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***Radio Test Report***  
***FCC Part 95***  
***MedRadio Transmitter***  
***Model: PW1000***

COMPANY: Nevro Corporation  
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TEST SITE(S): National Technical Systems  
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**REVISION HISTORY**

| Rev# | Date              | Comments                                    | Modified By |
|------|-------------------|---------------------------------------------|-------------|
| -    | November 19, 2018 | First release                               |             |
| 1    | January 24, 2019  | Corrected reference to test method standard | dwb         |

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## SCOPE

Tests have been performed on the Nevro Corporation model PW1000, pursuant to the relevant requirements of the following standard(s) in order to obtain device certification against the regulatory requirements of the Federal Communications Commission.

- Code of Federal Regulations (CFR) Title 47 Part 2
- CFR 47 Part 95 Subpart I (Medical Device Radio Communication Service)

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in National Technical Systems test procedures:

ANSI C63.26:2015

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

National Technical Systems is accredited by the A2LA, certificate number 0214.26, to perform the test(s) listed in this report, except where noted otherwise.

The test results recorded herein are based on a single type test of the Nevro Corporation model PW1000 and therefore apply only to the tested sample. The sample was selected and prepared by Ryan Greenstreet of Nevro Corporation.

**OBJECTIVE**

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, the device requires certification. Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

**STATEMENT OF COMPLIANCE**

The tested samples of Nevro Corporation model PW1000 complied with the requirements of the standards and frequency bands declared in the scope of this test report.

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

**DEVIATIONS FROM THE STANDARDS**

No deviations were made from the published requirements listed in the scope of this report.

## TEST RESULTS

### FCC Part 95

| Rule Part                                                                  | Description                                                                                                   | Measured                                                                                                                                                                                                                                                                                                                                        | Limit                                                                                                                                                                                                                                                                                                                                                | Result   |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Transmitter frequency, power, bandwidth, modulation and unwanted emissions |                                                                                                               |                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                      |          |
| §2.1033(c) (5)<br>§ 95.2563(a)                                             | Frequency range(s)                                                                                            | 402.45 – 404.55 MHz                                                                                                                                                                                                                                                                                                                             | 402-405 MHz                                                                                                                                                                                                                                                                                                                                          | Complied |
| §2.1033(c) (6)<br>§2.1033(c) (7)<br>§2.1046<br>§95.2567(a)(1)              | EIRP (Calculated from Field Strength)                                                                         | 23.3µW<br>-16.3dBm                                                                                                                                                                                                                                                                                                                              | 25µW<br>–16dBm                                                                                                                                                                                                                                                                                                                                       | Complied |
| §2.1033(c) (4)<br>§2.1047<br>§95.2579(c)                                   | Emission types                                                                                                | F1D                                                                                                                                                                                                                                                                                                                                             | -                                                                                                                                                                                                                                                                                                                                                    | -        |
|                                                                            | Unwanted emissions                                                                                            | 0.007µW<br>-51.5dBm                                                                                                                                                                                                                                                                                                                             | 0.25µW<br>-36dBm                                                                                                                                                                                                                                                                                                                                     | Complied |
| §2.1049<br>§95.2573(a)                                                     | Authorized Bandwidth                                                                                          | 252 kHz                                                                                                                                                                                                                                                                                                                                         | 300 kHz                                                                                                                                                                                                                                                                                                                                              | Complied |
| Transmitter spurious emissions                                             |                                                                                                               |                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                      |          |
| §2.1053<br>§2.1057<br>§95.2579(a)                                          | Field strength                                                                                                | 39.4 dBuV/m                                                                                                                                                                                                                                                                                                                                     | See table                                                                                                                                                                                                                                                                                                                                            | Complied |
| Other details                                                              |                                                                                                               |                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                      |          |
| 95.2559                                                                    | Frequency Monitoring                                                                                          | LBT Threshold power level<br>-102.3 dBm<br>Monitoring system bandwidth<br>> 20 dB EBW<br>Monitoring system scan cycle time<br>1 second<br>Monitoring system Minimum Channel monitoring period<br>0.1 ms / 10 ms<br>Channel access based on ambient level above PTh<br>Correct channel selection<br>Discontinuation of MICS session<br>5 seconds | LBT Threshold power level<br>-102.3 dBm<br>Monitoring system bandwidth<br>> 20 dB EBW<br>Monitoring system scan cycle time<br>< 5 seconds<br>Monitoring system Minimum Channel monitoring period<br>0.1 ms / 10 ms<br>Channel access based on ambient level above PTh<br>Correct channel selection<br>Discontinuation of MICS session<br>< 5 seconds | Complied |
| §2.1055<br>§95.2565                                                        | Frequency stability                                                                                           | 18.9 ppm                                                                                                                                                                                                                                                                                                                                        | 100 ppm                                                                                                                                                                                                                                                                                                                                              | Complied |
| §2.1093                                                                    | RF Exposure                                                                                                   | Refer to separate exhibit                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                      |          |
| §2.1033 (c) (8)                                                            | Final radio frequency amplifying circuit’s dc voltages and currents for normal operation over the power range | 3.3Vdc, 7mA                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                      |          |
| Notes                                                                      |                                                                                                               |                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                      |          |

**EXTREME CONDITIONS**

Frequency stability is determined over extremes of temperature and voltage. As the device is hand carried, USB powered equipment, the supply voltage of the laptop to which the PW1000 is connected was varied between 85% and 115% of the nominal AC voltage range. The laptop battery was removed for the testing.

The extremes of temperature were 0°C to +55°C as specified in FCC §95.2565(b) for stations in the Medical Device Radiocommunication Service.

**MEASUREMENT UNCERTAINTIES**

ISO Guide 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2) and were calculated in accordance with NAMAS document NIS 81 and M3003.

| Measurement Type                        | Measurement Unit | Frequency Range                | Expanded Uncertainty         |
|-----------------------------------------|------------------|--------------------------------|------------------------------|
| RF frequency                            | Hz               | 25 to 7,000 MHz                | $1.7 \times 10^{-7}$         |
| RF power, conducted                     | dBm              | 25 to 7,000 MHz                | $\pm 0.52$ dB                |
| Conducted emission of transmitter       | dBm              | 25 to 40,000 MHz               | $\pm 0.7$ dB                 |
| Radiated emission (substitution method) | dBm              | 25 to 40,000 MHz               | $\pm 2.5$ dB                 |
| Radiated emission (field strength)      | dB $\mu$ V/m     | 25 to 1,000 MHz<br>1 to 40 GHz | $\pm 3.6$ dB<br>$\pm 6.0$ dB |

**EQUIPMENT UNDER TEST (EUT) DETAILS****GENERAL**

The Nevro Corporation model PW1000 is a programmer wand that is designed to communicate with an IPG or Trial Stimulator to program these devices. Since the EUT could be placed in any position during operation and could be handheld, the EUT was treated as tabletop equipment during testing to simulate the end-user environment. The electrical rating of the Wand is 5VDC supplied from the USB connection. The electrical rating of the laptop adapter is 100-240V, 50-60 Hz, 1.7A.

The samples were received on October 25, 2018 and tested on November 1, 2 and 5, 2018. The following units were used during testing:

| Company           | Model                                   | Description     | Serial Number                    | FCC ID      |
|-------------------|-----------------------------------------|-----------------|----------------------------------|-------------|
| Nevro Corporation | PW1000                                  | Programmer Wand | 11080-0000106                    | XKYWAND1001 |
| Nevro Corporation | PW1000                                  | Programmer Wand | 11080-0000122                    | XKYWAND1001 |
| Dell / Nevro      | Latitude 3340 /<br>Clinician Programmer | Laptop          | 15GGD32                          | -           |
| Dell / Nevro      | HA65NM130                               | AC Adapter      | CN-06TFFF-75661-<br>73G-05HD-A04 | -           |

**OTHER EUT DETAILS**

Any details including receiver class and power class, channel separation, frequency range or ranges, antennas used etc.

**ENCLOSURE**

The Programmer Wand enclosure is primarily constructed of plastic. It measures approximately 6.5 cm wide by 10.5 cm deep by 2.2 cm high.

**MODIFICATIONS**

No modifications were made to the EUT during the time the product was at National Technical Systems.

**SUPPORT EQUIPMENT**

The following equipment was used as support equipment for testing:

| Company | Model       | Description              | Serial Number | FCC ID |
|---------|-------------|--------------------------|---------------|--------|
| Nevro   | Senza       | Implant                  | 100912        | -      |
| Lenovo  | Thinkpad    | Laptop                   | PC-0D8RVE     | -      |
| Lenovo  | ADLX45NLC2A | AC Adapter for<br>Laptop | -             | -      |

Note: The Lenovo laptop was used for some tests in place of the Dell/Nevro laptop

No remote support equipment was used during testing.

**EUT INTERFACE PORTS**

The I/O cabling configuration during testing was as follows:

**EUT**

| Port | Connected To | Cable(s)    |                        |           |
|------|--------------|-------------|------------------------|-----------|
|      |              | Description | Shielded or Unshielded | Length(m) |
| USB  | Laptop       | Multiwire   | Shielded               | 1.4       |

**Additional on Support Equipment**

| Port       | Connected To | Cable(s)    |                        |           |
|------------|--------------|-------------|------------------------|-----------|
|            |              | Description | Shielded or Unshielded | Length(m) |
| Laptop DC  | AC Adapter   | two wire    | Unshielded             | 1.6       |
| AC Adapter | Mains        | three wire  | Unshielded             | 1         |

**EUT OPERATION**

During emissions testing the EUT was programmed to continuously transmit a modulated signal on the selected channel except for frequency stability where a CW signal was employed.

**TESTING****GENERAL INFORMATION**

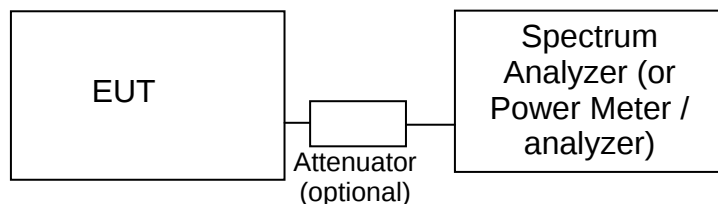
Radiated spurious emissions measurements were taken at the National Technical Systems Anechoic Chambers and/or Open Area Test Site(s) listed below. The sites conform to the requirements of ANSI C63.4:2014 *American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz* and CISPR 16-1-4 - *Specification for radio disturbance and immunity measuring apparatus and methods Part 1-4: Radio disturbance and immunity measuring apparatus Ancillary equipment Radiated disturbances*. They are on file with the FCC and industry Canada.

| Site      | Registration Numbers |            | Location                                      |
|-----------|----------------------|------------|-----------------------------------------------|
|           | FCC                  | Canada     |                                               |
| Chamber 5 | 769238               | IC 2845B-5 | 41039 Boyce Road<br>Fremont,<br>CA 94538-2435 |

ANSI C63.4 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement. The test site(s) contain separate areas for radiated and conducted emissions testing. Results from testing performed in this chamber have been correlated with results from an open area test site. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4.

## **RF PORT MEASUREMENT PROCEDURES**

Conducted measurements are performed with the EUT's rf input/output connected to the input of a spectrum analyzer, power meter or modulation analyzer. When required an attenuator, filter and/or dc block is placed between the EUT and the spectrum analyzer to avoid overloading the front end of the measurement device. Measurements are corrected for the insertion loss of the attenuators and cables inserted between the rf port of the EUT and the measurement equipment.



Test Configuration for Antenna Port Measurements

## **OUTPUT POWER**

Output power is measured using a power meter and an average sensor head, a spectrum analyzer or a power meter and peak power sensor head as required by the relevant rule part(s). Where necessary measurements are gated to ensure power is only measured over periods that the device is transmitting.

Power measurements made directly on the rf power port are, when appropriate, converted to an EIRP by adding the gain of the highest gain antenna that can be used with the device under test, as specified by the manufacturer.

For devices with an integral antenna the output power is measured as a field strength at a test distance of (typically) 3m and then converted to an eirp using far field equations as shown in SAMPLE CALCULATIONS –RADIATED POWER.

## **BANDWIDTH MEASUREMENTS**

The 20dB signal bandwidth is measured in using the bandwidths recommended by ANSI C63.26. When required, the 99% bandwidth is measured using the methods detailed in RSS GEN. The measurement bandwidth is set to be at least 1% of the instrument's frequency span.

**FREQUENCY STABILITY**

The EUT is placed inside a temperature chamber with all support and test equipment located outside of the chamber. The temperature is varied across the specified frequency range in 10 degree increments with frequency measurements made at each temperature step. The EUT is allowed enough time to stabilize at each temperature variation.

The spectrum analyzer is configured to give a 5- or 6-digit display for the marker-frequency function. The spectrum analyzer's built-in frequency counter is used to measure the maximum deviation of the fundamental frequency at each temperature. Where possible the device is set to transmit an unmodulated signal. Where this is not possible the frequency drift is determined by finding a stable point on the signal (e.g. the null at the centre of an OFDM signal) or by calculating a centre frequency based on the upper and lower XdB points (where X is typically 6dB or 10dB) on the signal's skirts.

**RADIATED EMISSIONS MEASUREMENTS**

Radiated spurious emissions measurements are made in accordance with ANSI C63.26 by measuring the field strength of the emissions from the device at a specific test distance and comparing them to a field strength limit. Where the field strength limit is specified at a longer distance than the measurement distance the measurement is extrapolated to the limit distance.

All radiated emissions measurements are performed in two phases. A preliminary scan of emissions is conducted in either an anechoic chamber or on an OATS during which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed across the complete frequency range of interest and at each operating frequency identified in the reference standard. One or more of these is with the antenna polarized vertically while the one or more of these is with the antenna polarized horizontally. Initial scans are made using a peak detector (RBW=VBW) and using scan rates to ensure that the EUT transmits before the sweep moves out of each resolution bandwidth (for transmit mode).

During the preliminary scans, the EUT is rotated through 360°, the antenna height is varied and cable positions are varied to determine the highest emission relative to the limit. For transmitter spurious emissions, where the limit is expressed as an effective radiated power, the eirp or erp is converted to a field strength limit.

Final measurements are made on an OATS or in a semi-anechoic chamber at the significant frequencies observed during the preliminary scan(s) using the same process of rotating the EUT and raising/lowering the measurement antenna to find the highest level of the emission. The field strength is recorded and, for receiver spurious emissions, compared to the field strength limit. For the final measurement the appropriate detectors (average, peak, normal, sample, quasi-peak) are used. For receiver measurements below 1GHz the detector is a Quasi-Peak detector, above 1GHz a peak detector is used and the peak value (RB=VB=1MHz) and average value (RB=1MHz, VB=10Hz) are recorded.

**INSTRUMENTATION**

An EMI receiver as specified in CISPR 16-1-1 is used for radiated emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 7000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary.

For measurements above the frequency range of the receivers and for all conducted measurements a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis.

Measurement bandwidths for the test instruments are set in accordance with the requirements of the standards referenced in this document.

Software control is used to correct the measurements for transducer factors (e.g. antenna) and the insertion loss of cables, attenuators and other series elements to obtain the final measurement value. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are exported in a graphic and/or tabular format, as appropriate.

**FILTERS/ATTENUATORS**

External filters and precision attenuators are often connected between the EUT antenna port or receiving antenna and the test receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

**ANTENNAS**

A combination of biconical, log periodic or bi-log antennas are used to cover the range from 30 MHz to 1000 MHz. Broadband antennas or tuned dipole antennas are used over the entire 25 to 1000 MHz frequency range as the reference antenna for substitution measurements.

Above 1000 MHz, a dual-ridge guide horn antenna or octave horn antenna are used as reference and measurement antennas.

The antenna calibration factors are included in site factors that are programmed into the test receivers and instrument control software when measuring the radiated field strength.

**ANTENNA MAST AND EQUIPMENT TURNTABLE**

The antennas used to measure the radiated electric field strength are mounted on a non-conductive antenna mast equipped with a motor-drive to vary the antenna height.

Table mounted devices are placed on a non-conductive table at a height of 80 centimeters above the floor. Floor mounted equipment is placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor. The EUT is positioned on a motorized turntable to allow it to be rotated during testing to determine the angle with the highest level of emissions.

**SAMPLE CALCULATIONS****SAMPLE CALCULATIONS - CONDUCTED SPURIOUS EMISSIONS**

Measurements are compared directly to the conducted emissions specification limit (decibel form). The calculation is as follows:

$$R_T - S = M$$

where:

- $R_T$  = Measured value in dBm
- $S$  = Specification Limit in dBm
- $M$  = Margin to Specification in +/- dB

**SAMPLE CALCULATIONS –RADIATED FIELD STRENGTH**

Measurements of radiated field strength are compared directly to the specification limit (decibel form). The receiver and/or control software corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor is used when measurements are made at a test distance that is different to the specified limit distance by using the following formula:

$$F_d = 20 * \text{LOG}_{10} (D_m/D_s)$$

where:

$F_d$  = Distance Factor in dB

$D_m$  = Measurement Distance in meters

$D_s$  = Specification Distance in meters

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

$$F_d = 40 * \text{LOG}_{10} (D_m/D_s)$$

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

$R_r$  = Receiver Reading in dBuV/m

$F_d$  = Distance Factor in dB

$R_c$  = Corrected Reading in dBuV/m

$L_s$  = Specification Limit in dBuV/m

$M$  = Margin in dB Relative to Spec

**SAMPLE CALCULATIONS –RADIATED POWER**

The erp/eirp limits for transmitter spurious measurements are converted to a field strength in free space using the following formula:

$$E = \frac{\sqrt{30 P G}}{d}$$

where:

- E = Field Strength in V/m
- P = Power in Watts
- G = Gain of isotropic antenna (numeric gain) = 1
- D = measurement distance in meters

The field strength limit is then converted to decibel form (dBuV/m) and the margin of a given emission peak relative to the limit is calculated (refer to SAMPLE CALCULATIONS –RADIATED FIELD STRENGTH).

When substitution measurements are required (all signals with less than 20dB of margin relative to the calculated field strength limit) the eirp of the spurious emission is calculated using:

$$P_{EUT} = P_S - (E_S - E_{EUT})$$

and

$$P_S = G + P_{in}$$

where:

- $P_S$  = effective isotropic radiated power of the substitution antenna (dBm)
- $P_{in}$  = power input to the substitution antenna (dBm)
- G = gain of the substitution antenna (dBi)
- $E_S$  = field strength the substitution antenna (dBm) at eirp  $P_S$
- $E_{EUT}$  = field strength measured from the EUT

Where necessary the effective isotropic radiated power is converted to effective radiated power by subtracting the gain of a dipole (2.2dBi) from the eirp value.

**RADIATED SPURIOUS EMISSIONS SPECIFICATION LIMITS**

The table below shows the limits for the spurious emissions as detailed in FCC Part 95.

| Frequency<br>Range<br>(MHz) | Limit<br>( $\mu\text{V/m}$ @ 3m) | Limit<br>(dB $\mu\text{V/m}$ @ 3m) |
|-----------------------------|----------------------------------|------------------------------------|
| 30 to 88                    | 100                              | 40                                 |
| 88 to 216                   | 150                              | 43.5                               |
| 216 to 960                  | 200                              | 46.0                               |
| Above 960                   | 500                              | 54.0                               |

## Appendix A Test Equipment Calibration Data

| <u>Manufacturer</u>                                    | <u>Description</u>                                                        | <u>Model</u>        | <u>Asset #</u> | <u>Calibrated</u> | <u>Cal Due</u> |
|--------------------------------------------------------|---------------------------------------------------------------------------|---------------------|----------------|-------------------|----------------|
| <b>Radiated Emissions, 25 - 4,050 MHz, 01-Nov-18</b>   |                                                                           |                     |                |                   |                |
| EMCO                                                   | Antenna, Horn, 1-18 GHz (SA40-Blu)                                        | 3115                | 1386           | 10/8/2018         | 10/8/2020      |
| Sunol Sciences                                         | Biconilog, 30-3000 MHz                                                    | JB3                 | 1549           | 5/30/2017         | 5/30/2019      |
| Rohde & Schwarz                                        | EMI Test Receiver, 20 Hz-7 GHz                                            | ESIB 7              | 9482           | 10/13/2018        | 10/13/2019     |
| Hewlett Packard                                        | Preamplifier, 1-26.5GHz                                                   | 8449B               | WC068<br>124   | 10/12/2018        | 10/12/2019     |
| <b>LBT and Receiver Blocking, 02-Nov-18</b>            |                                                                           |                     |                |                   |                |
| Agilent Technologies                                   | PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX, | E4446A              | 2139           | 7/27/2018         | 7/27/2019      |
| Agilent Technologies                                   | MXG Analog Signal Generator 6 GHz                                         | N5181A              | 2146           | 3/7/2018          | 3/7/2019       |
| Agilent Technologies                                   | PSG, Vector Signal Generator, (250kHz - 20GHz)                            | E8267D              | 3011           | 2/26/2018         | 2/26/2019      |
| <b>Conducted Emissions - AC Power Ports, 02-Nov-18</b> |                                                                           |                     |                |                   |                |
| Rohde & Schwarz                                        | Pulse Limiter                                                             | ESH3 Z2             | 1398           | 1/8/2018          | 1/8/2019       |
| Rohde & Schwarz                                        | EMI Test Receiver, 20 Hz-7 GHz                                            | ESIB 7              | 1756           | 7/7/2018          | 7/7/2019       |
| Fischer Custom Comm                                    | LISN, 25A, 150kHz to 30MHz, 25 Amp,                                       | FCC-LISN-50-25-2-09 | 2001           | 8/15/2018         | 8/15/2019      |
| <b>Frequency Stability, 05-Nov-18</b>                  |                                                                           |                     |                |                   |                |
| Rohde & Schwarz                                        | Signal Analyzer 20 Hz - 26.5 GHz                                          | FSQ26               | 2327           | 6/25/2018         | 6/25/2019      |

## ***Appendix B Test Data***

TL085867-RA Pages 21 – 38



## EMC Test Data

|                        |                         |                   |                   |
|------------------------|-------------------------|-------------------|-------------------|
| Client:                | Nevro Corporation       | PR Number:        | PR085867          |
| Product                | PW1000                  | T-Log Number:     | TL085867-RA       |
| System Configuration:  |                         | Project Manager:  | Christine Krebill |
| Contact:               | Ryan Greenstreet        | Project Engineer: | David Bare        |
| Emissions Standard(s): | FCC part 95, EN 301 839 | Class:            | -                 |
| Immunity Standard(s):  |                         | Environment:      | Radio             |

## EMC Test Data

For The

**Nevro Corporation**

Product

**PW1000**

Date of Last Test: 11/5/2018



## EMC Test Data

|           |                         |                   |                   |
|-----------|-------------------------|-------------------|-------------------|
| Client:   | Nevro Corporation       | PR Number:        | PR085867          |
| Model:    | PW1000                  | T-Log Number:     | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:  | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Engineer: | David Bare        |
|           |                         | Class:            | -                 |

### Radiated Emissions

(NTS Silicon Valley, Fremont Facility, Semi-Anechoic Chamber)

#### Test Specific Details

Objective: The objective of this test session is to perform engineering evaluation testing of the EUT with respect to the specification listed above.

Date of Test: 11/1/2018  
Test Engineer: David W. Bare  
Test Location: Fremont Chamber #5

Config. Used: 1  
Config Change: None  
EUT Voltage: 120V/60Hz

#### General Test Configuration

The EUT was located on the turntable for radiated emissions testing. The EUT was tested in all three orthogonal orientations. The test distance and extrapolation factor (if applicable) are detailed under each run description.

Note, preliminary testing indicates that the emissions were maximized by orientation of the EUT and elevation of the measurement antenna. Maximized testing indicated that the emissions were maximized by orientation of the EUT, elevation of the measurement antenna, and manipulation of the EUT's interface cables.

**Ambient Conditions:**  
Temperature: 20 °C  
Rel. Humidity: 43 %

#### Summary of Results

| Run # | Test Performed                                          | Limit       | Result | Value / Margin                     |
|-------|---------------------------------------------------------|-------------|--------|------------------------------------|
| 2     | Fundamental Signal Field Strength                       | FCC Part 95 | Pass   | 84.9 dBuV/m (-16.3 dBm eirp)       |
| 2     | Transmitter Radiated Spurious Emissions, 30 - 4,050 MHz | FCC Part 95 | Pass   | 39.4 dBμV/m @ 132.00 MHz (-4.1 dB) |
| 3     | Spurious Emissions Receive/Stand-By Mode 30 - 1,300 MHz | FCC Part 15 | Pass   | 39.4 dBμV/m @ 132.00 MHz (-4.1 dB) |
| 4     | Bandwidth                                               | FCC Part 95 | Pass   | 252 kHz (Limit is 300 kHz)         |

#### Modifications Made During Testing

Modifications are detailed under each run description.

#### Deviations From The Standard

Deviations, if any, are detailed under each run description.

#### Sample Notes

Sample S/N: 11080-0000106



## EMC Test Data

|           |                         |                   |                   |
|-----------|-------------------------|-------------------|-------------------|
| Client:   | Nevro Corporation       | PR Number:        | PR085867          |
| Model:    | PW1000                  | T-Log Number:     | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:  | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Engineer: | David Bare        |
|           |                         | Class:            | -                 |

### Run #1: Radiated Emissions, 30-4050 MHz, Fundamental and Transmitter Spurious Emissions

Tests were performed on the sample in three orientations to determine orientation with highest emissions.

The results showed that the highest emissions are with the device flat on the support so the device was placed in this orientation for final tests.

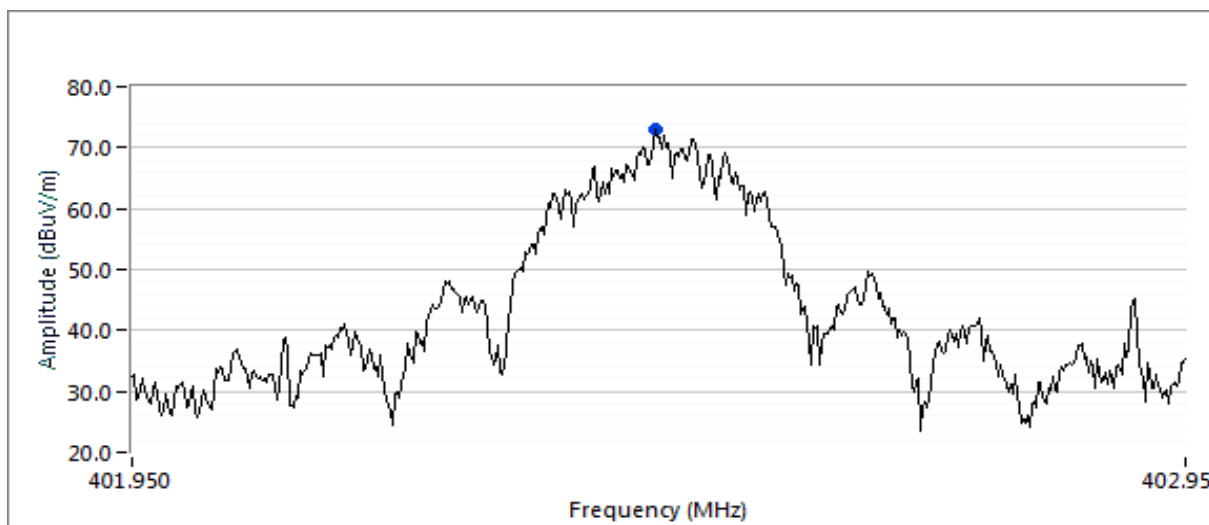
### Run #2: Radiated Emissions, 30-4050 MHz, Fundamental and Transmitter Spurious Emissions

| Frequency Range | Test Distance | Limit Distance | Extrapolation Factor |
|-----------------|---------------|----------------|----------------------|
| 30 - 4,050 MHz  | 3             | 3              | 0.0                  |

Note: The limit in part 95 for the fundamental signal is 85.2 dBuV/m Peak. Spurious emissions must comply with the Part 95 limits which are the same as 15.209 limits except in the 250 kHz range adjacent to the 402-405 MHz band and in-band more than 150kHz from the fundamental frequency (65.2 dBuV/m in 3kHz RB).

Note: The field strength of any spurious emissions may not exceed the field strength of the fundamental signal.

Note: The frequency scans plot below are obtained using a peak detector. Final measurements are made at specific frequencies observed during the scans using the detector specified after maximizing the amplitude of each emission.

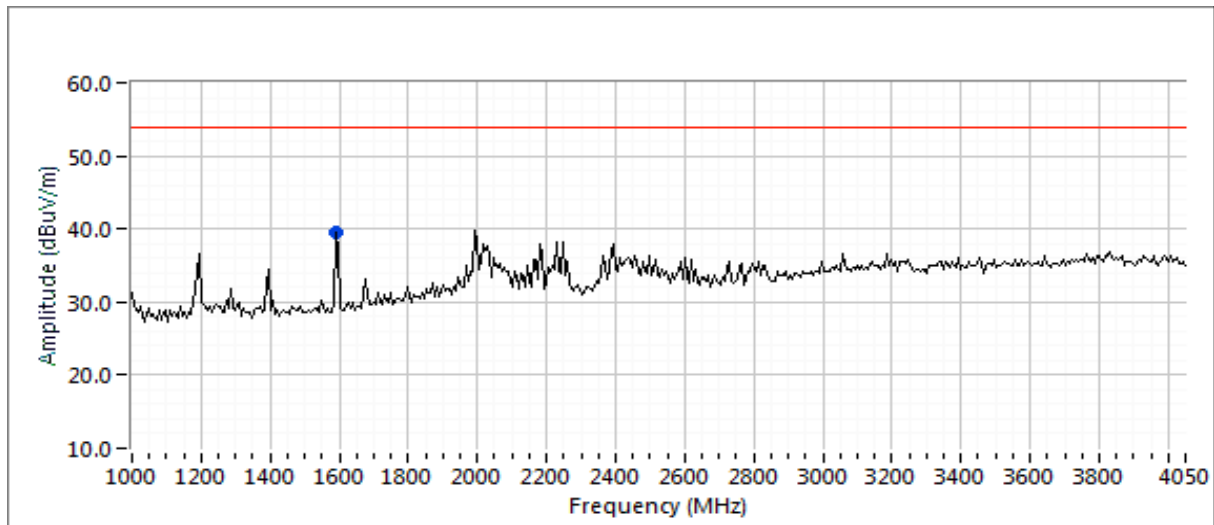
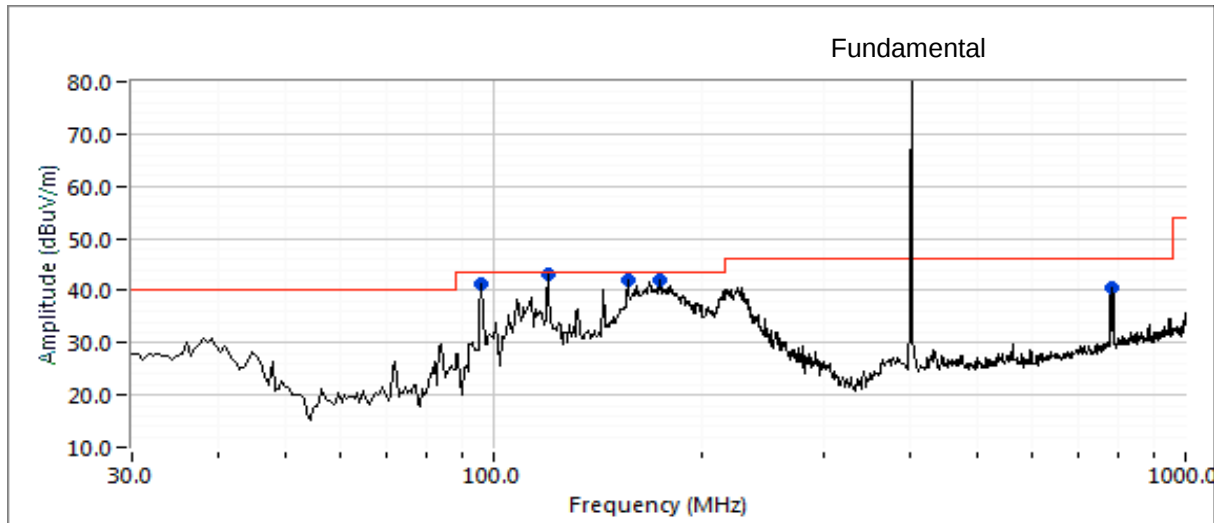


In-band with RB=3 kHz



## EMC Test Data

|           |                         |                   |                   |
|-----------|-------------------------|-------------------|-------------------|
| Client:   | Nevro Corporation       | PR Number:        | PR085867          |
| Model:    | PW1000                  | T-Log Number:     | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:  | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Engineer: | David Bare        |
|           |                         | Class:            | -                 |





## EMC Test Data

|           |                         |                   |                   |
|-----------|-------------------------|-------------------|-------------------|
| Client:   | Nevro Corporation       | PR Number:        | PR085867          |
| Model:    | PW1000                  | T-Log Number:     | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:  | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Engineer: | David Bare        |
|           |                         | Class:            | -                 |

### Low Channel 402.45MHz

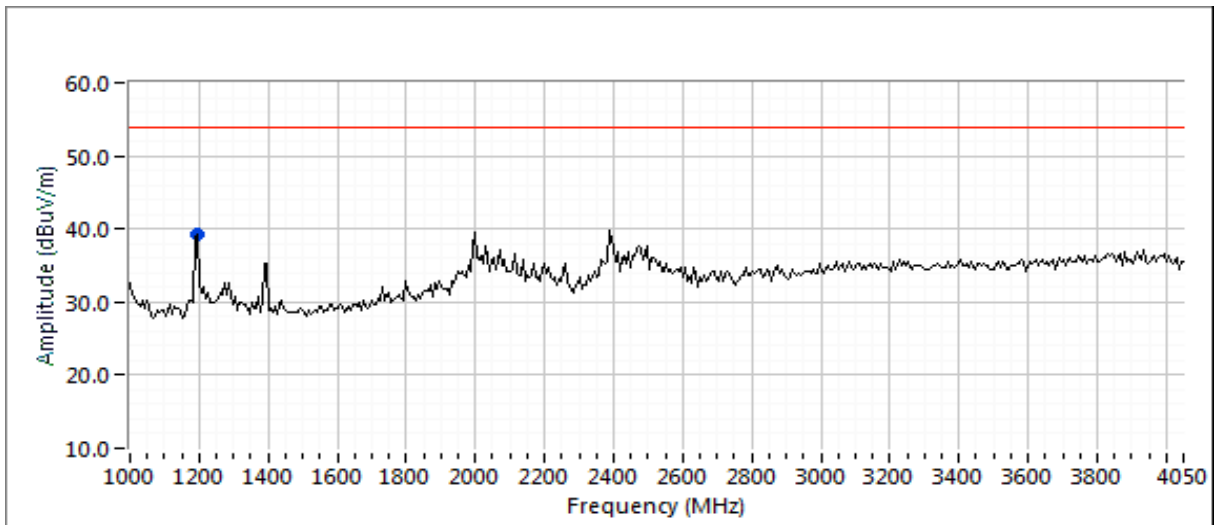
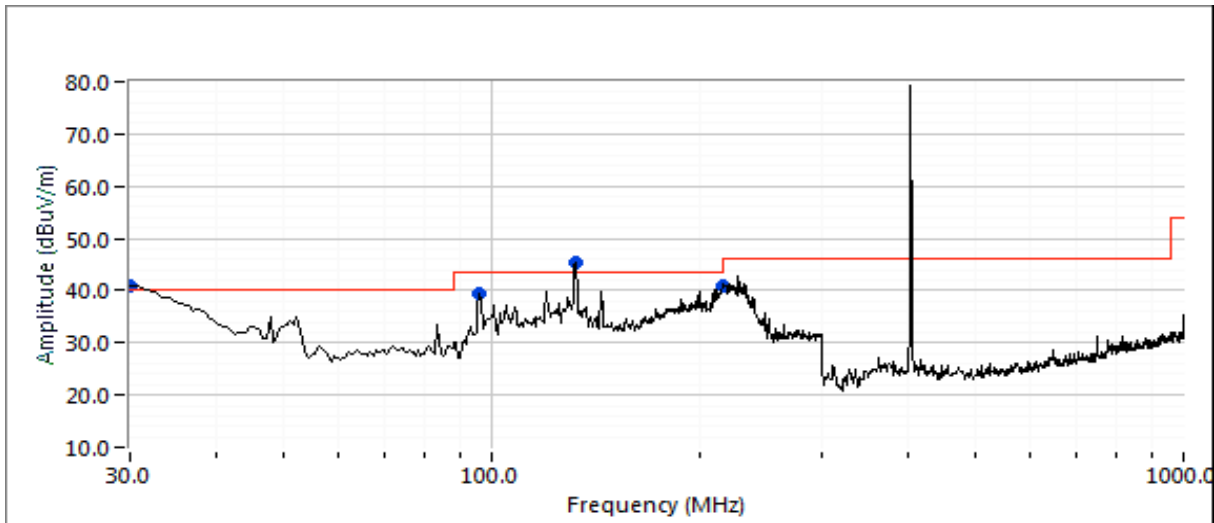
| Frequency                        | Level        | Pol | FCC Part 95 |        | Detector  | Azimuth | Height | Comments         |
|----------------------------------|--------------|-----|-------------|--------|-----------|---------|--------|------------------|
| MHz                              | dB $\mu$ V/m | v/h | Limit       | Margin | Pk/QP/Avg | degrees | meters |                  |
| Fundamental and inband maximized |              |     |             |        |           |         |        |                  |
| 402.450                          | 84.9         | V   | 85.2        | -0.3   | Peak      | 98      | 1.5    | RB=1 MHz         |
| 402.447                          | 72.9         | V   | 85.2        | -12.3  | Peak      | 322     | 1.5    | RB=3 kHz         |
| 402.247                          | 48.2         | V   | 65.2        | -17.0  | Peak      | 322     | 1.5    | RB=3 kHz; Note 1 |
| 402.647                          | 49.7         | V   | 65.2        | -15.5  | Peak      | 332     | 1.5    | RB=3 kHz; Note 1 |
| Preliminary spurious             |              |     |             |        |           |         |        |                  |
| 96.015                           | 41.1         | H   | 43.5        | -2.4   | Peak      | 132     | 2.0    | USB related      |
| 120.007                          | 43.1         | H   | 43.5        | -0.4   | Peak      | 298     | 2.5    | USB related      |
| 156.547                          | 42.1         | H   | 43.5        | -1.4   | Peak      | 231     | 1.5    | Broadband        |
| 173.029                          | 41.9         | H   | 43.5        | -1.6   | Peak      | 201     | 1.5    | Broadband        |
| 786.162                          | 40.6         | V   | 46.0        | -5.4   | Peak      | 115     | 3.0    |                  |
| Final maximized spurious         |              |     |             |        |           |         |        |                  |
| 96.015                           | 37.4         | H   | 43.5        | -6.1   | QP        | 147     | 2.2    | QP (1.00s)       |
| 120.007                          | 39.0         | H   | 43.5        | -4.5   | QP        | 311     | 2.5    | QP (1.00s)       |
| 156.547                          | 33.8         | H   | 43.5        | -9.7   | QP        | 230     | 1.5    | QP (1.00s)       |
| 173.029                          | 34.9         | H   | 43.5        | -8.6   | QP        | 198     | 1.3    | QP (1.00s)       |
| 786.162                          | 34.1         | V   | 46.0        | -11.9  | QP        | 139     | 3.1    | QP (1.00s)       |
| 1594.100                         | 23.5         | V   | 54.0        | -30.5  | AVG       | 2       | 1.7    | AVG (0.10s)      |
| 1594.100                         | 42.1         | V   | 74.0        | -31.9  | PK        | 2       | 1.7    | PK (0.10s)       |

Note 1: Highest emission within 402-405 MHz band more than 150 kHz from the operating frequency.



## EMC Test Data

|           |                         |                   |                   |
|-----------|-------------------------|-------------------|-------------------|
| Client:   | Nevro Corporation       | PR Number:        | PR085867          |
| Model:    | PW1000                  | T-Log Number:     | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:  | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Engineer: | David Bare        |
|           |                         | Class:            | -                 |





## EMC Test Data

|           |                         |                   |                   |
|-----------|-------------------------|-------------------|-------------------|
| Client:   | Nevro Corporation       | PR Number:        | PR085867          |
| Model:    | PW1000                  | T-Log Number:     | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:  | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Engineer: | David Bare        |
|           |                         | Class:            | -                 |

### High Channel 404.55MHz

| Frequency                | Level        | Pol | FCC Part 95 |        | Detector  | Azimuth | Height | Comments    |
|--------------------------|--------------|-----|-------------|--------|-----------|---------|--------|-------------|
| MHz                      | dB $\mu$ V/m | v/h | Limit       | Margin | Pk/QP/Avg | degrees | meters |             |
| Fundamental maximized    |              |     |             |        |           |         |        |             |
| 404.550                  | 81.2         | H   | 85.2        | -4.0   | PK        | 282     | 1.0    | RB=1 MHz    |
| Preliminary spurious     |              |     |             |        |           |         |        |             |
| 30.001                   | 40.9         | H   | 40.0        | 0.9    | Peak      | 255     | 4.0    | Broadband   |
| 96.001                   | 39.5         | H   | 43.5        | -4.0   | Peak      | 165     | 3.5    | USB related |
| 132.000                  | 45.3         | H   | 43.5        | 1.8    | Peak      | 96      | 1.5    | USB related |
| 215.879                  | 41.0         | H   | 43.5        | -2.5   | Peak      | 196     | 1.5    | Broadband   |
| Final maximized spurious |              |     |             |        |           |         |        |             |
| 30.001                   | 31.6         | H   | 40.0        | -8.4   | QP        | 257     | 3.5    | QP (1.00s)  |
| 96.001                   | 37.7         | H   | 43.5        | -5.8   | QP        | 151     | 2.9    | QP (1.00s)  |
| 132.000                  | 39.4         | H   | 43.5        | -4.1   | QP        | 93      | 2.0    | QP (1.00s)  |
| 215.879                  | 35.6         | H   | 43.5        | -7.9   | QP        | 211     | 1.2    | QP (1.00s)  |
| 1196.800                 | 42.5         | V   | 74.0        | -31.5  | PK        | 360     | 2.5    | PK (0.10s)  |
| 1196.800                 | 25.0         | V   | 54.0        | -29.0  | AVG       | 360     | 2.5    | AVG (0.10s) |

### Run #3: Radiated Spurious Emissions, Receive Mode, 30 - 1,300 MHz

Since all of the emisisions except the fundamental when the radio is transmitting must meet the receiver limits of Part 15, no additional test is required for receive mode.



## EMC Test Data

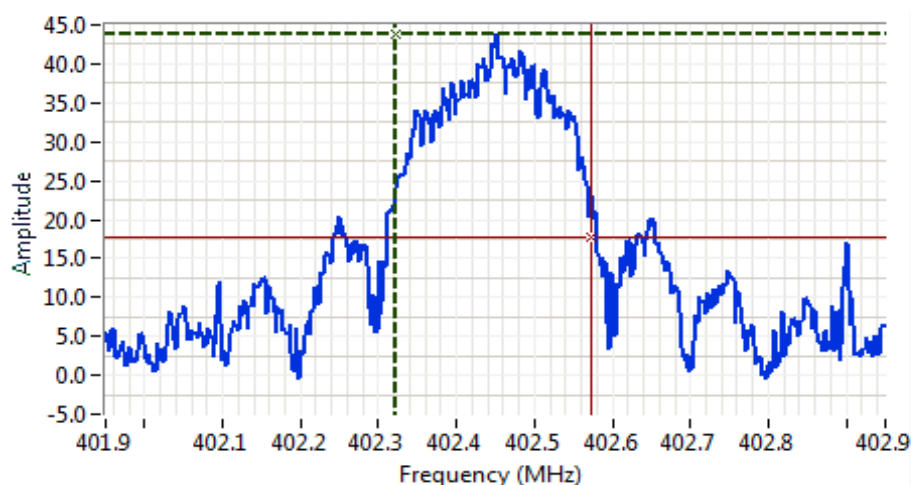
|           |                         |                   |                   |
|-----------|-------------------------|-------------------|-------------------|
| Client:   | Nevro Corporation       | PR Number:        | PR085867          |
| Model:    | PW1000                  | T-Log Number:     | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:  | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Engineer: | David Bare        |
|           |                         | Class:            | -                 |

### Run #4: Bandwidth Measurement

Date of Test: 11/1/2018  
 Test Engineer: David W. Bare  
 Test Location: Fremont Chamber #7

Config. Used: 1  
 Config Change: None  
 EUT Voltage: 120V/60Hz

| Frequency (MHz) | Resolution Bandwidth | Video Bandwidth | Bandwidth (kHz) |
|-----------------|----------------------|-----------------|-----------------|
| 402.45          | 3 kHz                | 30 kHz          | 99%             |
|                 |                      |                 | 252             |



#### Analyzer Settings

Rohde&Schwarz, ESI  
 CF: 402.450 MHz  
 SPAN: 1.000 MHz  
 RB: 3.00 kHz  
 VB: 30.0 kHz  
 Detector: POS  
 Attn: 10 DB  
 RL Offset: 0.0 DB  
 Sweep Time: 280.0ms  
 Ref Lvl: 100.0 DBUV

#### Comments

Occupied BW = 252 kHz

|        |          |      |  |
|--------|----------|------|--|
| Cursor | 402.3220 | 43.7 |  |
| Cursor | 402.5740 | 17.7 |  |

Delta Freq. 252 kHz  
 Delta Amplitude 26.0



|         |                                                                                                                                                                                                 |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Note 1: | 99% bandwidth measured in accordance with ANSI C63.10, with RB between 1% and 5% of the measured bandwidth and $VB \geq 3 \cdot RB$ and $Span \geq 1.5\%$ and $\leq 5\%$ of measured bandwidth. |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## EMC Test Data

|           |                         |                      |                   |
|-----------|-------------------------|----------------------|-------------------|
| Client:   | Nevro Corporation       | Job Number:          | PR085867          |
| Model:    | PW1000                  | T-Log Number:        | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:     | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Coordinator: | David Bare        |
|           |                         | Class:               | N/A               |

### FCC Part 95.2565 & EN 301 839 Frequency Stability

#### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

#### General Test Configuration

All measurements are made with the EUT's rf port connected to the measurement instrument via an attenuator or dc-block if necessary. For frequency stability measurements the EUT was placed inside an environmental chamber.

**Ambient Conditions:**

|                |       |
|----------------|-------|
| Temperature:   | 21 °C |
| Rel. Humidity: | 42 %  |

#### Summary of Results

| Run # |  | Test Performed      | Limit  | Pass / Fail | Result / Margin |
|-------|--|---------------------|--------|-------------|-----------------|
| 1     |  | Frequency Stability | 100ppm | Pass        | 18.9 ppm        |

#### Modifications Made During Testing

No modifications were made to the EUT during testing

#### Deviations From The Standard

No deviations were made from the requirements of the standard.

#### Sample Notes

Sample S/N: 11080-0000122



## EMC Test Data

|           |                         |                      |                   |
|-----------|-------------------------|----------------------|-------------------|
| Client:   | Nevro Corporation       | Job Number:          | PR085867          |
| Model:    | PW1000                  | T-Log Number:        | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:     | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Coordinator: | David Bare        |
|           |                         | Class:               | N/A               |

### Run #1: Frequency Stability

Date of Test: 11/5/2018

Test Engineer: Jude Semana

Test Location: Fremont EMC Lab #3

Config. Used: 1

Config Change: None

EUT Voltage: 100 - 240V, 60 Hz

Nominal Frequency: 402.45 MHz

### Frequency Stability Over Temperature

The EUT was soaked at each temperature for a minimum of 30 minutes prior to making the measurements to ensure the EUT and chamber had stabilized at that temperature.

| Temperature | Frequency Measured | Drift |       |
|-------------|--------------------|-------|-------|
| (Celsius)   | (MHz)              | (Hz)  | (ppm) |
| 0           | 402.447596         | -2404 | -6.0  |
| 10          | 402.447115         | -2885 | -7.2  |
| 20          | 402.449199         | -801  | -2.0  |
| 30          | 402.445439         | -4561 | -11.3 |
| 40          | 402.442388         | -7612 | -18.9 |
| 50          | 402.445593         | -4407 | -11.0 |
| 55          | 402.447997         | -2003 | -5.0  |
| Worst case: |                    | -7612 | -18.9 |

### Frequency Stability Over Input Voltage

#### Nominal Voltage is 100-240VAC

| Voltage     | Frequency Measured | Drift |       |
|-------------|--------------------|-------|-------|
| (AC)        | (MHz)              | (Hz)  | (ppm) |
| 85%         | 402.447276         | -2724 | -6.8  |
| 115%        | 402.447276         | -2724 | -6.8  |
| Worst case: |                    | -2724 | -6.8  |

| Voltage | Frequency Measured | Drift |       |
|---------|--------------------|-------|-------|
| (AC)    | (MHz)              | (Hz)  | (ppm) |
| 73      | 402.447276         | -2724 | -6.8  |

Note 1: Maximum drift of fundamental frequency before it shut down at 73 VAC was 0 Hz



## EMC Test Data

|           |                         |                      |                   |
|-----------|-------------------------|----------------------|-------------------|
| Client:   | Nevro Corporation       | Job Number:          | PR085867          |
| Model:    | PW1000                  | T-Log Number:        | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:     | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Coordinator: | David Bare        |
|           |                         | Class:               | N/A               |

### LBT, FCC Part 95 and EN 301 839

#### Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 11/2/2018

Config. Used: 1

Test Engineer: David W. Bare

Config Change: None

Test Location: Fremont Chamber #2

EUT Voltage: 120V/60Hz

#### General Test Configuration

All measurements are made with the EUT's rf port connected to the signal generating and measurement instruments via combiners.

#### Ambient Conditions:

Temperature: 21 °C

Rel. Humidity: 40 %

#### Summary of Results

| Run # |  | Test                                                | Requirement / Limit                                      | Result / Margin |
|-------|--|-----------------------------------------------------|----------------------------------------------------------|-----------------|
| 1     |  | LBT threshold power level                           | EUT shall select only the Least Interfered Channel (LIC) | Pass            |
| 2     |  | Monitoring system bandwidth                         | $\geq 20$ dB EBW                                         | Pass            |
| 3     |  | Monitoring system scan cycle time                   | $\leq 5$ s                                               | Pass            |
| 4     |  | Monitoring system Minimum Channel monitoring period | 0.1 ms / 10 ms                                           | Pass            |
| 5     |  | Channel access based on ambient level above PTh     | Correct channel selection                                | Pass            |
| 6     |  | Discontinuation of MICS session                     | $\leq 5$ seconds                                         | Pass            |
| 7     |  | Use of pre-scanned alternative channel              | The EUT does not use this feature                        | N/A             |

#### Modifications Made During Testing

The following modifications were made to the EUT prior to testing in order to facilitate testing:

The internal antenna was removed and a short coax to an SMA connector was connected instead to allow conducted testing. Special firmware was used to allow continuous attempts to establish a communication session.

#### Deviations From The Standard

No deviations were made from the requirements of the standard.

#### Sample Notes

Sample S/N: 11080-0000122



## EMC Test Data

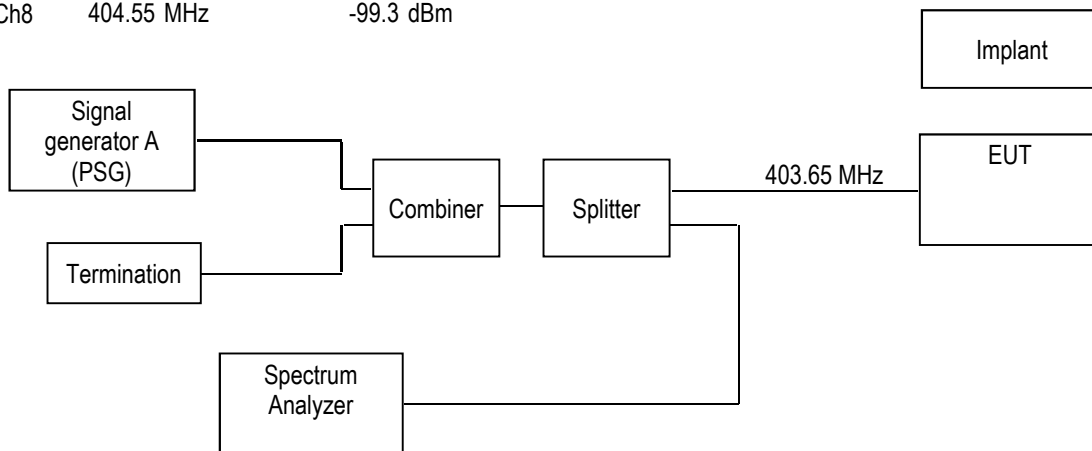
|           |                         |                      |                   |
|-----------|-------------------------|----------------------|-------------------|
| Client:   | Nevro Corporation       | Job Number:          | PR085867          |
| Model:    | PW1000                  | T-Log Number:        | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:     | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Coordinator: | David Bare        |
|           |                         | Class:               | N/A               |

### Run #1: LBT Threshold power level

#### Test Configuration Details:

The Signal Generator A (PSG vector signal generator) was configured to produce 7 un-modulated carriers at 7 of the 8 channels at;

|     |            |            |                                        |
|-----|------------|------------|----------------------------------------|
| Ch1 | 402.45 MHz | -99.3 dBm  | 3 dB above minimum LBT threshold level |
| Ch2 | 402.75 MHz | Turned off |                                        |
| Ch3 | 403.05 MHz | -99.3 dBm  |                                        |
| Ch4 | 403.35 MHz | -99.3 dBm  |                                        |
| Ch5 | 403.65 MHz | -99.3 dBm  |                                        |
| Ch6 | 403.95 MHz | -99.3 dBm  |                                        |
| Ch7 | 404.25 MHz | -99.3 dBm  |                                        |
| Ch8 | 404.55 MHz | -99.3 dBm  |                                        |



Calculated Antenna Gain: 6.3 dBi (from measured field strength and measured output power)

Minimum LBT threshold power =  $10 \log B \text{ (Hz)} - 150 + G \text{ (dBi)}$

When B: 252000 Hz (20 dB bandwidth)

Minimum LBT threshold power = -102.3 dBm

#### EUT Mode:

The EUT was placed in search mode looking for an implanted device. At this amplitude, the EUT must initiate communications only on the channel 2 (402.75 MHz) not generated by the signal generator.

#### Test result:

The EUT complies with this requirement. EUT starts to initiate communication only at channel 2.



## EMC Test Data

|           |                         |                      |                   |
|-----------|-------------------------|----------------------|-------------------|
| Client:   | Nevro Corporation       | Job Number:          | PR085867          |
| Model:    | PW1000                  | T-Log Number:        | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:     | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Coordinator: | David Bare        |
|           |                         | Class:               | N/A               |

### Run #2: Monitoring system bandwidth

#### Test Configuration Details:

The PSG signal generator was configured to produce 7 un-modulated carriers at 7 of the 8 channels at;

|     |            |            |                                        |
|-----|------------|------------|----------------------------------------|
| Ch1 | 402.45 MHz | -99.3 dBm  | 3 dB above minimum LBT threshold level |
| Ch2 | 402.75 MHz | Turned off |                                        |
| Ch3 | 403.05 MHz | -99.3 dBm  |                                        |
| Ch4 | 403.35 MHz | -99.3 dBm  |                                        |
| Ch5 | 403.65 MHz | -99.3 dBm  |                                        |
| Ch6 | 403.95 MHz | -99.3 dBm  |                                        |
| Ch7 | 404.25 MHz | -99.3 dBm  |                                        |
| Ch8 | 404.55 MHz | -99.3 dBm  |                                        |

|     |         |              |     |              |
|-----|---------|--------------|-----|--------------|
| Pa: | -87 dBm | @402.750 MHz |     |              |
| Pb: | -81 dBm | @402.624 MHz | D1: | 6.0 dB Pass  |
| Pc: | -77 dBm | @402.876 MHz | D2: | 10.0 dB Pass |

#### Test Result

Pb – Pa = 6dB and Pc – Pa = 10dB, the EUT complies with the 20 dB monitoring bandwidth requirement.



## EMC Test Data

|           |                         |                      |                   |
|-----------|-------------------------|----------------------|-------------------|
| Client:   | Nevro Corporation       | Job Number:          | PR085867          |
| Model:    | PW1000                  | T-Log Number:        | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:     | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Coordinator: | David Bare        |
|           |                         | Class:               | N/A               |

### Run #3: Monitoring system scan cycle time

Note: The EUT performs a clear channel assessment prior to initiating any transmission

#### Test Configuration Details:

|     |            |           |                                                   |
|-----|------------|-----------|---------------------------------------------------|
| Ch1 | 402.45 MHz | -99.3 dBm | 3 dB above minimum LBT threshold level            |
| Ch2 | 402.75 MHz | -96.3     | Turned off after starting a communication session |
| Ch3 | 403.05 MHz | -99.3 dBm |                                                   |
| Ch4 | 403.35 MHz | -99.3 dBm |                                                   |
| Ch5 | 403.65 MHz | -99.3 dBm |                                                   |
| Ch6 | 403.95 MHz | -99.3 dBm |                                                   |
| Ch7 | 404.25 MHz | -99.3 dBm |                                                   |
| Ch8 | 404.55 MHz | -99.3 dBm |                                                   |

#### Test result:

The EUT transmits on the clear channel within 1 second after the signal on that channel is switched off.



## EMC Test Data

|           |                         |                      |                   |
|-----------|-------------------------|----------------------|-------------------|
| Client:   | Nevro Corporation       | Job Number:          | PR085867          |
| Model:    | PW1000                  | T-Log Number:        | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:     | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Coordinator: | David Bare        |
|           |                         | Class:               | N/A               |

### Run #4: Monitoring system Minimum Channel monitoring period

#### Test Configuration Details:

|     |            |           |     |                                        |
|-----|------------|-----------|-----|----------------------------------------|
| Ch1 | 402.45 MHz | -96.3 dBm |     |                                        |
| Ch2 | 402.75 MHz | -99.3 dBm | MXG | 3 dB above minimum LBT threshold level |
| Ch3 | 403.05 MHz | -96.3 dBm |     |                                        |
| Ch4 | 403.35 MHz | -96.3 dBm |     |                                        |
| Ch5 | 403.65 MHz | -96.3 dBm |     |                                        |
| Ch6 | 403.95 MHz | -96.3 dBm |     |                                        |
| Ch7 | 404.25 MHz | -96.3 dBm |     |                                        |
| Ch8 | 404.55 MHz | -96.3 dBm |     |                                        |

The MXG signal generator was configured to produce 1 un-modulated carrier at channel (402.75 MHz). The output of the generators were combined. The amplitude of the MXG generator was adjusted to be equal to the amplitude of the PSG generator.

The output of the PSG generator was switched off and the EUT was set to initiate a transmission. The EUT did not transmit at 402.75 MHz. The output of the PSG was switched back on and the amplitude increased by 3 dB. The EUT was set to initiate a transmission. The EUT only transmitted at 402.75 MHz. The PSG generator was configured with **pulse modulation** on all the carriers. The modulation was 0.1 ms pulse with a repetition rate of 10 ms corresponding to a silent period between pulses of 9.9 ms. The EUT was set to initiate a transmission 10 times. In each case, the EUT only transmitted at 402.75 MHz.

#### Test result:

The test has been repeated 10 times and the channel selection occurred only on 403.65 MHz in each test run. The EUT complies with this requirement.



## EMC Test Data

|           |                         |                      |                   |
|-----------|-------------------------|----------------------|-------------------|
| Client:   | Nevro Corporation       | Job Number:          | PR085867          |
| Model:    | PW1000                  | T-Log Number:        | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:     | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Coordinator: | David Bare        |
|           |                         | Class:               | N/A               |

### Run #5: Channel access based on ambient level above PTh

#### Test Configuration Details:

|     |            |            |                                         |
|-----|------------|------------|-----------------------------------------|
| Ch1 | 402.45 MHz | -92.3 dBm  | 10 dB above minimum LBT threshold level |
| Ch2 | 402.75 MHz | -105.3 dBm | Increased: -96.3 dBm (MXG)              |
| Ch3 | 403.05 MHz | -92.3 dBm  |                                         |
| Ch4 | 403.35 MHz | -92.3 dBm  |                                         |
| Ch5 | 403.65 MHz | -92.3 dBm  |                                         |
| Ch6 | 403.95 MHz | -92.3 dBm  |                                         |
| Ch7 | 404.25 MHz | -99.3 dBm  | 3 dB above minimum LBT threshold level  |
| Ch8 | 404.55 MHz | -92.3 dBm  |                                         |

The MXG signal generator was configured to produce 1 un-modulated carrier at channel 2 (402.75 MHz) with 3 dB below the threshold level.

The EUT was set to initiate a transmission, it only transmitted at 402.75 MHz. The amplitude of the MXG generator was increased 9 dB and the EUT was set to initiate a transmission. The EUT only selected 404.25 MHz

#### Test result:

The EUT complies with this requirement.



## EMC Test Data

|           |                         |                      |                   |
|-----------|-------------------------|----------------------|-------------------|
| Client:   | Nevro Corporation       | Job Number:          | PR085867          |
| Model:    | PW1000                  | T-Log Number:        | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:     | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Coordinator: | David Bare        |
|           |                         | Class:               | N/A               |

### Run #6: Discontinuation of MICS session

MIC systems shall cease transmission in the event the communications session is interrupted for a period of 5 seconds or more. Once a MICS session is established, it may continue as long as a silent period in two-way communication between co-operating devices does not exceed 5 seconds

#### Test Configuration Details:

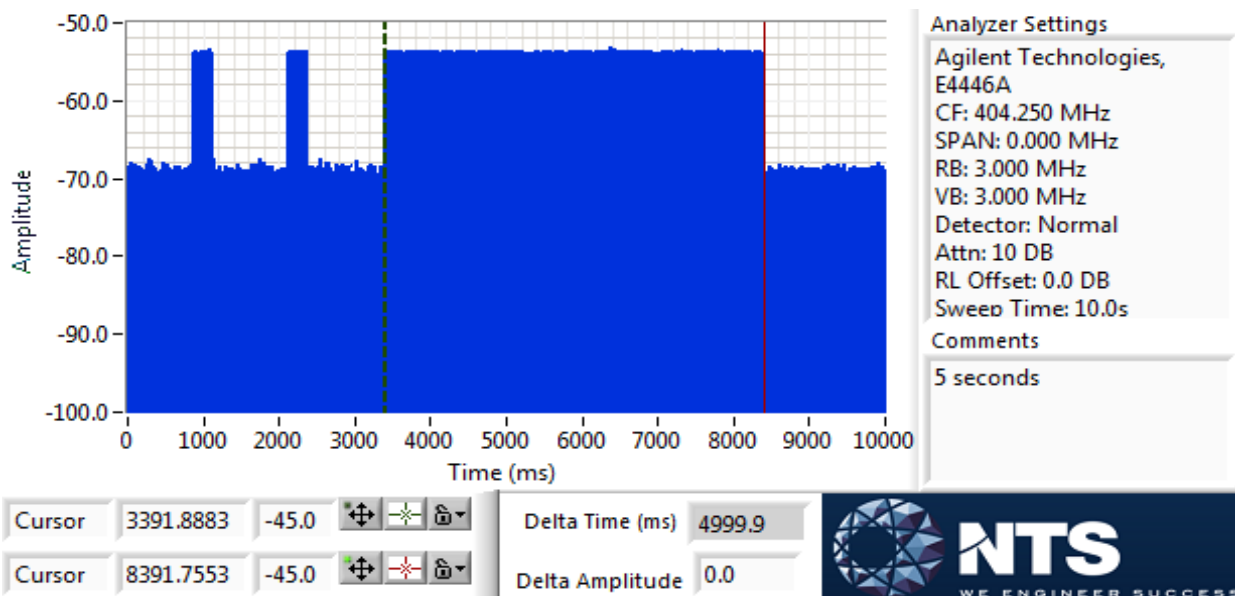
|     |            |           |       |
|-----|------------|-----------|-------|
| Ch1 | 402.45 MHz | -96.2 dBm | (MXG) |
| Ch2 | 402.75 MHz | -96.2 dBm |       |
| Ch3 | 403.05 MHz | -96.2 dBm |       |
| Ch4 | 403.35 MHz | -96.2 dBm |       |
| Ch5 | 403.65 MHz | -99.2 dBm |       |
| Ch6 | 403.95 MHz | -96.2 dBm |       |
| Ch7 | 404.25 MHz | -96.2 dBm |       |
| Ch8 | 404.55 MHz | -96.2 dBm |       |

The MXG signal generator was configured to produce 1 un-modulated carrier at channel 2 (402.75 MHz)

The EUT was set to initiate a transmission to communicate with the implant. The EUT transmitted at 402.75 MHz. The Implant was removed from the test setup to block the communications.. From the point in time when the Implant was blocked to the end of transmissions from the EUT was 5 seconds. After the implant is introduced to the test setup, no transmissions were observed.

#### Test result:

The transmissions from the EUT has stopped in less than 5 seconds and did not re-initiate, the EUT complied with this requirement





## EMC Test Data

|           |                         |                      |                   |
|-----------|-------------------------|----------------------|-------------------|
| Client:   | Nevro Corporation       | Job Number:          | PR085867          |
| Model:    | PW1000                  | T-Log Number:        | TL085867-RA       |
| Contact:  | Ryan Greenstreet        | Project Manager:     | Christine Krebill |
| Standard: | FCC part 95, EN 301 839 | Project Coordinator: | David Bare        |
|           |                         | Class:               | N/A               |

### Run #7: Use of pre-scanned alternative channel

The test is not applicable, The EUT does not use this feature

**Test result:** N/A

***End of Report***

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