | | | |
|--------------------------------|---|--|-------------------------------------|
| Regulatory Standards | FCC Title 47 CFR Part 15.247 IC RSS-247 Issue 1 & RSS-GEN Issue 4 | | |
| FCC ID | XEYWX | | |
| IC Certification Number | 8410A-WX | | |
| Model | WX, VX | | |
| EUT Description | THERMOSTAT | | |
| Modulation Types | FHSS | | |
| Operating Frequency | TX: 902 - 928 MHz | RX: 902 – 928 MHz | |
| EUT Power Source | <input type="checkbox"/> 110–120Vac/50– 60Hz | | |
| | <input type="checkbox"/> DC Power | | |
| | <input checked="" type="checkbox"/> Battery Operated Exclusively | | |
| Test Item | <input type="checkbox"/> Prototype | <input checked="" type="checkbox"/> Pre-Production | <input type="checkbox"/> Production |
| Type of Equipment | <input checked="" type="checkbox"/> Fixed | <input type="checkbox"/> Mobile | <input type="checkbox"/> Portable |
| Antenna Connector | None (Temporary Connector Provided for Testing) | | |
| Antenna | Copper Wire Antenna | | |
| Test Facility | Timco Engineering Inc. located at 849 NW State Road 45 Newberry, FL 32669 USA. | | |
| Test Conditions | Temperature: 24-26°C Relative humidity: 50-65% | | |
| Measurement Standard | ANSI C63.10-2013 FCC DA 00-705 ANSI C63.4-2014 (Radiated Site Validation) | | |
| Test Exercise | The EUT was powered on and tuned to 3 places in the band. | | |

Test Supporting Equipment

| Device | Manufacturer | Model | S/N | Supplied By | Used For |
|--------|--------------|-------|-----|-------------|----------|
| N/A | | | | | |

RESULTS SUMMARY

| FCC Rule Part No. | IC Standard Ref. | Requirement | Test Item | Result |
|---------------------|------------------|--------------------|--------------------------------|--------|
| 15.215 (c) | RSS-GEN 6.6 | Occupied Bandwidth | 99% Bandwidth | Pass |
| | | | 20 dB Bandwidth | Pass |
| 15.247(a,1) | RSS-247 § 5.1 | FHSS Requirements | Channel Separation | Pass |
| | | | Hopping Sequence | Pass |
| | | | System Receiver Bandwidth | Pass |
| | | | Number of Hopping Channels | Pass |
| | | | Hopping Channel Occupancy Time | Pass |
| 15.247(b,1) & (b,4) | RSS-247 § 5.4.2 | Peak Power Output | Peak Power Output (ERP) | Pass |
| | | | Antenna Gain (EIRP) | Pass |
| 15.247(d) | RSS-247 § 5.5 | Unwanted Emissions | Bandedge | Pass |
| | | | Radiated Spurious | Pass |

Notes:

OCCUPIED BANDWIDTH

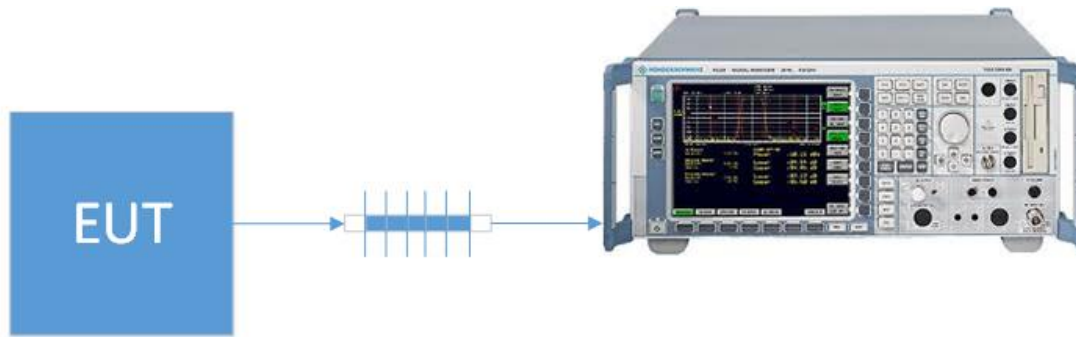
Rules Part No.: FCC 15.215(C), IC RSS 247 § 5.1.1, 5.1.1.3

FCC Requirements: The 20 dB bandwidth of the emission shall be contained within the frequency band designated in the rule section under which the equipment is operated.

IC Requirements: The maximum 20 dB bandwidth shall be 500 KHz

Test Method: ANSI C63.10 § 6.9.2 Occupied bandwidth-20dB Relative procedure

Setup:



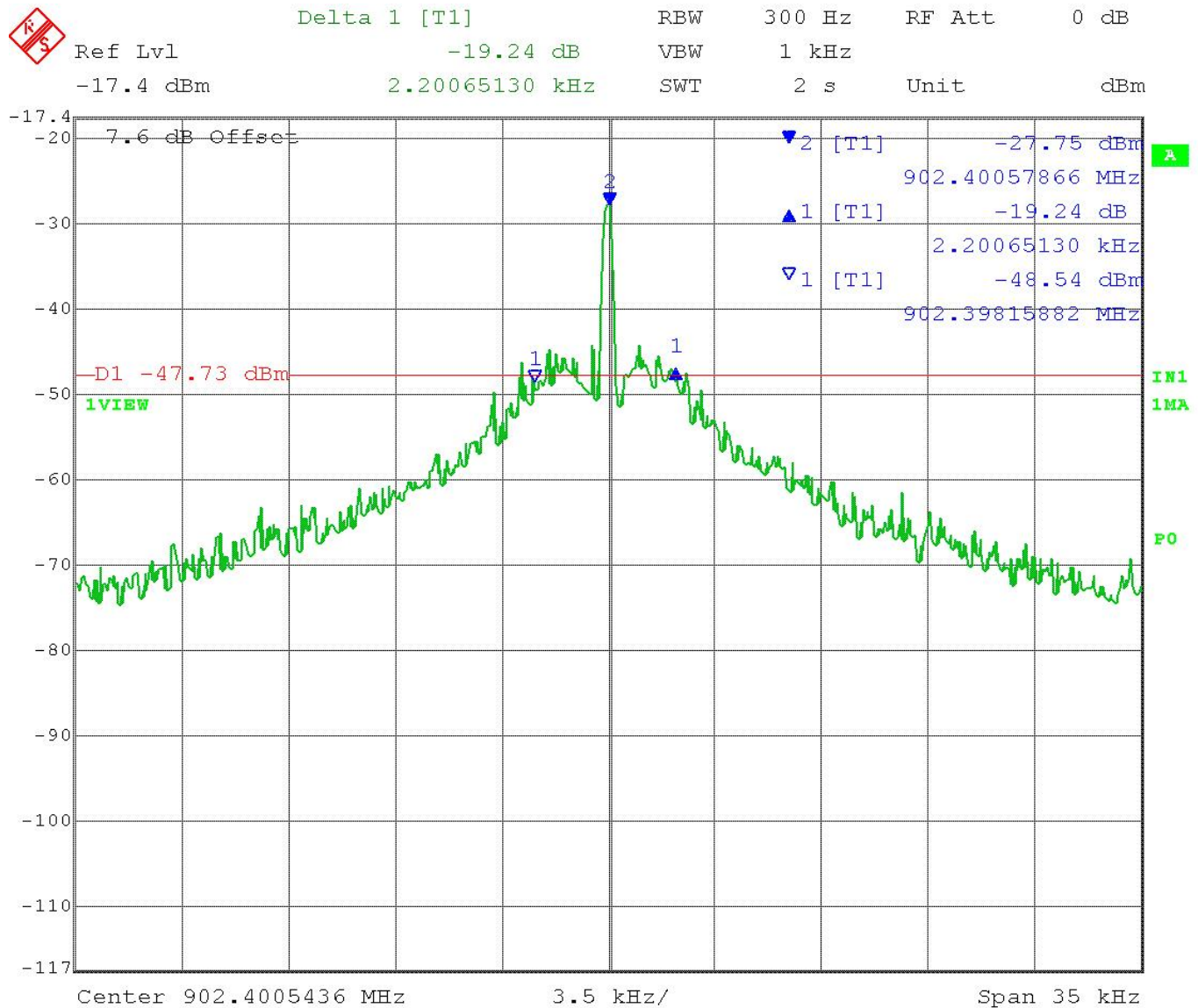
Test Data: 20 dB Occupied Bandwidth Measurement Table

| Tuned Frequency (MHz) | 20 dB BW (KHz) | Limit (KHz) | Margin (KHz) |
|-----------------------|----------------|-------------|--------------|
| 902.4 | 2.2 | ≤ 500 | 497.8 |
| 915 | 5.05 | ≤ 500 | 494.95 |
| 927.6 | 6.58 | ≤ 500 | 493.42 |

RESULTS: Meets Requirements

OCCUPIED BANDWIDTH

Test Data: 20 dB OBW Low End of Band Plot



Date: 2.JUN.2017 08:47:15

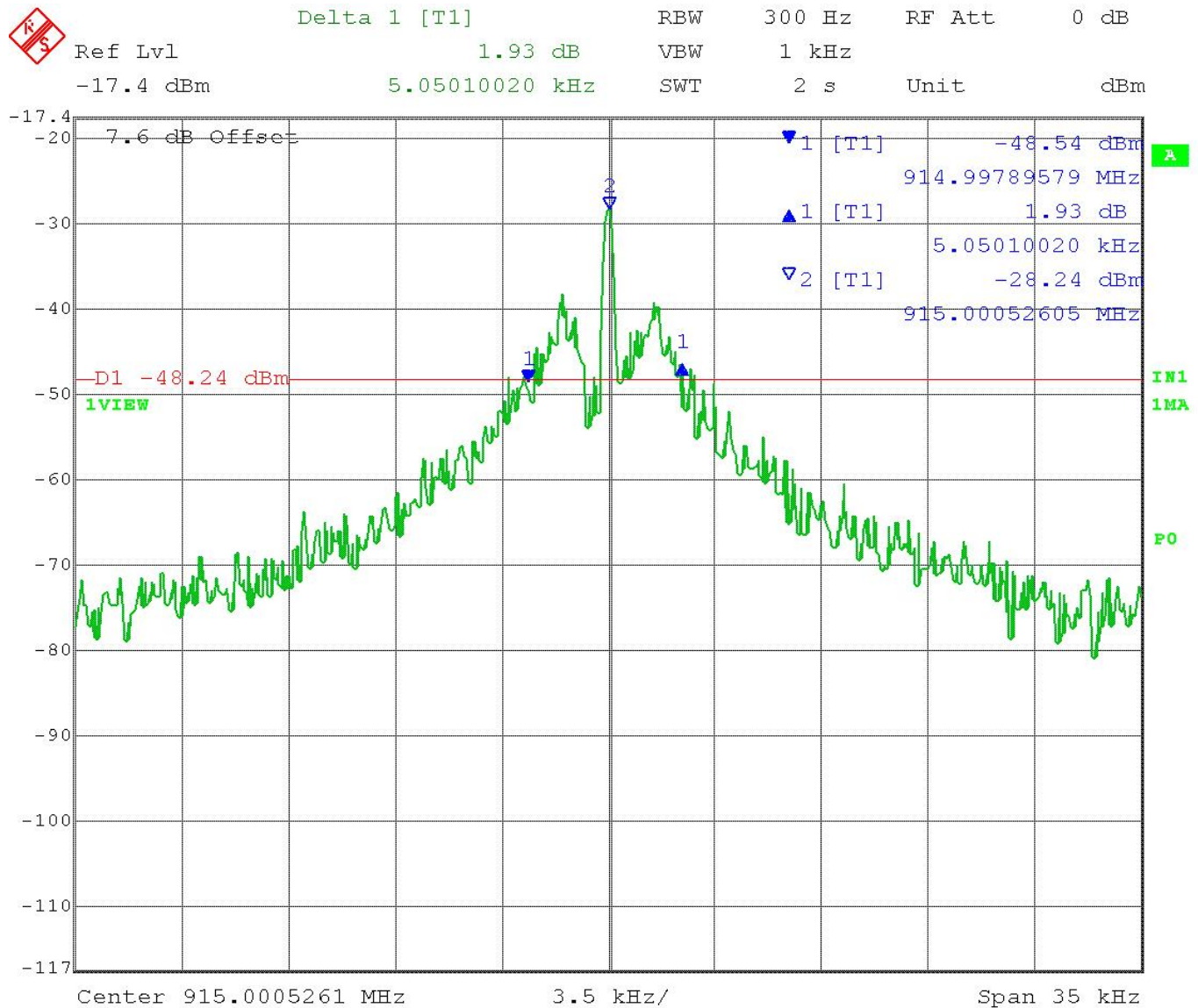
RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
 FCC ID: XEYWX
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OCCUPIED BANDWIDTH

Test Data: 20 dB OBW Middle of Band Plot



Date: 2.JUN.2017 08:48:38

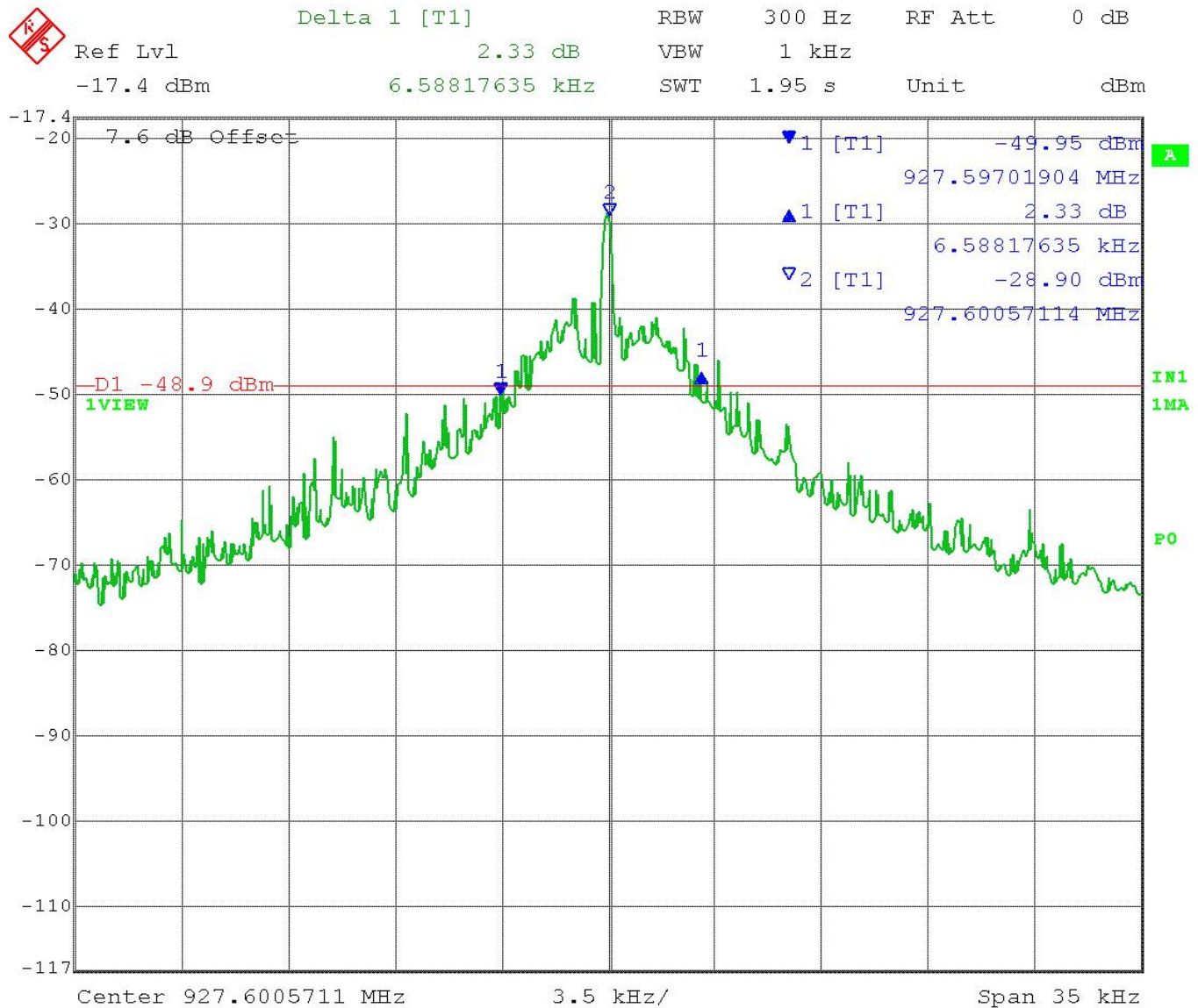
RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
FCC ID: XEYWX
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OCCUPIED BANDWIDTH

Test Data: 20 dB OBW High end of Band Plot



Date: 2.JUN.2017 08:06:32

RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
 FCC ID: XEYWX
 IC: 8410A-WX
 Report: 871YAAUT17TestReport_Rev1

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OCCUPIED BANDWIDTH FHSS REQUIREMENTS

Rules Part No.: FCC 15.247(a)(1), IC RSS 247 § 5.1.1, 5.1.2, 5.1.3

Requirements: **Maximum 20 dB Bandwidth**

The bandwidth of a frequency hopping channel is the -20 dB emission bandwidth, measured with the hopping stopped. The maximum 20 dB bandwidth of the hopping channel shall be 500 kHz.

Channel Separation

FHSS shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the -20 dB bandwidth of the hopping channel, whichever is greater.

Dwell Time and Number of Hopping Channels

If the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping channels and the average time of occupancy on any channel shall not be greater than 0.4 seconds within a 20-second period. If the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping channels 0.4 seconds within a 10-second period.

Hopping Sequence

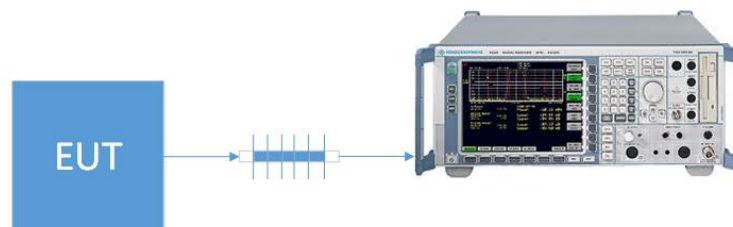
The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset, whereas the long-term distribution appears evenly distributed.

Receiver Input Bandwidth

The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Test Method: ANSI C63.10 § 7.8.2 Carrier frequency separation
ANSI C63.10 § 7.8.3 Number of hopping frequencies
ANSI C63.10 § 7.8.3 Time of Occupancy
DA 00-705 § Pseudorandom Frequency Hopping Sequence
DA 00-705 § Equal Hopping Frequency Use
DA 00-705 § System Receiver Input Bandwidth

Setup:



Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
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FHSS REQUIREMENTS

Test Data: FHSS Channel Separation Measurement Table

| Separation (KHz) | Limit (KHz) | Pass / Fail |
|------------------|-------------|-------------|
| 404.8 | 25 | Pass |

Test Data: Number of Hopping Channels Measurement Table

| Number of channels | Limit | Pass / Fail |
|--------------------|-----------|-------------|
| 64 | ≥ 50 | Pass |

Test Data: Hopping Channel Occupancy Time Measurement Table

| Number of Tx in Period | Burst Length (mS) | Occupancy Time (Sec) | Limit (sec) | Pass / Fail |
|------------------------|-------------------|----------------------|-------------|-------------|
| 12 | 6.57 | 0.078 | ≤ 0.4 | Pass |

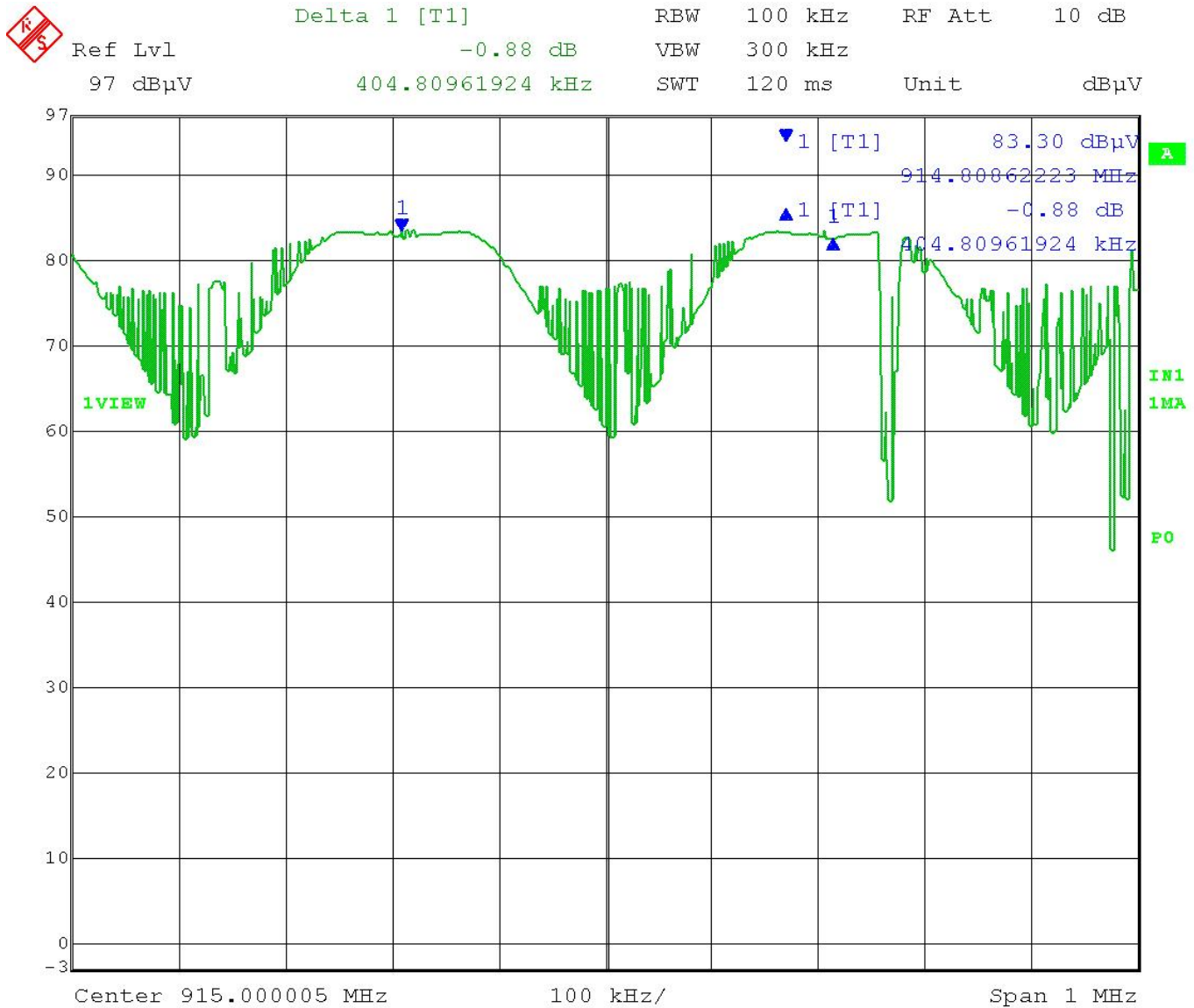
Test Data: FHSS Hopping Sequence and Receiver Bandwidth Verification

| Requirement | Supporting Documentation | Pass / Fail |
|-------------------------------|---|-------------|
| Pseudorandom Hopping Sequence | Operational Description provided by applicant | Pass |
| Equal Frequency Use | | Pass |
| Receiver Input Bandwidth | | Pass |

RESULTS: Meets Requirements

FHSS REQUIREMENTS

Test Data: Channel Separation Plot



Date: 5.JUN.2017 10:05:10

RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
FCC ID: XEYWX
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FHSS REQUIREMENTS

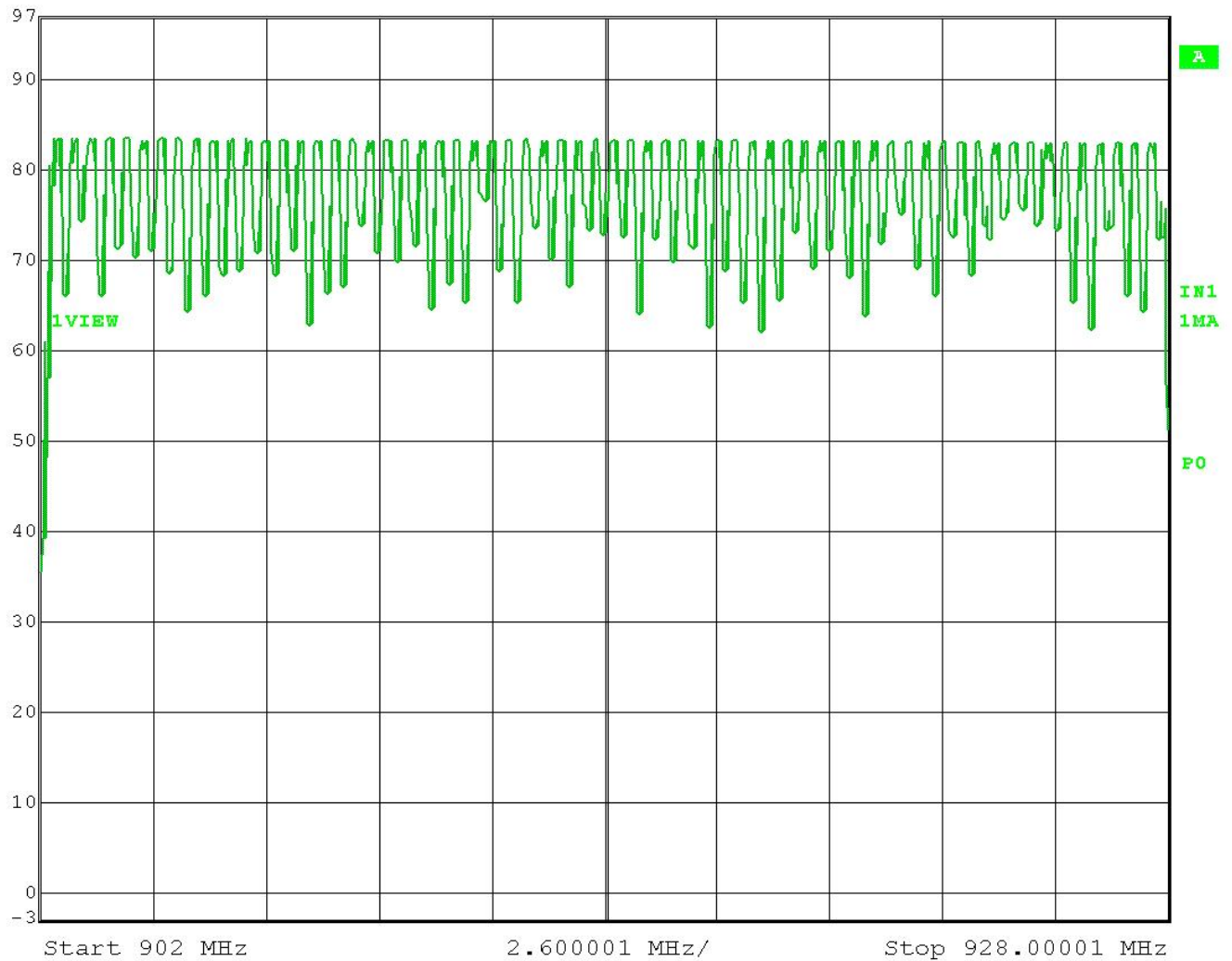
Test Data:

Number of Hopping Channels Plot



Ref Lvl
97 dBμV

RBW 100 kHz RF Att 10 dB
VBW 300 kHz
SWT 120 ms Unit dBμV



Date: 5.JUN.2017 09:50:28

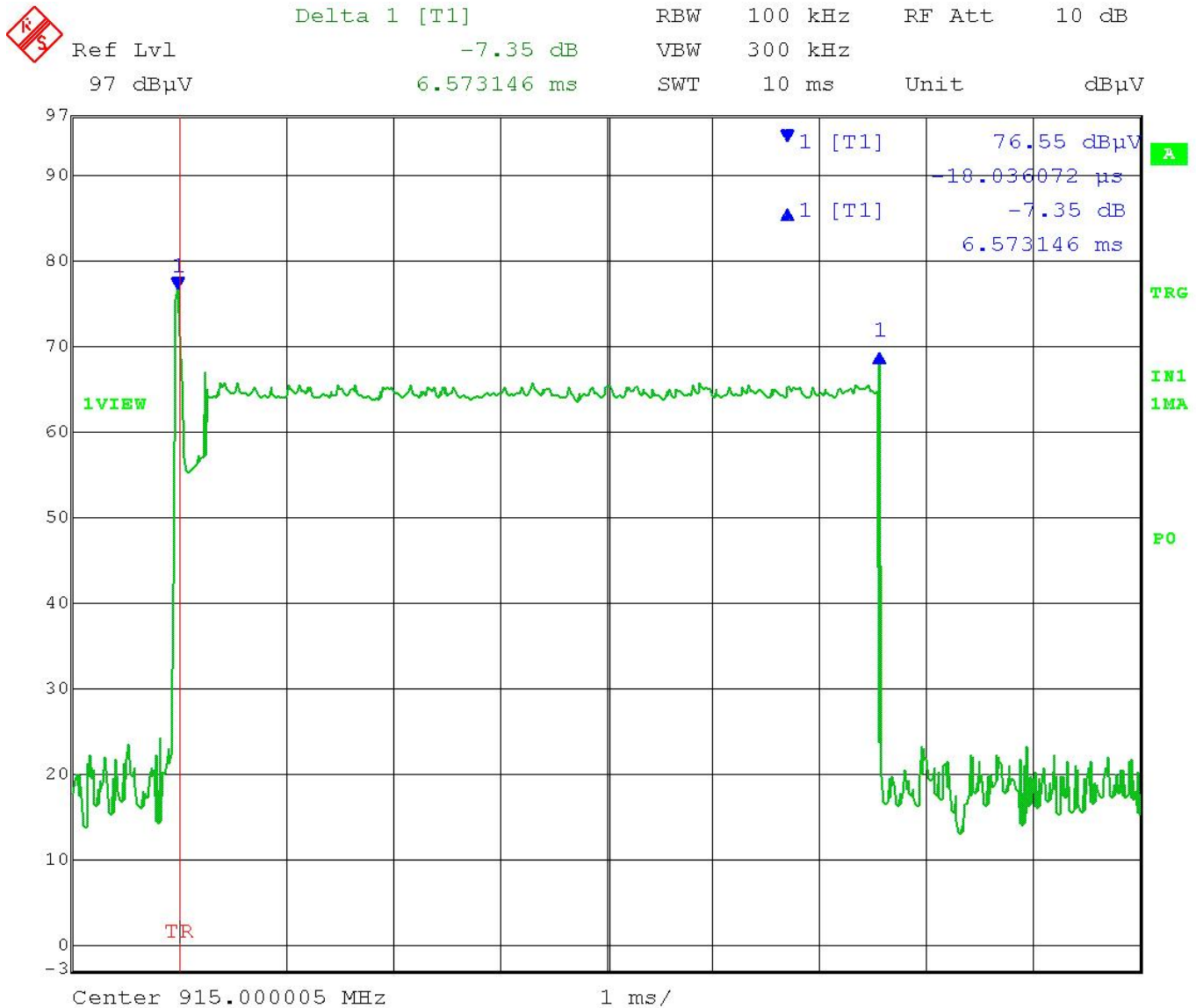
RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
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FHSS REQUIREMENTS

Test Data: Channel Occupancy Time Plot



Date: 5.JUN.2017 10:08:13

RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
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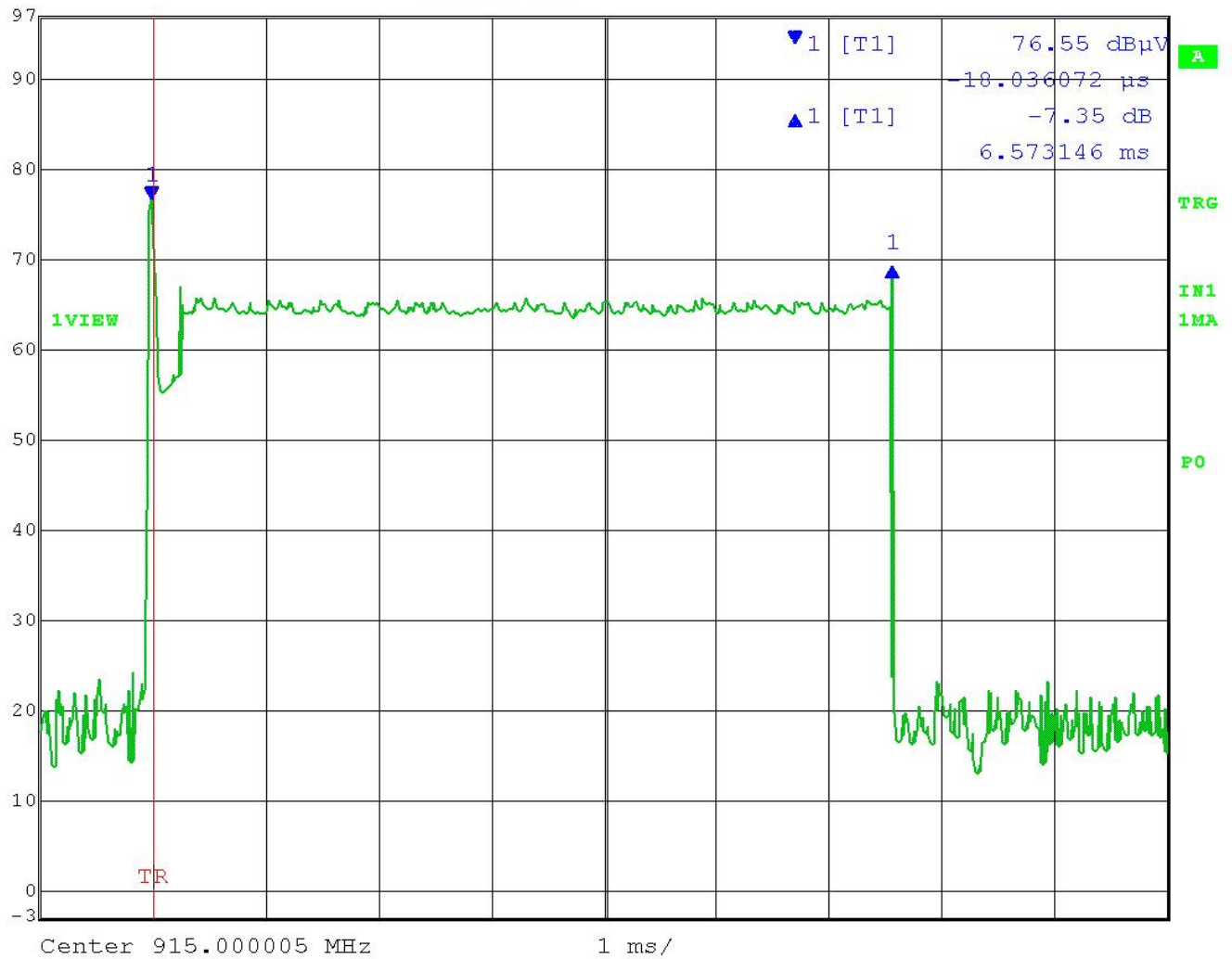
FHSS REQUIREMENTS

Test Data:

Burst Length Plot



| | | | | | |
|---------|--------------|-----|---------|--------|-------|
| Ref Lvl | Delta 1 [T1] | RBW | 100 kHz | RF Att | 10 dB |
| 97 dBμV | -7.35 dB | VBW | 300 kHz | | |
| | 6.573146 ms | SWT | 10 ms | Unit | dBμV |



Date: 5.JUN.2017 10:08:13

RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
 FCC ID: XEYWX
 IC: 8410A-WX
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PEAK POWER OUTPUT

Rules Part No.: FCC 15.247(b) (2) (4), IC RSS 247 § 5.4.1

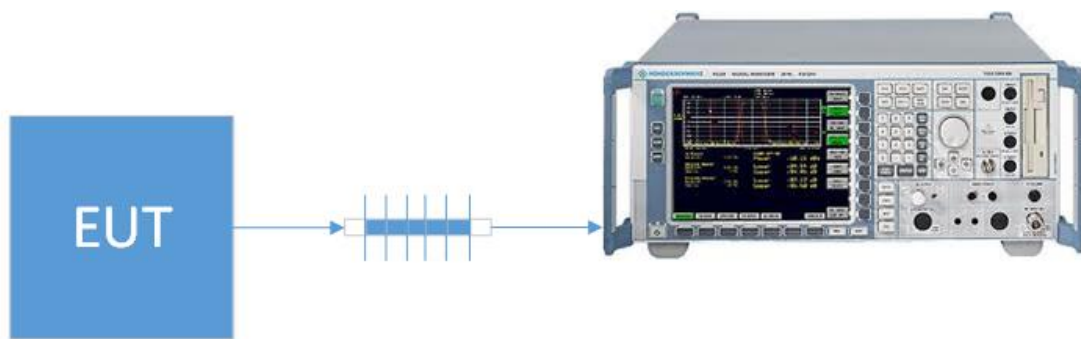
Requirements:

FHSS Using Hopset ≥ 50 Channels

The maximum peak conducted output power shall not exceed 1.0 W, and the e.i.r.p. shall not exceed 4 W if the hopset uses 50 or more hopping channels.

Test Method: ANSI C63.10 § 7.8.5 Output Power test procedure for FHSS

Setup:



PEAK POWER OUTPUT

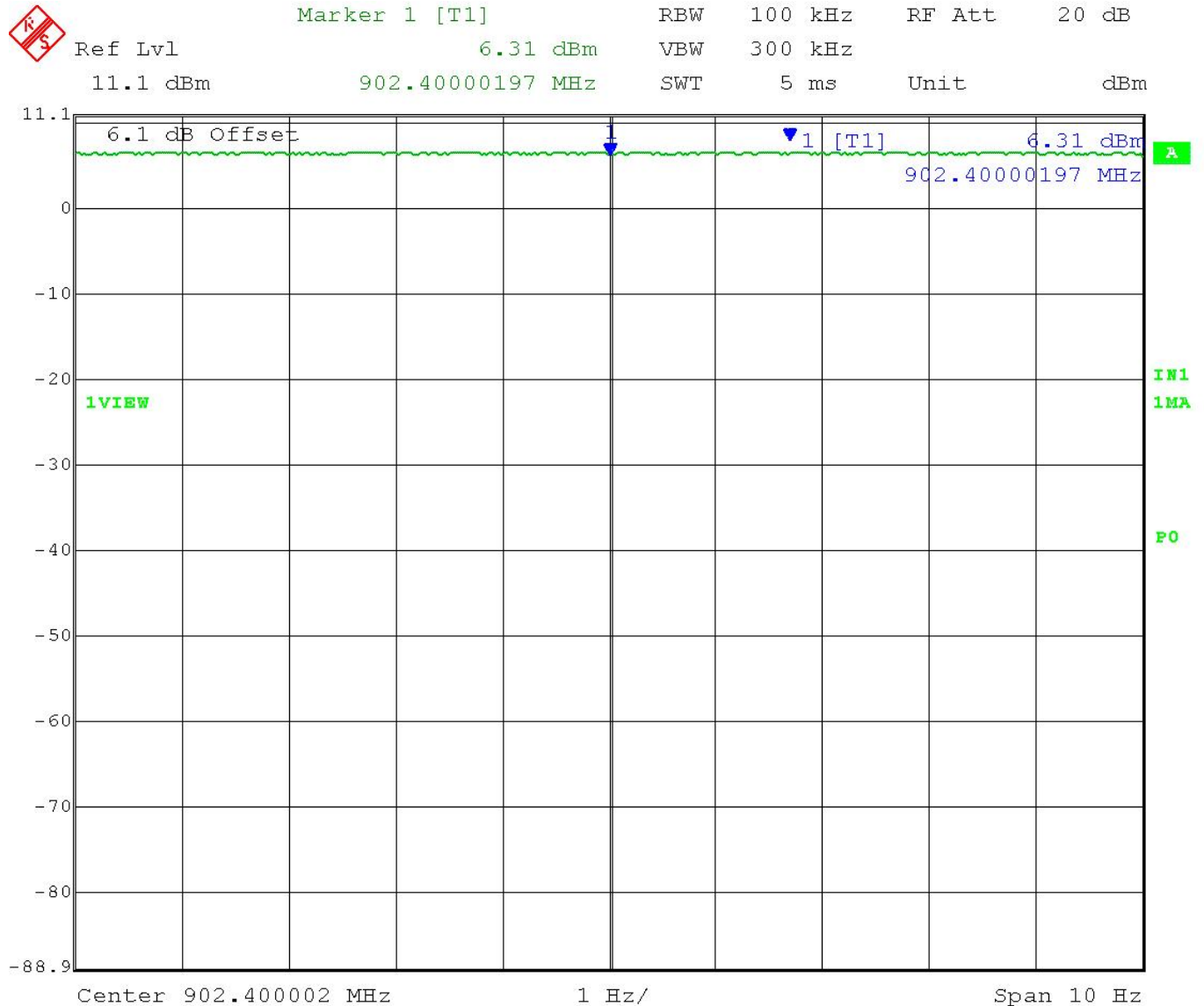
Test Data: Peak Power Output Measurement Table

| Peak Conducted Power Output Measurement | | | | |
|---|------------------|----------------|-----------|------------|
| Tuned Frequency (MHz) | PConducted (dBm) | PConducted (W) | Limit (W) | Margin (W) |
| 902.4 | 6.31 | 0.00428 | 1.00 | 0.99572 |
| 915 | 6.46 | 0.00443 | 1.00 | 0.99557 |
| 927.6 | 6.02 | 0.00400 | 1.00 | 0.99600 |
| Peak EIRP Power Output Calculation | | | | |
| Tuned Frequency (MHz) | PConducted (dBm) | EIRP (W) | Limit (W) | Margin (W) |
| 902.4 | 6.31 | 0.00701 | 4.00 | 3.99299 |
| 915 | 6.46 | 0.00726 | 4.00 | 3.99274 |
| 927.6 | 6.02 | 0.00656 | 4.00 | 3.99344 |

RESULTS: Meets Requirements

PEAK POWER OUTPUT

Test Data: Low End of Band Peak Conducted Power Plot



Date: 21.JUN.2017 13:15:16


RESULTS: Meets Requirements

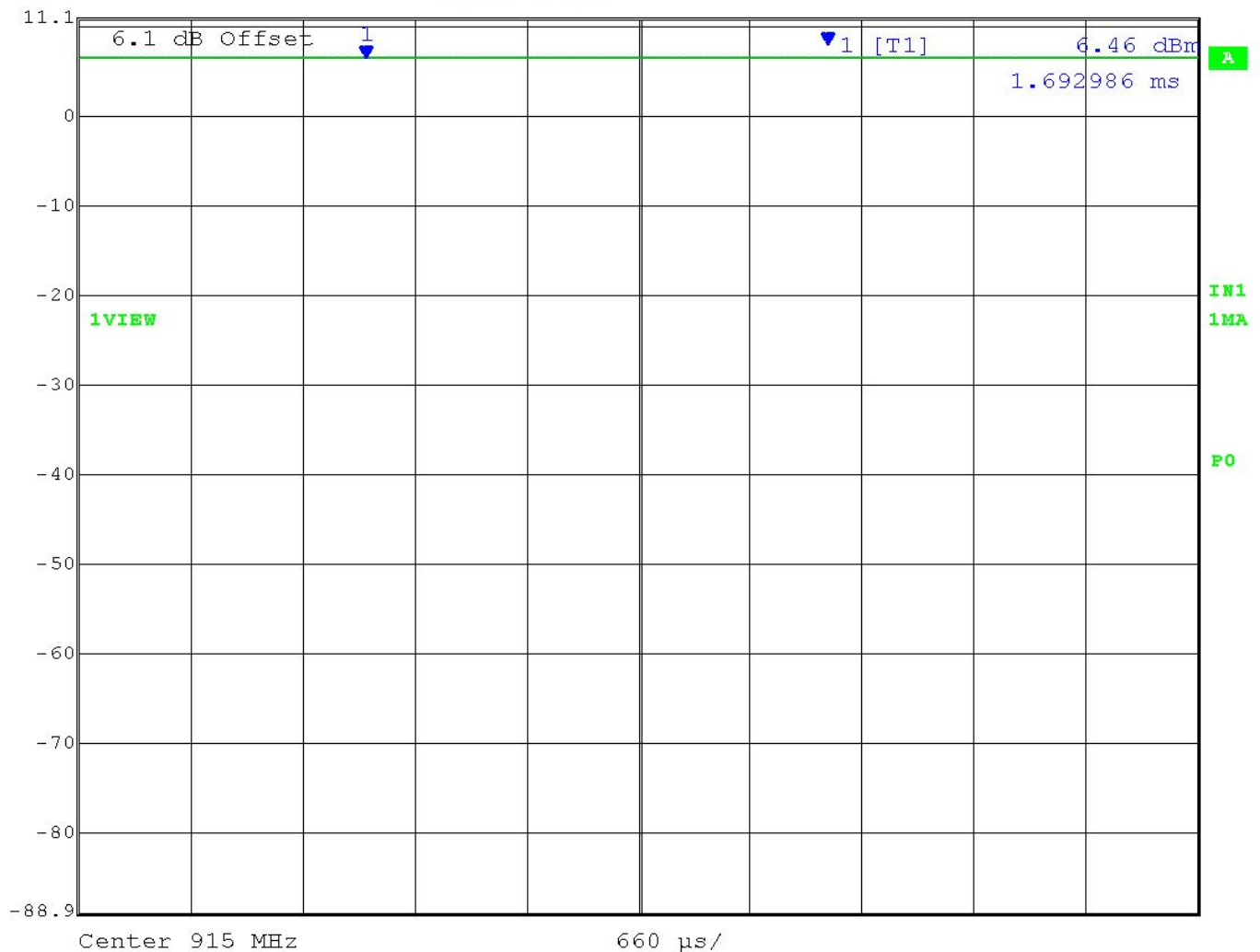
Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
 FCC ID: XEYWX
 IC: 8410A-WX
 Report: 871YAAUT17TestReport_Rev1

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PEAK POWER OUTPUT

Test Data: Middle of Band Peak Conducted Power Plot


 Ref Lvl 11.1 dBm
 Marker 1 [T1] 6.46 dBm
 RBW 100 kHz
 RF Att 20 dB
 VBW 300 kHz
 1.692986 ms
 SWT 6.6 ms
 Unit dBm



Date: 21.JUN.2017 13:14:03

RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
 FCC ID: XEYWX
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PEAK POWER OUTPUT

Test Data: High End of Band Peak Conducted Power Plot



Date: 21.JUN.2017 13:12:50

RESULTS: Meets Requirements

PEAK POWER OUTPUT

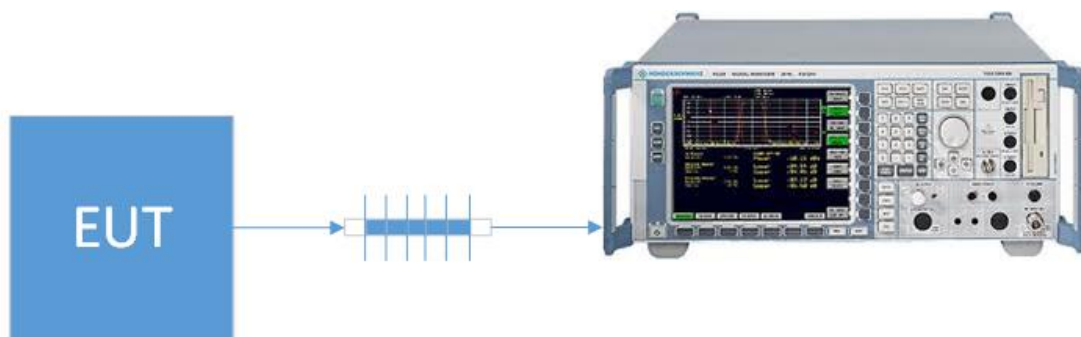
BANDEDGE

Rule Part No.: FCC 15.247(d) & 15.209, IC RSS 247 § 5.5 & RSS GEN § 8.9

Requirements: Emissions must be at least 20dB down from the highest emission level Within the authorized band as measured with a 100 kHz RBW, additionally adjacent restricted band edge emissions must comply with 15.209 and RSS-GEN 8.9 limits.

Test Method: ANSI C63.10 § 6.10.4 Authorized band-edge relative method

Setup:



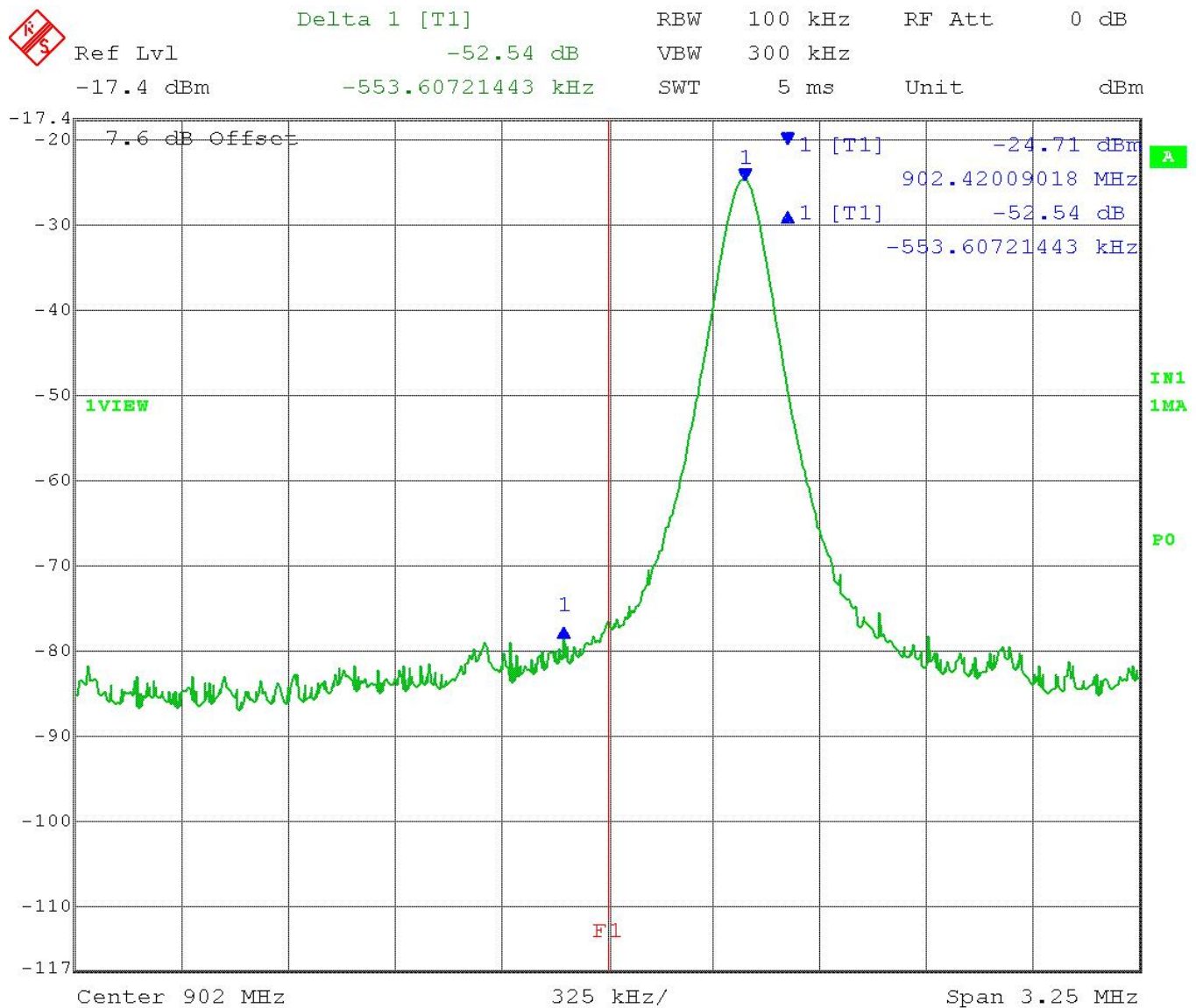
Test Data: Bandedge Measurement Table

| Bandedge | Tuned Frequency (MHz) | Measured Level (dBc) | Limit (dBc) | Margin (dB) |
|----------|-----------------------|----------------------|-------------|-------------|
| Upper | 927.6 | 48.16 | 20 | 28.16 |
| | Hopping | -21.68 | 20 | 1.68 |
| Lower | 902.42 | 52.54 | 20 | 32.54 |
| | Hopping | 30.79 | 20 | 10.79 |

RESULTS: Meets Requirements

BANDEDGE

Data: Low End of Band Lower Band Edge Plot



Date: 2.JUN.2017 09:21:02

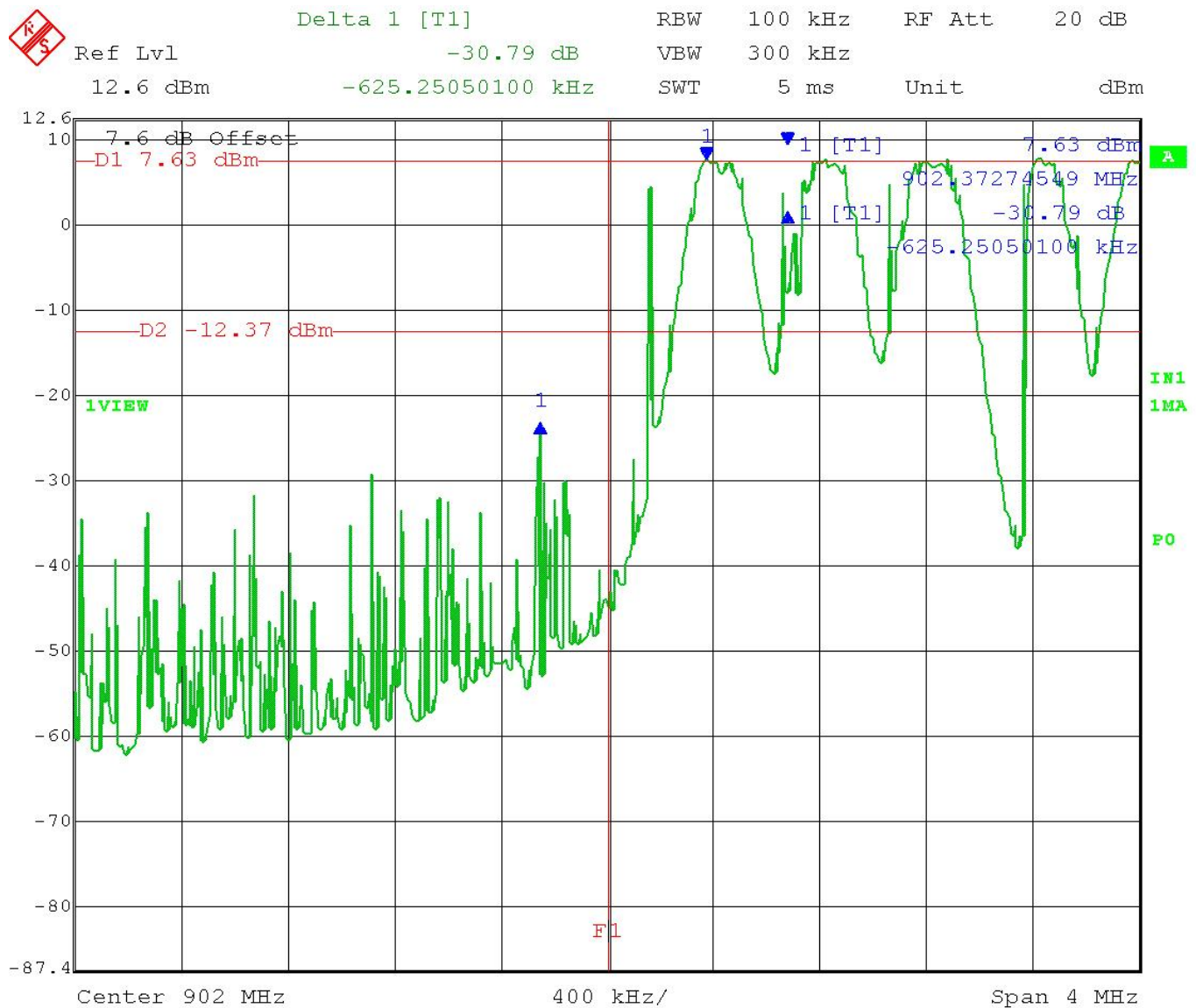
RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
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BANDEDGE

Data: Hopping Lower Band Edge Plot



Date: 13.JUN.2017 10:26:36

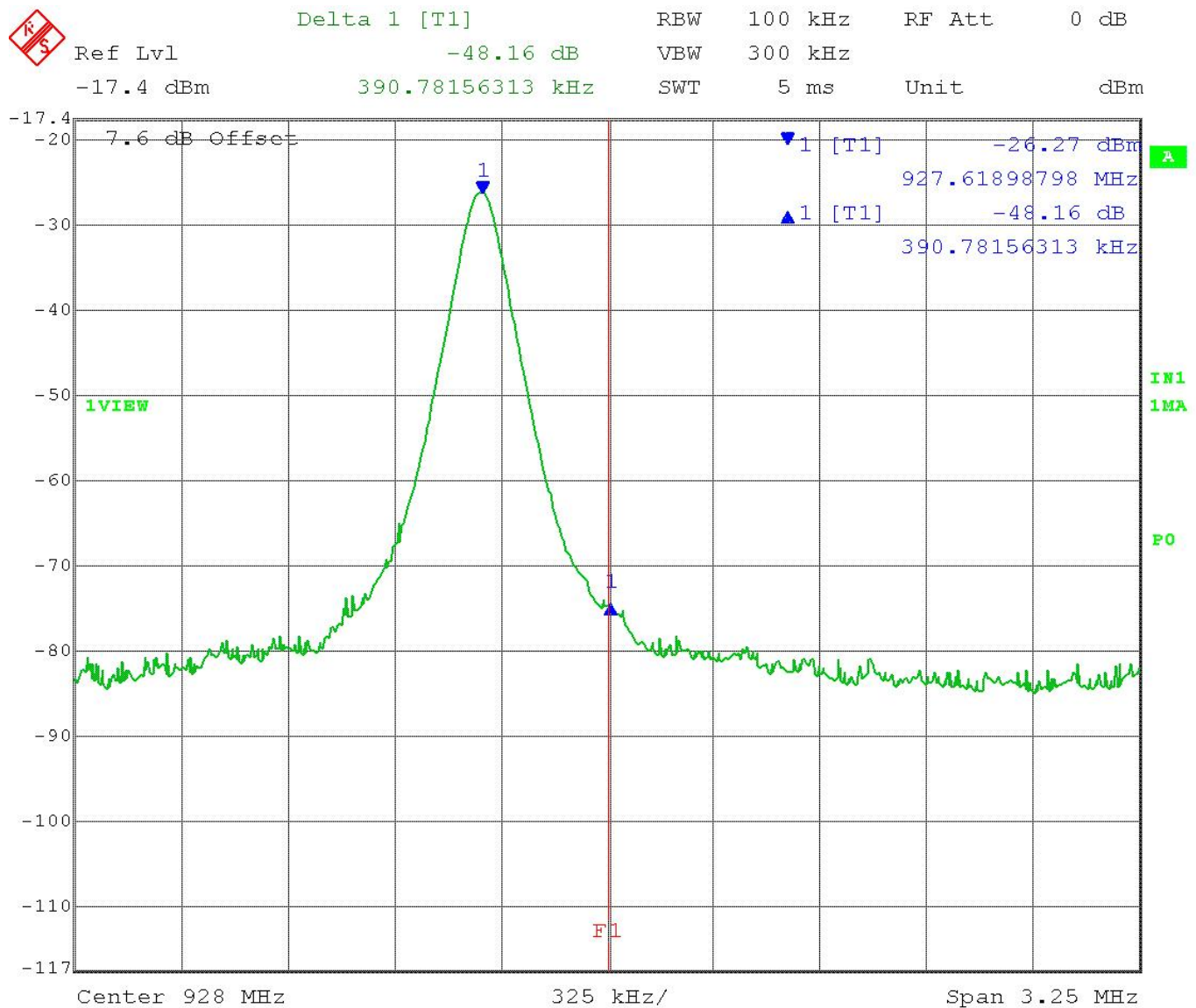
RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
 FCC ID: XEYWX
 IC: 8410A-WX
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BANDEDGE

Data: High End of Band Upper Band Edge Plot



Date: 2.JUN.2017 09:20:00

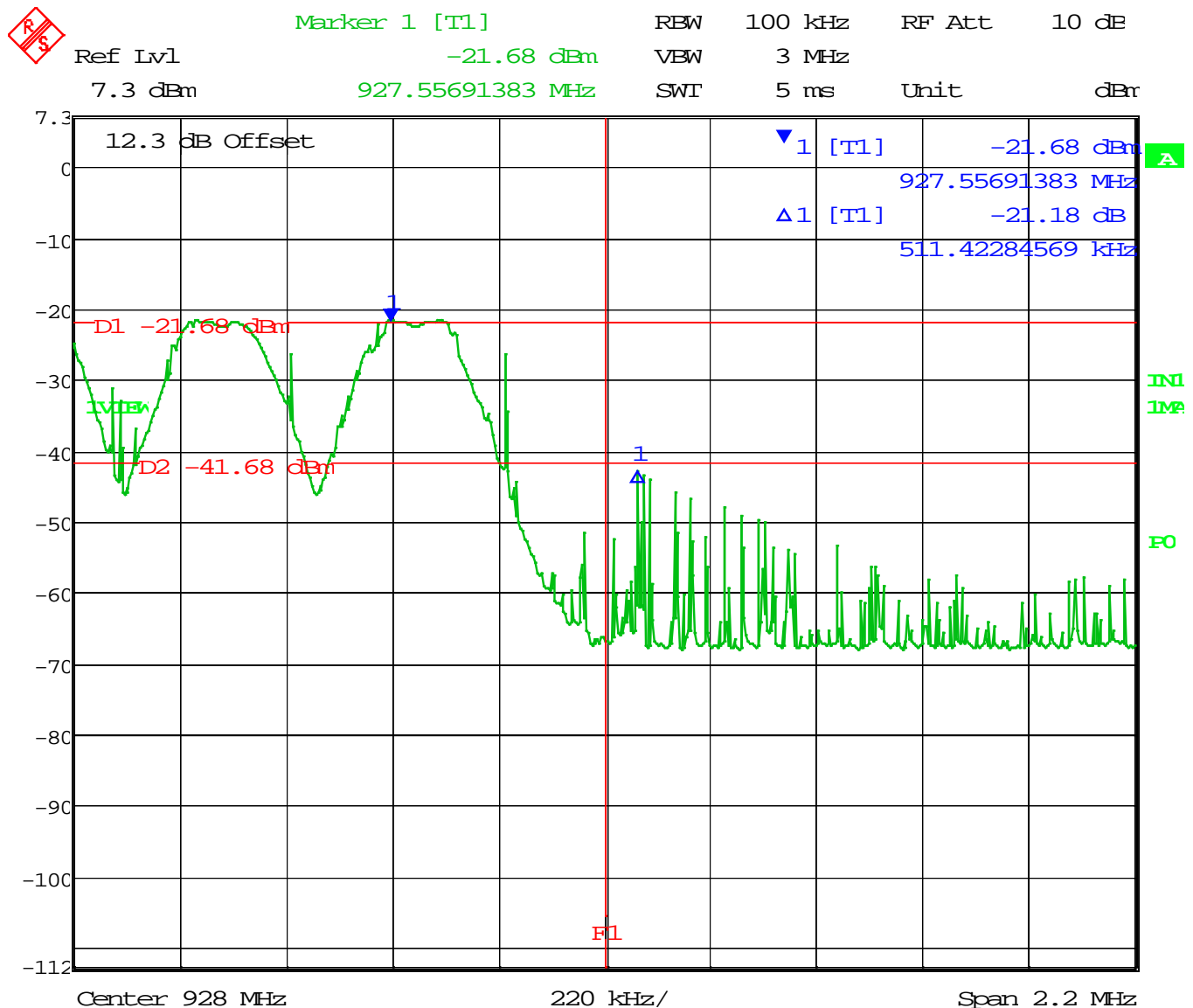
RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
 FCC ID: XEYWX
 IC: 8410A-WX
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BANDEDGE

Data: Hopping Upper Band Edge Plot



Date: 3.OCT.2017 13:36:04

RESULTS: Meets Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
 FCC ID: XEYWX
 IC: 8410A-WX
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DUTY CYCLE

Requirements: There are no requirements for the duty cycle; it is measured to determine compliance with the periodic operation average emission limits and the automatic transmission on time requirement.

Procedure: ANSI C63.10 § 7.5 Average value of pulsed emissions

Formula: $\delta \text{ (dB)} = 20 \log [\Sigma(n_1t_1 + n_2t_2 + n_3t_3) / T]$

Where:

δ is the duty cycle correction factor (dB)

T is the pulse is the period that the pulses are averaged over, (100 ms period).

t₁ is the pulse width of subpulse 1

t₂ is the pulse width of subpulse 2

t₃ is the pulse width of subpulse 3

n₁ is the number of t₁ pulses

n₂ is the number of t₂ pulses

n₃ is the number of t₃ pulses

Test Data: Calculation of Duty Cycle

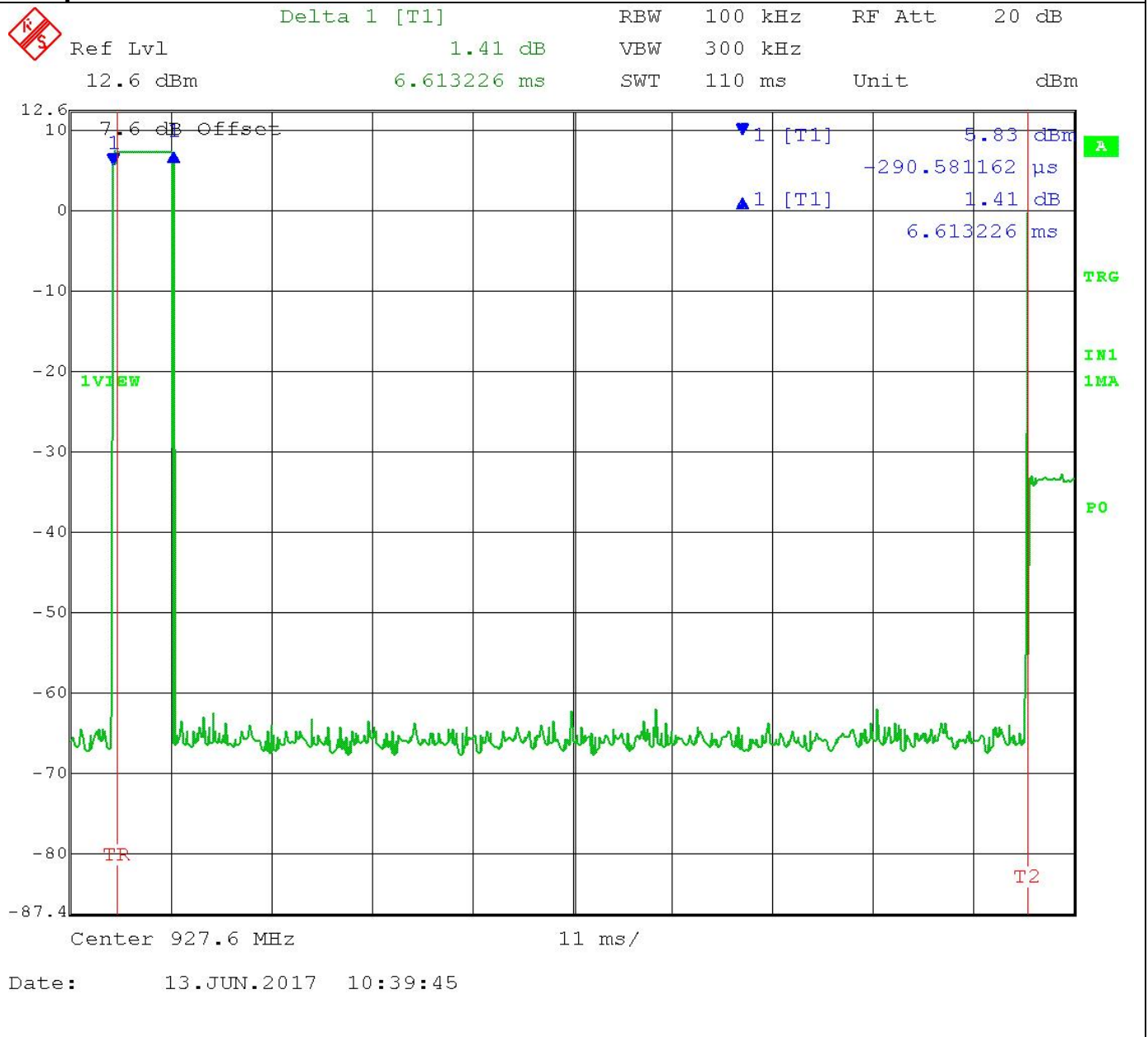
| Sub Pulse | Duration (ms) | Number | On Time (ms) |
|-----------|---------------|---------------------------|--------------|
| 1 | 6.59 | 1 | 6.59 |
| | | Total On Time (ms) | 6.59 |
| | | Period (ms) | 100 |
| | | Duty Cycle (%) | 7% |
| | | Cor Factor (dB) | -23.62 |
| | | | |
| | | | |

See the following plots.

DUTY CYCLE

Test Data: 100 ms Number of Pulses Plot

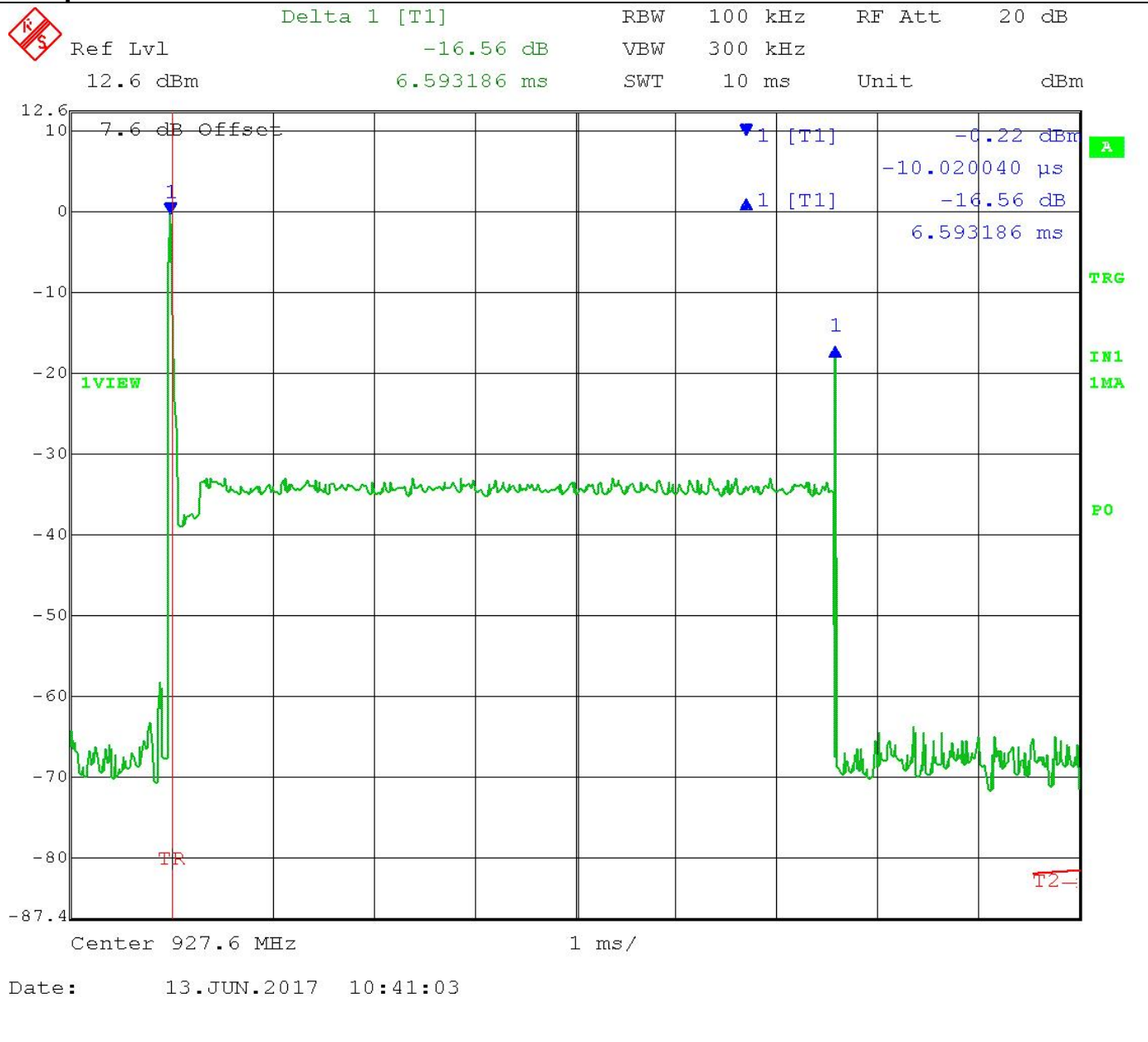
Subpulse 1 = 6.59ms



DUTY CYCLE

Test Data: SubPulse 1 Duration Plot

Subpulse 1 Duration = 6.59 ms



BANDEDGE

RADIATED SPURIOUS EMISSIONS

Rules Part No.: FCC part 15.247 (d) & 15.209, IC RSS 247 § 5.5 & RSS GEN § 8.9

Requirements: Emissions found in restricted bands the levels must comply with the general limits found in FCC part 15.209

| Frequency | Limits |
|---------------------------------|-------------------------------------|
| FCC Part 15.209, IC RSS-GEN 8.9 | |
| 9 to 490 kHz | 2400/F (kHz) μ V/m @ 300 meters |
| 490 to 1705 kHz | 24000/F (kHz) μ V/m @ 30 meters |
| 1705 kHz to 30 MHz | 29.54 dB μ V/m @ 30 meters |
| 30 – 88 | 40.0 dB μ V/m @ 3 meters |
| 80 – 216 | 43.5 dB μ V/m @ 3 meters |
| 216 – 960 | 46.0 dB μ V/m @ 3 meters |
| Above 960 | 54.0 dB μ V/m @ 3 meters |

Test Method: ANSI C63.4 § Annex D Validation of radiated emissions standard test sites
 ANSI C63.10 § 6.3 Common requirements radiated emissions
 ANSI C63.10 § 6.4 Emissions below 30 MHz
 ANSI C63.10 § 6.5 Emissions between 30 & 1000 MHz
 ANSI C63.10 § 6.6 Emissions above 1 GHz

Field Strength Calculation:

The field strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dB μ V) to the antenna correction factor supplied by the antenna manufacturer plus the coax loss. The antenna correction factors are stated in terms of dB. The gain of the preselector was accounted for in the spectrum analyzer meter reading.

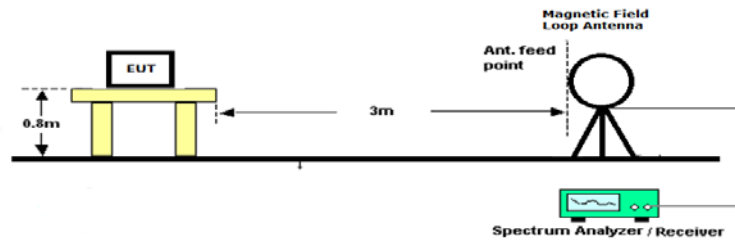
Example:

| | | | |
|------------|---------------|------------|---------------------------------|
| Freq (MHz) | Meter Reading | + ACF | + CL = FS |
| 33 | 20 dB μ V | + 10.36 dB | + 0.5 = 30.86 dB μ V/m @ 3m |

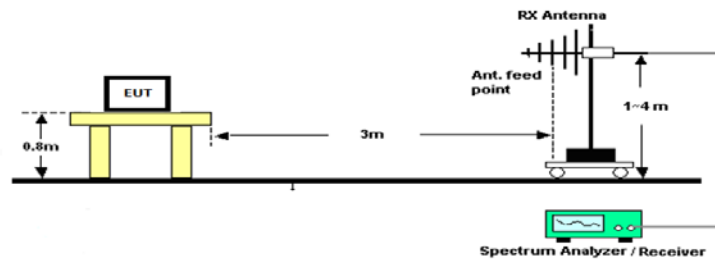
RADIATED SPURIOUS EMISSIONS

Setup:

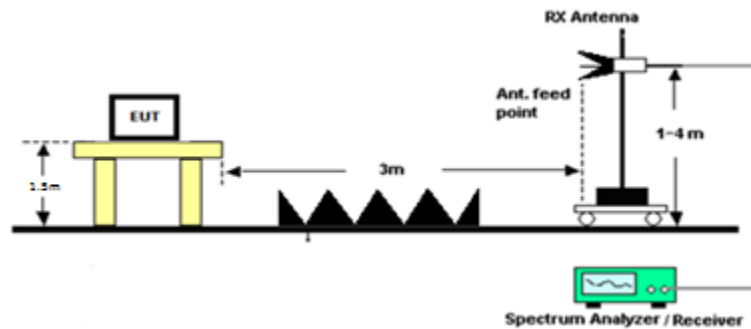
Emissions below 30 MHz



Emissions 30 – 1000 MHz



Emissions above 1 GHz



RADIATED SPURIOUS EMISSIONS

Notes: The EUT was checked in three orthogonal planes as required, a setup photo is provided to show the orientation of the worst case position.

Only the worst case data rate and Output Power which produced emissions within 20dB of the limit are reported.

The spectrum was measured from 9 KHz to 10 GHz

Test Data: Field Strength at 3 Meters Measurement Table

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dBuV | Ant. Polarity | Coax Loss dB | Correction Factor dB/m | Field Strength dBuV/m | Margin dB |
|---------------------|------------------------|--------------------|---------------|--------------|------------------------|-----------------------|-----------|
| Hopping | 0.04 | 21.00 | V | 0.17 | 13.00 | 34.17 | 5.83 |
| Hopping | 0.15 | 22.30 | V | 0.08 | 11.35 | 33.73 | 6.27 |
| Hopping | 15.41 | 10.2 | H | 0.72 | 10.38 | 21.25 | 18.75 |
| Hopping | 29.57 | 10.3 | H | 0.70 | 8.48 | 19.52 | 20.48 |
| Hopping | 30.55 | 25.3 | V | 0.63 | 12.62 | 38.57 | 1.43 |
| Hopping | 35.99 | 26.3 | H | 0.68 | 12.91 | 39.88 | 0.12 |
| Hopping | 59.70 | 25.7 | V | 0.91 | 7.52 | 34.11 | 5.89 |
| Hopping | 67.87 | 26.6 | H | 0.98 | 6.10 | 33.63 | 6.37 |
| Hopping | 88.03 | 25.7 | V | 1.11 | 10.40 | 37.18 | 6.32 |
| Hopping | 94.84 | 25.9 | V | 1.14 | 10.98 | 38.03 | 5.47 |
| Hopping | 113.91 | 26.8 | H | 1.24 | 10.30 | 38.34 | 5.16 |
| Hopping | 140.34 | 26.1 | V | 1.36 | 15.40 | 42.84 | 0.66 |
| Hopping | 16.20 | 1.39 | H | 16.30 | 33.89 | 9.61 | 16.20 |
| Hopping | 181.47 | 26.1 | V | 1.53 | 13.91 | 41.53 | 1.97 |
| Hopping | 197.82 | 16.40 | H | 1.59 | 16.63 | 34.62 | 8.88 |
| Hopping | 244.87 | 25.4 | H | 1.82 | 11.59 | 38.76 | 88.62 |
| Hopping | 260.26 | 37.1 | V | 1.89 | 12.52 | 51.51 | 75.87 |
| Hopping | 388.46 | 26.0 | H | 2.25 | 14.84 | 43.08 | 84.30 |
| Hopping | 524.36 | 36.3 | V | 2.65 | 17.27 | 56.22 | 71.16 |
| Hopping | 626.92 | 26.0 | H | 2.88 | 18.84 | 47.72 | 79.66 |
| Hopping | 779.49 | 36.8 | V | 3.21 | 22.67 | 62.63 | 64.75 |
| Hopping | 855.13 | 25.8 | H | 3.35 | 22.70 | 51.82 | 75.56 |
| Hopping | 946.89 | 16.60 | V | 3.53 | 23.03 | 43.16 | 2.84 |
| Hopping | 947.01 | 17.70 | V | 3.53 | 23.04 | 44.27 | 1.73 |

Results Meet Requirements

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES
FCC ID: XEYWX
IC: 8410A-WX
Report: 871YAAUT17TestReport_Rev1

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RADIATED SPURIOUS EMISSIONS

Test Data: Field Strength at 3 Meters Measurement Table

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dBuV | Duty cycle | Ant. Polarity | Coax Loss dB | Correction Factor dB/m | Field Strength dBuV/m | Margin dB |
|---------------------|------------------------|--------------------|------------|---------------|--------------|------------------------|-----------------------|-----------|
| 902.4 | 1,804.80 | 22.9 | 23.62 | H | 4.94 | 30.33 | 34.57 | 19.43 |
| 902.4 | 1,804.80 | 23.5 | 23.62 | V | 4.94 | 30.33 | 35.16 | 18.84 |
| 902.4 | 2,707.20 | 23.4 | 23.62 | H | 6.04 | 32.50 | 38.31 | 15.69 |
| 902.4 | 2,707.20 | 24.4 | 23.62 | V | 6.04 | 32.50 | 39.3 | 14.7 |
| 902.4 | 3,609.60 | 24.1 | 23.62 | H | 6.96 | 33.11 | 40.54 | 13.46 |
| 902.4 | 3,609.60 | 24.4 | 23.62 | V | 6.96 | 33.11 | 40.89 | 13.11 |
| 902.4 | 4,512.00 | 21.7 | 23.62 | V | 7.81 | 33.90 | 39.82 | 14.18 |
| 902.4 | 4,512.00 | 21.8 | 23.62 | H | 7.81 | 33.90 | 39.86 | 14.14 |
| 902.4 | 5,414.40 | 22.1 | 23.62 | V | 8.60 | 34.41 | 41.47 | 12.53 |
| 902.4 | 5,414.40 | 22.3 | 23.62 | H | 8.60 | 34.41 | 41.73 | 12.27 |
| 902.4 | 6,316.80 | 21.9 | 23.62 | V | 9.32 | 35.42 | 43.03 | 10.97 |
| 902.4 | 6,316.80 | 22.2 | 23.62 | H | 9.32 | 35.42 | 43.34 | 10.66 |
| 902.4 | 7,219.20 | 20.9 | 23.62 | V | 9.93 | 36.38 | 43.63 | 10.37 |
| 902.4 | 7,219.20 | 21.2 | 23.62 | H | 9.93 | 36.38 | 43.91 | 10.09 |
| 902.4 | 8,121.60 | 19.3 | 23.62 | H | 10.53 | 35.80 | 42.04 | 11.96 |
| 902.4 | 8,121.60 | 19.6 | 23.62 | V | 10.53 | 35.80 | 42.35 | 11.65 |
| 902.4 | 9,024.00 | 20.0 | 23.62 | V | 11.04 | 36.10 | 43.56 | 10.44 |
| 902.4 | 9,024.00 | 20.5 | 23.62 | H | 11.04 | 36.10 | 44.05 | 9.95 |

RADIATED SPURIOUS EMISSIONS

Test Data: Field Strength at 3 Meters Measurement Table

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dBuV | Duty cycle | Ant. Polarity | Coax Loss dB | Correction Factor dB/m | Field Strength dBuV/m | Margin dB |
|---------------------|------------------------|--------------------|------------|---------------|--------------|------------------------|-----------------------|-----------|
| 915.0 | 1,830.00 | 22.9 | 23.62 | V | 4.93 | 30.51 | 34.69 | 19.31 |
| 915.0 | 1,830.00 | 23.2 | 23.62 | H | 4.93 | 30.51 | 34.98 | 19.02 |
| 915.0 | 2,745.00 | 23.8 | 23.62 | H | 6.08 | 32.50 | 38.79 | 15.21 |
| 915.0 | 2,745.00 | 25.2 | 23.62 | V | 6.08 | 32.50 | 40.19 | 13.81 |
| 915.0 | 3,660.00 | 22.0 | 23.62 | V | 7.01 | 33.16 | 38.55 | 15.45 |
| 915.0 | 3,660.00 | 22.4 | 23.62 | H | 7.01 | 33.16 | 38.91 | 15.09 |
| 915.0 | 4,575.00 | 22.3 | 23.62 | H | 7.87 | 33.90 | 40.42 | 13.58 |
| 915.0 | 4,575.00 | 22.6 | 23.62 | V | 7.87 | 33.90 | 40.71 | 13.29 |
| 915.0 | 5,490.00 | 20.7 | 23.62 | V | 8.66 | 34.49 | 40.27 | 13.73 |
| 915.0 | 5,490.00 | 20.7 | 23.62 | H | 8.66 | 34.49 | 40.27 | 13.73 |
| 915.0 | 6,405.00 | 22.3 | 23.62 | V | 9.38 | 35.50 | 43.52 | 10.48 |
| 915.0 | 6,405.00 | 22.4 | 23.62 | H | 9.38 | 35.50 | 43.66 | 10.34 |
| 915.0 | 7,320.00 | 20.9 | 23.62 | H | 10.00 | 36.26 | 43.58 | 10.42 |
| 915.0 | 7,320.00 | 21.2 | 23.62 | V | 10.00 | 36.26 | 43.82 | 10.18 |
| 915.0 | 8,235.00 | 19.4 | 23.62 | H | 10.59 | 35.80 | 42.16 | 11.84 |
| 915.0 | 8,235.00 | 19.5 | 23.62 | V | 10.59 | 35.80 | 42.25 | 11.75 |
| 915.0 | 9,150.00 | 19.9 | 23.62 | V | 11.12 | 36.20 | 43.55 | 10.45 |
| 915.0 | 9,150.00 | 20.4 | 23.62 | H | 11.12 | 36.20 | 44.05 | 9.95 |

RADIATED SPURIOUS EMISSIONS

Test Data: Field Strength at 3 Meters Measurement Table

| Tuned Frequency MHz | Emission Frequency MHz | Meter Reading dBuV | Duty cycle | Ant. Polarity | Coax Loss dB | Correction Factor dB/m | Field Strength dBuV/m | Margin dB |
|---------------------|------------------------|--------------------|------------|---------------|--------------|------------------------|-----------------------|-----------|
| 927.6 | 1,855.20 | 23.1 | 23.62 | H | 4.93 | 30.69 | 35.05 | 18.95 |
| 927.6 | 1,855.20 | 23.2 | 23.62 | V | 4.93 | 30.69 | 35.16 | 18.84 |
| 927.6 | 2,782.80 | 24.0 | 23.62 | V | 6.11 | 32.50 | 39 | 15 |
| 927.6 | 2,782.80 | 24.9 | 23.62 | H | 6.11 | 32.50 | 39.84 | 14.16 |
| 927.6 | 3,710.40 | 21.9 | 23.62 | H | 7.06 | 33.19 | 38.54 | 15.46 |
| 927.6 | 3,710.40 | 22.2 | 23.62 | V | 7.06 | 33.19 | 38.79 | 15.21 |
| 927.6 | 4,638.00 | 23.4 | 23.62 | H | 7.92 | 33.90 | 41.6 | 12.4 |
| 927.6 | 4,638.00 | 23.5 | 23.62 | V | 7.92 | 33.90 | 41.66 | 12.34 |
| 927.6 | 5,565.60 | 21.8 | 23.62 | V | 8.73 | 34.43 | 41.29 | 12.71 |
| 927.6 | 5,565.60 | 22.0 | 23.62 | H | 8.73 | 34.43 | 41.56 | 12.44 |
| 927.6 | 6,493.20 | 21.9 | 23.62 | H | 9.44 | 35.50 | 43.2 | 10.8 |
| 927.6 | 6,493.20 | 22.1 | 23.62 | V | 9.44 | 35.50 | 43.37 | 10.63 |
| 927.6 | 7,420.80 | 21.2 | 23.62 | H | 10.07 | 36.06 | 43.75 | 10.25 |
| 927.6 | 7,420.80 | 21.6 | 23.62 | V | 10.07 | 36.06 | 44.1 | 9.9 |
| 927.6 | 8,348.40 | 19.3 | 23.62 | V | 10.66 | 35.85 | 42.22 | 11.78 |
| 927.6 | 8,348.40 | 19.4 | 23.62 | H | 10.66 | 35.85 | 42.26 | 11.74 |
| 927.6 | 9,276.00 | 19.5 | 23.62 | H | 11.20 | 36.30 | 43.42 | 10.58 |
| 927.6 | 9,276.00 | 20.1 | 23.62 | V | 11.20 | 36.30 | 43.98 | 10.02 |

EMC EQUIPMENT LIST

| Device | Manufacturer | Model | Serial Number | Cal/Char Date | Due Date |
|---|----------------------|-----------------------|-----------------------------|---------------|------------|
| Attenuator K 6dB 2W DC-40G | Narda | 4768-6 | 1044-1 | 06/25/15 | 10/25/17 |
| Attenuator K 6dB 2W DC-40G | Narda | 4768-6 | 1044-3 | 06/25/15 | 10/25/17 |
| DC Power Supply | HP | 6286A | 1744A03842 | N/A | N/A |
| Antenna: Biconical 1096 Chamber | Eaton | 94455-1 | 1096 | 08/01/2017 | 08/02/2019 |
| Antenna: Log-Periodic 1122 | Electro-Metrics | LPA-25 | 1122 | 07/26/17 | 07/26/19 |
| LISN (Primary) | Electro-Metrics | ANS-25/2 | 2604 | 07/13/15 | 10/13/17 |
| Antenna: Standard Gain Horn 18.0-26.3 GHz | Systron Donner | DBE-520-20 | Not Serialized | N/A | N/A |
| Antenna: Standard Gain Horn 12.4-18.0 GHz | ATM | 62-442-6 | D262108-01 | N/A | N/A |
| Antenna: Standard Gain Horn 5.85-8.2 GHz | ATM | 137-442-2 | D261908-01 | N/A | N/A |
| CHAMBER | Panashield | 3M | N/A | 04/25/16 | 12/31/17 |
| Antenna: Double-Ridged Horn/ETS Horn 2 | ETS-Lindgren Chamber | 3117 | 00041534 | 03/01/17 | 03/01/19 |
| EMI Test Receiver R & S ESIB 40 Screen Room | Rohde & Schwarz | ESIB 40 | 100274 | 08/16/16 | 08/16/18 |
| Software: Field Strength Program | Timco | N/A | Version 4.10.7.0 | N/A | N/A |
| Antenna: Active | ETS-Lindgren | 6502 | 00062529 | 11/18/15 | 11/18/17 |
| USB Peak Power Sensor 50 MHz to 18 GHz | Boonton | 55318 | 9224 | 09/13/16 | 09/13/18 |
| Coaxial Cable #103 - KMKM-0180-01 Aqua | Micro-Coax | UFB142A-0-0720-200200 | 225363-002 (#103) | 08/05/15 | 10/05/17 |
| Coaxial Cable #100 - NMNM-0180-00 Aqua | Micro-Coax | UFB311A-0-0720-50U50U | 225362-001 (#100) | 07/14/16 | 07/14/18 |
| Coaxial Cable #102 - KMKM-0180-00 Aqua | Micro-Coax | UFB142A-0-0720-200200 | 225363-001 (#102) | 07/21/16 | 07/21/18 |
| Coaxial Cable #101 - NMNM-0180-01 Aqua DC-40G | Micro-Coax | UFB311A-0-0720-50U50U | 225362-002 (#101) | 07/18/16 | 07/18/18 |
| EMI Test Receiver R & S ESU 40 Chamber | Rohde & Schwarz | ESU 40 | 100320 | 04/01/16 | 04/01/18 |
| Coaxial Cable - KMKM-0100-00 Blue DC-20G - Immunity 2 cable set | Sucoflex | 103 | 49322/3 | 07/19/16 | 07/19/18 |
| Coaxial Cable - BMBM-1000-00 Silver | Semflex | LISN Cable | BMBM-1000-00 | 01/05/17 | 01/05/18 |
| Coaxial Cable - Chamber 3 cable set | Micro-Coax | Chamber 3 cable set | KMKM-0244-01; KMKM-0670-00; | 08/09/16 | 08/09/18 |

Applicant: VERDANT ENVIRONMENTAL TECHNOLOGIES

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| | | | | | |
|---------------------------------------|---------------|-------------|--------------|----------|----------|
| (Primary) | | (Primary) | KFKF-0198-01 | | |
| Band Reject Filter 2.4 GHz | Micro-Tronics | BRM50702-02 | -G042 | 09/27/16 | 09/27/18 |
| High Pass Filter 18GHz | Micro-Tronics | HPS18771 | -002 | 05/13/16 | 05/13/18 |
| Antenna: Double-Ridged Horn 18-40 GHz | EMCO | 3116 | 9011-2145 | 11/18/15 | 11/18/17 |
| Attenuator K 6dB 2W DC-40G | Narda | 4768-6 | 1044-2 | 06/25/15 | 10/25/17 |
| Pre-amp | RF-LAMBDA | RLNA00M45GA | NA | 01/04/16 | 01/04/18 |

***EMI RECEIVER SOFTWARE VERSION**

The receiver firmware used was version 4.43 Service Pack 3

END OF TEST REPORT