

# FCC Testing of the

Trividia Health Inc  
SB-BLE-S036

In accordance with FCC 47 CFR part 15.247

Prepared for: Trividia Health Inc  
2400 NW 55th Court  
Fort Lauderdale, FL 33309

FCC ID: 2ADDB-PET-01

## COMMERCIAL-IN-CONFIDENCE

Date: 13. September 2019

Document Number: TP72152666.200 | Version Number: 01



America

Add value.  
Inspire trust.

| RESPONSIBLE FOR      | NAME                 | DATE               | SIGNATURE |
|----------------------|----------------------|--------------------|-----------|
| Authorized Signatory | Peter Walsh          | 2019 -September-13 |           |
| Testing              | Jean N. Rene         | 2019-September-13  |           |
| Report               | Thierry Jean-Charles | 2019-September-13  |           |

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

FCC Accreditation  
Designation Number US1063 Tampa, FL Test Laboratory

Innovation, Science, and Economic Development Canada  
Accreditation  
Site Number 2087A-2 Tampa, FL Test Laboratory

### EXECUTIVE SUMMARY

Samples of this product were tested and found to be in compliance with 15.247.



A2LA Cert. No. 2955.15

#### DISCLAIMER AND COPYRIGHT

This non-binding report has been prepared by TÜV SÜD America with all reasonable skill and care. The document is confidential to the potential Client and TÜV SÜD America. No part of this document may be reproduced without the prior written approval of TÜV SÜD America. © TÜV SÜD.

#### DISCLAIMER AND COPYRIGHT

Our A2LA Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our A2LA Accreditation. Results of test not covered by our A2LA Accreditation Schedule are marked NUA (Not A2LA Accredited).

TÜV SÜD America  
5610 West Sligh Ave., Suite 100  
Tampa, FL 33634

Phone: 813-284-2715  
[www.tuv-sud-america.com](http://www.tuv-sud-america.com)

TÜV SÜD

TÜV®



Contents

1      **Report Summary .....2**

1.1    Report Modification Record.....2

1.2    Introduction.....3

1.3    Brief Summary of Results .....4

1.4    Product Information .....5

1.5    Deviations from the Standard.....7

1.6    EUT Modification Record .....7

1.7    Test Location .....8

2      **Test Details .....9**

2.1    Antenna Requirements.....9

2.2    Radiated Spurious Emissions into Restricted Frequency Bands..... 10

3      **Test Equipment Information ..... 18**

3.1    General Test Equipment Used ..... 18

4      **Diagram of Test Set-ups ..... 19**

5      **Measurement Uncertainty ..... 22**

6      **Accreditation, Disclaimers and Copyright..... 23**



# 1 Report Summary

## 1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

| Issue | Description of Change | Date of Issue     |
|-------|-----------------------|-------------------|
| 1     | First Issue           | 2019-September-13 |



## 1.2 Introduction

The purpose of this report is to demonstrate compliance with Part 15 Subpart C of the FCC's Code of Federal Regulations Section 15.247 for the tests documented herein.

This evaluation is for a Class 2 permissive change for the integration of the module into a new host configuration (Test Buddy). There are no other changes to the module per the manufacturer.

|                               |                                                                                                                                                                                                                                  |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicant                     | Trividia Health Inc                                                                                                                                                                                                              |
| Manufacturer                  | Trividia Health Inc                                                                                                                                                                                                              |
| Applicant's Email Address     | <a href="mailto:sleone@trividiahealth.com">sleone@trividiahealth.com</a>                                                                                                                                                         |
| Model Number(s)               | SB-BLE-S036                                                                                                                                                                                                                      |
| Serial Number(s)              | A00002097 (host device)                                                                                                                                                                                                          |
| FCC ID                        | 2ADDB-PET-01                                                                                                                                                                                                                     |
| Hardware Version(s)           | Rev. 0 (host device)                                                                                                                                                                                                             |
| Software Version(s)           | V0.22 (host device)                                                                                                                                                                                                              |
| Number of Samples Tested      | 1                                                                                                                                                                                                                                |
| Test Specification/Issue/Date | US Code of Federal Regulations (CFR): Title 47, Part 15, Subpart C: Radio Frequency Devices, Intentional Radiators, 2018                                                                                                         |
| Test Plan/Issue/Date          | 2018-July-13                                                                                                                                                                                                                     |
| Order Number                  | 72152666                                                                                                                                                                                                                         |
| Date                          | 2019-August-27                                                                                                                                                                                                                   |
| Date of Receipt of EUT        | 2019-August-30                                                                                                                                                                                                                   |
| Start of Test                 | 2019-September-03                                                                                                                                                                                                                |
| Finish of Test                | 2019-September-05                                                                                                                                                                                                                |
| Name of Engineer(s)           | Jean N. Rene                                                                                                                                                                                                                     |
| Related Document(s)           | ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices<br>US Code of Federal Regulations (CFR): Title 47, Part 2, Subpart J: Equipment Authorization Procedures, 2018. |



### 1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC Part 15.247 is shown below.

**Table 1.3-1: Test Result Summary**

| Test Parameter                                              | Test Plan (Yes/No) | Test Result | FCC 47 CFR Rule Part | Test Report Page No |
|-------------------------------------------------------------|--------------------|-------------|----------------------|---------------------|
| Antenna Requirement                                         | No                 | Not Tested  | 15.203, 15.204       | 9                   |
| 6 dB Bandwidth                                              | No                 | Not Tested  | 15.247(a)(2)         |                     |
| 99% Bandwidth                                               | No                 | Not Tested  | -----                |                     |
| Peak Output Power                                           | No                 | Not Tested  | 15.247(b)(3)         |                     |
| Band-Edge Compliance of RF Conducted Emissions              | No                 | Not Tested  | 15.247(d)            |                     |
| RF Conducted Spurious Emissions                             | No                 | Not Tested  | 15.247(d)            |                     |
| Radiated Spurious Emissions into Restricted Frequency Bands | Yes                | Pass        | 15.205, 15.209       | 10                  |
| Power Spectral Density                                      | No                 | Not Tested  | 15.247(e)            |                     |
| Power Line Conducted Emissions                              | No                 | Not Tested  | 15.207               |                     |



**1.4 Product Information**

**1.4.1 Technical Description**

The EUT is a Bluetooth Low Energy wireless module. The unit is integrated within a pet blood glucose monitor (Test Buddy).

Technical Details

Mode of Operation: Bluetooth Low Energy (BLE)  
Frequency Range: 2402 MHz - 2480 MHz  
Number of Channels: 40  
Channel Separation: 2 MHz  
Data Rate: 1 Mbps  
Modulations: GFSK  
Antenna Type/Gain: PIFA, -1.5 dBi  
Input Power: 3 VDC (CR2032 lithium battery)

A full description and detailed product specification details are available from the manufacturer.

**Table 1.4.1-1 – Cable Descriptions**

| Cable/Port                                         | Description |
|----------------------------------------------------|-------------|
| The EUT does not use any external accessory cables |             |

**Table 1.4.1-2 – Support Equipment Descriptions**

| Make/Model                         | Description                        |
|------------------------------------|------------------------------------|
| Trividia Health, Inc. / Test Buddy | Host Device, Blood glucose monitor |
| Trividia Health Inc. / EQM001-2775 | Check Strip                        |



## Declaration of Build Status

| EQUIPMENT DESCRIPTION                                                                           |                                                            |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| Model Name/Number                                                                               | TEST BUDDY                                                 |
| Part Number                                                                                     | N/A                                                        |
| Hardware Version                                                                                | Rev. 0 of host device                                      |
| Software Version                                                                                | V0.22 of host device                                       |
| FCC ID (if applicable)                                                                          | 2ADDB-PET-01                                               |
| ISED ID (if applicable)                                                                         | N/A                                                        |
| Technical Description (Please provide a brief description of the intended use of the equipment) | Consumer use to download animal glucose data to smartphone |

| UN-INTENTIONAL RADIATOR                                                                                 |        |
|---------------------------------------------------------------------------------------------------------|--------|
| Highest frequency generated or used in the device or on which the device operates or tunes              | 2480.0 |
| Lowest frequency generated or used in the device or on which the device operates or tunes               | 2402.0 |
| Class A Digital Device (Use in commercial, industrial or business environment) <input type="checkbox"/> |        |
| Class B Digital Device (Use in residential environment only) <input checked="" type="checkbox"/>        |        |

| Power Source |                          |                                     |                 |
|--------------|--------------------------|-------------------------------------|-----------------|
| AC           | Single Phase             | Three Phase                         | Nominal Voltage |
|              | <input type="checkbox"/> | <input type="checkbox"/>            | N/A             |
| External DC  | Nominal Voltage          | Maximum Current                     |                 |
|              | N/A                      | N/A                                 |                 |
| Battery      | Nominal Voltage          | Battery Operating End Point Voltage |                 |
|              | 3V                       | 3V                                  |                 |

| EXTREME CONDITIONS  |   |    |                     |
|---------------------|---|----|---------------------|
| Maximum temperature | + | °C | Minimum temperature |
|                     |   |    | - °C                |

| Ancillaries                                                     |
|-----------------------------------------------------------------|
| Please list all ancillaries which will be used with the device. |
|                                                                 |

I hereby declare that the information supplied is correct and complete.

Name: *Brian Mochlin*

Position held: *Sr. Director Innovation* Date: *9/12/19*



#### 1.4.2 Modes of Operation

The EUT was evaluated for the Bluetooth Low Energy (BLE) in the transmit mode at the low, middle and high channels across the frequency band of operation.

#### 1.4.3 Monitoring of Performance

Preliminary radiated emission measurements were performed for the EUT set in three orthogonal orientations. The final measurements were performed using the orientations leading to the highest emissions relative to the limits as documented below.

Radiated Band-Edge Measurements: EUT in the X position (Sideways)

Radiated Spurious Measurements: EUT in the Y position (Vertical)

The module transmitted output power was not configurable via software. The EUT was operating at the maximum output power per the manufacturer.

#### 1.4.4 Performance Criteria

The report documents compliance of the BLE radio with the FCC section 15.247 requirements. A summary of the parameters evaluated is provided below.

**Table 1.4.4 -1: Performance Criteria**

| Parameter                                                   | Requirement                                                 |
|-------------------------------------------------------------|-------------------------------------------------------------|
| Antenna Requirement                                         | FCC: Section 15.203, 15.204                                 |
| Radiated Spurious Emissions into Restricted Frequency Bands | FCC: Sections 15.205, 15.209;ISED Canada: RSS-GEN 8.9, 8.10 |

#### 1.5 Deviations from the Standard

The EUT was evaluated for radiated emissions only to account for a new host configuration. The evaluation was performed without any deviations from the test standards.

#### 1.6 EUT Modification Record

The table below details modifications made to the EUT during the test programme. The modifications incorporated during each test are recorded on the appropriate test pages.

| Modification State | Description of Modification still fitted to EUT | Modification Fitted By | Date Modification Fitted |
|--------------------|-------------------------------------------------|------------------------|--------------------------|
|                    |                                                 |                        |                          |

The equipment was tested as provided without any modifications.



## 1.7 Test Location

TÜV SÜD Product Service conducted the following tests at our Tampa FL Test Laboratory.

| Test Name                                                   | Name of Engineer(s) | Accreditation |
|-------------------------------------------------------------|---------------------|---------------|
| 3 VDC Battery Powered Operating                             |                     |               |
| Antenna Requirement                                         | Jean N. Rene        | A2LA          |
| Radiated Spurious Emissions into Restricted Frequency Bands | Jean N. Rene        | A2LA          |

Office Address:

TÜV SÜD America, Inc.  
5610 W. Sligh Ave, Suite 100  
Tampa, FL 33634  
USA



## 2 Test Details

### 2.1 Antenna Requirements

#### 2.1.1 Specification Reference

FCC: Section 15.203, 15.204

#### 2.1.2 Equipment Under Test and Modification State

S/N: A00002097

#### 2.1.3 Date of Test

N/A

#### 2.1.4 Test Method

N/A

#### 2.1.5 Environmental Conditions

Ambient Temperature N/A

Relative Humidity N/A

Atmospheric Pressure N/A

#### 2.1.6 Test Results

Limit Clause FCC Sections: 15.203, 15.204

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

The EUT uses a PIFA that is integral to the module. The antenna cannot be replaced without permanently damaging the product. The EUT meets the requirements of FCC Section 15.203 and 15.204.

#### 2.1.7 Test Location and Test Equipment Used

This observation was carried out in TÜV SÜD America, Inc., 5610 W. Sligh Ave, Suite 100, Tampa, FL 33634, USA.

As this was a visual inspection, no test equipment was used.



## **2.2 Radiated Spurious Emissions into Restricted Frequency Bands**

### **2.2.1 Specification Reference**

FCC Sections: 15.205, 15.209

### **2.2.2 Equipment Under Test and Modification State**

S/N: A00002097

### **2.2.3 Date of Test**

9/3/2019 to 9/5/2019

### **2.2.4 Test Method**

Radiated emissions tests were made over the frequency range of 9 kHz to 26.5 GHz, 10 times the highest fundamental frequency. Each emission found to be in a restricted band as defined by section 15.205, including any emission at the operational band-edge, was compared to the radiated emission limits as defined in Section 15.209.

For measurements below 30 MHz, the receive antenna height was set to 1 m and the EUT was rotated through 360 degrees. The resolution bandwidth was set to 200 Hz below 150 kHz and to 9 kHz above 150 kHz.

The EUT was rotated through 360° and the receive antenna height was varied from 1m to 4m so that the maximum radiated emissions level would be detected. For frequencies below 1000 MHz, quasi-peak measurements were made using a resolution bandwidth RBW of 120 kHz and a video bandwidth VBW of 300 kHz. For frequencies above 1000 MHz, peak measurements are made with RBW of 1 MHz and VBW of 3 MHz. Average measurements are performed in the linear scale using VBW of 10 kHz.

### **2.2.5 Duty Cycle Correction**

No duty cycle correction factor was applied to the measurements during this evaluation.

### **2.2.6 Environmental Conditions**

|                      |             |
|----------------------|-------------|
| Ambient Temperature  | 24.4 °C     |
| Relative Humidity    | 40.6 %      |
| Atmospheric Pressure | 1012.3 mbar |



## 2.2.7 Test Results

### 3 VDC Battery Powered Operating

#### Limit Clause FCC Sections 15.205, 15.209

| Frequency (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 0.009-0.490     | 2400/F(kHz)                       | 300                           |
| 0.4090-1.705    | 24000/F(kHz)                      | 30                            |
| 1.705-30.0      | 30                                | 30                            |
| 30-88           | 100**                             | 3                             |
| 88-216          | 150**                             | 3                             |
| 216-960         | 200**                             | 3                             |
| Above 960       | 500                               | 3                             |

**Table 2.2.7-1: Radiated Spurious Emissions Results**

| Frequency<br>(MHz)        | Level<br>(dBuV) |         | Antenna<br>Polarity<br>(H/V) | Correction<br>Factors<br>(dB) | Corrected Level<br>(dBuV/m) |         | Limit<br>(dBuV/m) |         | Margin<br>(dB) |         |
|---------------------------|-----------------|---------|------------------------------|-------------------------------|-----------------------------|---------|-------------------|---------|----------------|---------|
|                           | pk              | Qpk/Avg |                              |                               | pk                          | Qpk/Avg | pk                | Qpk/Avg | pk             | Qpk/Avg |
| Low Channel (2402 MHz)    |                 |         |                              |                               |                             |         |                   |         |                |         |
| 4804                      | 41.50           | 35.57   | H                            | 4.10                          | 45.60                       | 39.67   | 74.0              | 54.0    | 28.4           | 14.3    |
| 4804                      | 43.01           | 36.28   | V                            | 4.10                          | 47.11                       | 40.38   | 74.0              | 54.0    | 26.9           | 13.6    |
| 19216                     | 40.25           | 30.12   | H                            | 14.98                         | 55.23                       | 45.10   | 83.5              | 63.5    | 28.3           | 18.4    |
| 19216                     | 39.83           | 29.75   | V                            | 14.98                         | 54.81                       | 44.73   | 83.5              | 63.5    | 28.7           | 18.8    |
| Middle Channel (2440 MHz) |                 |         |                              |                               |                             |         |                   |         |                |         |
| 4880                      | 41.42           | 35.64   | H                            | 4.26                          | 45.68                       | 39.90   | 74.0              | 54.0    | 28.3           | 14.1    |
| 4880                      | 41.03           | 34.80   | V                            | 4.26                          | 45.29                       | 39.06   | 74.0              | 54.0    | 28.7           | 14.9    |
| 7320                      | 43.49           | 36.98   | H                            | 9.25                          | 52.74                       | 46.23   | 74.0              | 54.0    | 21.3           | 7.8     |
| 7320                      | 44.52           | 38.91   | V                            | 9.25                          | 53.77                       | 48.16   | 74.0              | 54.0    | 20.2           | 5.8     |
| 19520                     | 39.05           | 29.46   | H                            | 14.83                         | 53.88                       | 44.29   | 83.5              | 63.5    | 29.6           | 19.2    |
| 19520                     | 38.98           | 29.13   | V                            | 14.83                         | 53.81                       | 43.96   | 83.5              | 63.5    | 29.7           | 19.5    |
| High Channel (2480 MHz)   |                 |         |                              |                               |                             |         |                   |         |                |         |
| 2483.5                    | 58.70           | 43.59   | H                            | -1.91                         | 56.79                       | 41.68   | 74.0              | 54.0    | 17.2           | 12.3    |
| 2483.5                    | 62.23           | 45.17   | V                            | -1.91                         | 60.32                       | 43.26   | 74.0              | 54.0    | 13.7           | 10.7    |
| 4960                      | 41.50           | 33.10   | H                            | 4.43                          | 45.93                       | 37.53   | 74.0              | 54.0    | 28.1           | 16.5    |
| 4960                      | 40.87           | 32.65   | V                            | 4.43                          | 45.30                       | 37.08   | 74.0              | 54.0    | 28.7           | 16.9    |
| 7440                      | 44.63           | 39.44   | H                            | 9.42                          | 54.05                       | 48.86   | 74.0              | 54.0    | 19.9           | 5.1     |
| 7440                      | 45.52           | 39.93   | V                            | 9.42                          | 54.94                       | 49.35   | 74.0              | 54.0    | 19.1           | 4.6     |
| 19840                     | 39.31           | 30.41   | H                            | 14.49                         | 53.80                       | 44.90   | 83.5              | 63.5    | 29.7           | 18.6    |
| 19840                     | 39.01           | 29.67   | V                            | 14.49                         | 53.50                       | 44.16   | 83.5              | 63.5    | 30.0           | 19.3    |

#### Notes:

- All emissions above 19.8 GHz were attenuated below the limits and the noise floor of the measurement equipment.
- The emissions above 18 GHz were measured at a test distance of 1m. The limits were adjusted accordingly using a distance factor of  $20 \cdot \log(1/3) = 9.5$  dB

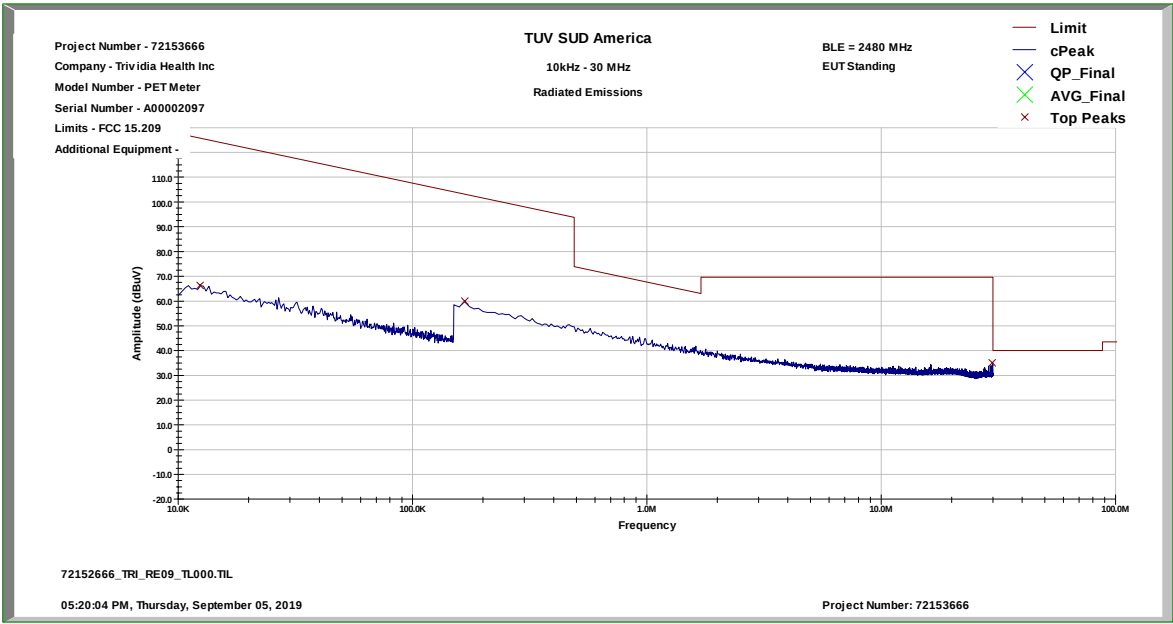


Figure 2.2.7-1: Worst-Case Radiated Pre-Scan Plot – below 30 MHz

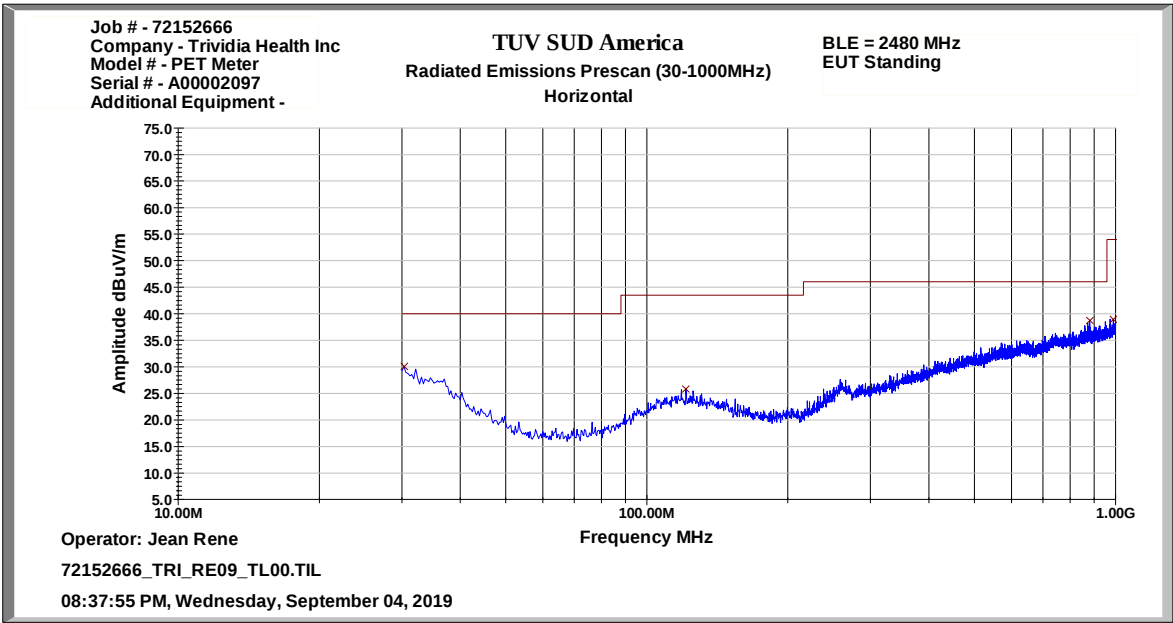


Figure 2.2.7-2: Worst-Case Radiated Pre-Scan Plot – 30 MHz – 1 GHz – Horizontal

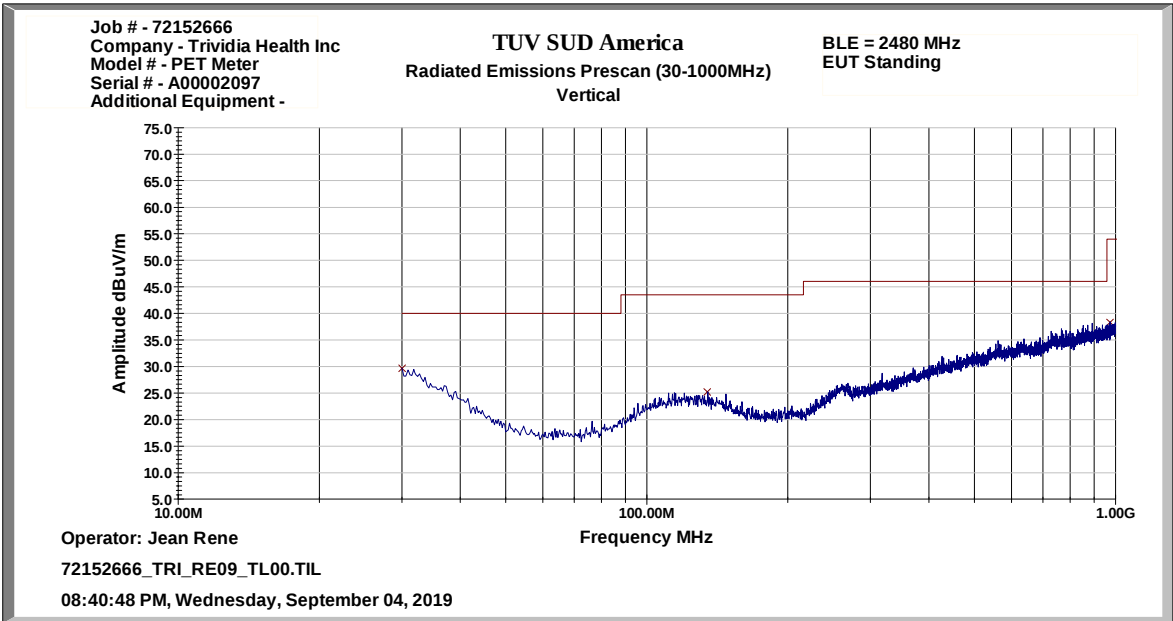


Figure 2.2.7-3: Worst-Case Radiated Pre-Scan Plot – 30 MHz – 1 GHz – Vertical

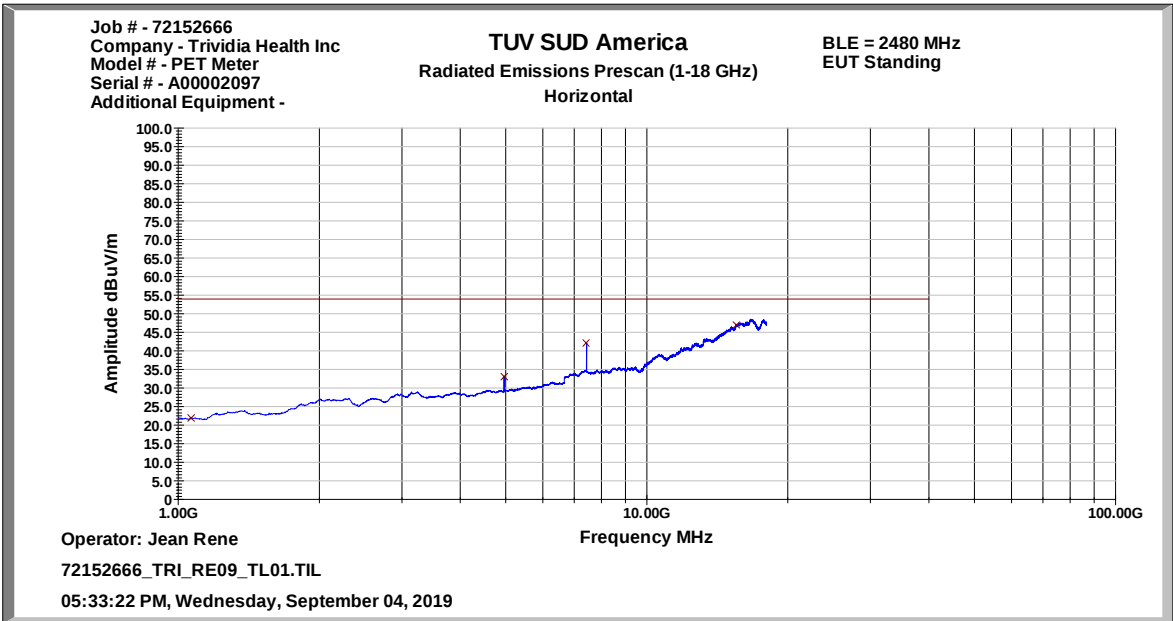


Figure 2.2.7-4: Worst-Case Radiated Pre-Scan Plot – 1 GHz – 18 GHz – Horizontal

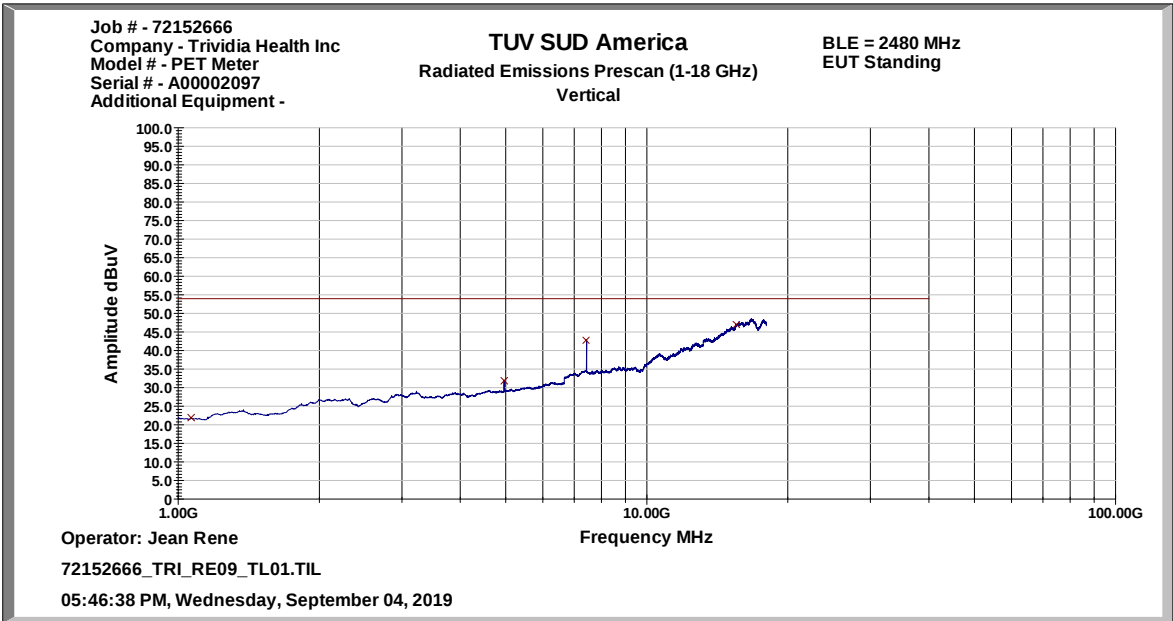


Figure 2.2.7-5: Worst-Case Radiated Pre-Scan Plot – 1 GHz – 18 GHz – Vertical

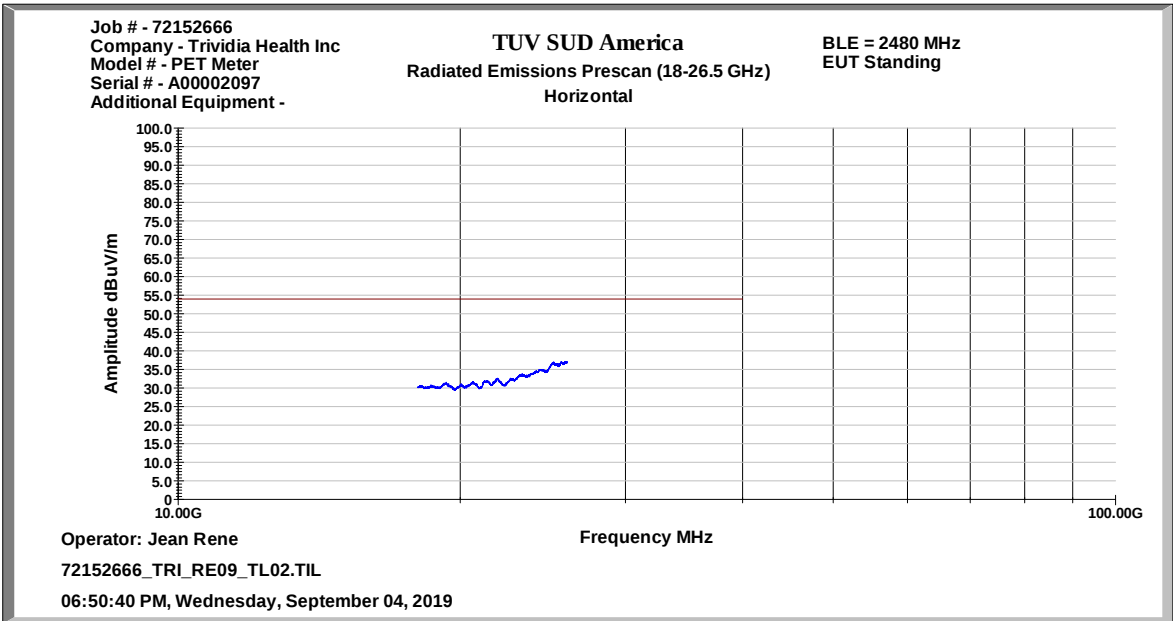


Figure 2.2.7-6: Worst-Case Radiated Pre-Scan Plot – 18 GHz – 26.5 GHz – Horizontal

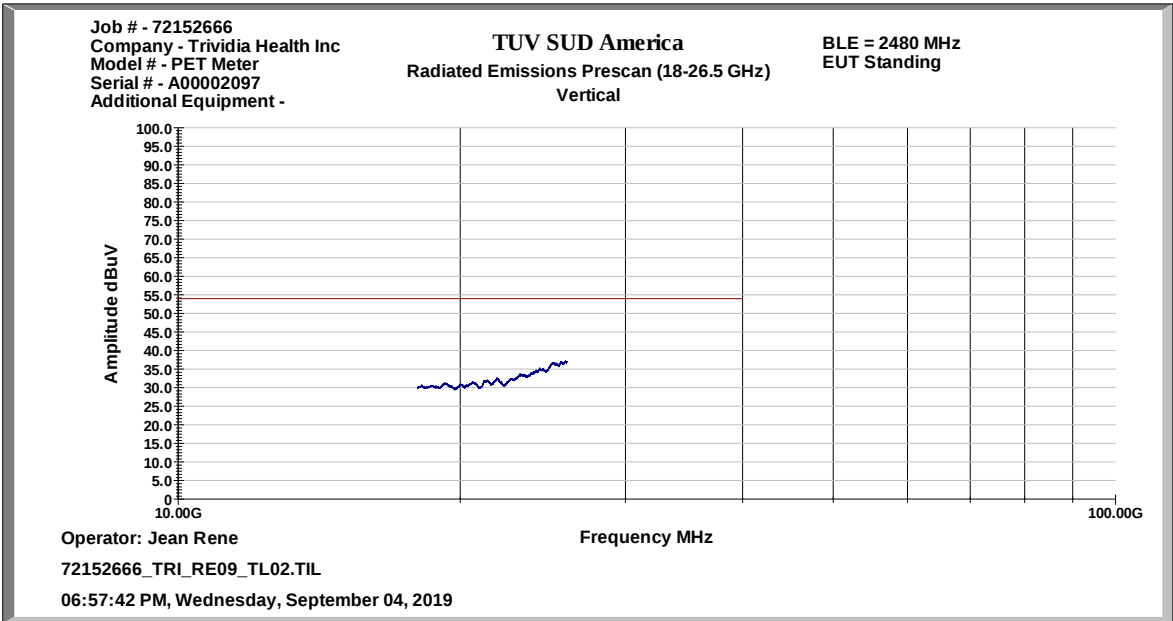


Figure 2.2.7-7: Worst-Case Radiated Pre-Scan Plot – 18 GHz – 26.5 GHz – Vertical



## 2.2.8 Sample Calculations

$$R_c = R_u + CF_T$$

Where:

|        |   |                                                                   |
|--------|---|-------------------------------------------------------------------|
| $CF_T$ | = | Total Correction Factor (AF+CA+AG)-DC (Average Measurements Only) |
| $R_u$  | = | Uncorrected Reading                                               |
| $R_c$  | = | Corrected Level                                                   |
| AF     | = | Antenna Factor                                                    |
| CA     | = | Cable Attenuation                                                 |
| AG     | = | Amplifier Gain                                                    |
| DC     | = | Duty Cycle Correction Factor                                      |

### Example Calculation: Peak

Corrected Level:  $41.5 + 4.1 = 45.6$  dB $\mu$ V/m

Margin:  $74$  dB $\mu$ V/m –  $45.6$  dB $\mu$ V/m =  $28.4$  dB

### Example Calculation: Average

Corrected Level:  $35.57 + 4.1 - 0 = 39.67$  dB $\mu$ V/m

Margin:  $54$  dB $\mu$ V/m –  $39.67$  dB $\mu$ V/m =  $14.33$  dB



### 2.2.9 Test Location and Test Equipment Used

This test was carried out in TÜV SÜD America, Inc., 5610 W. Sligh Ave, Suite 100, Tampa, FL 33634, USA.

| Instrument                           | Manufacturer         | Type No                | TE No     | Software / Firmware Revision | Calibration Period (months) | Calibration Due |
|--------------------------------------|----------------------|------------------------|-----------|------------------------------|-----------------------------|-----------------|
| 9kHz-26.5GHz EMC analyzer/HYZ        | Agilent              | E7405A                 | BEMC00523 | A.14.06                      | 24                          | 27-Nov-2020     |
| 10dB Attenuator                      | Merrimac             | FAN-6-10K              | BEMC02086 | N/A                          | 12                          | 17-Oct-2019     |
| Tile Automation Software             | ETS Lindgren         | TILE4! - Version 4.2.A | BEMC02095 | 4.2A                         | N/A                         | NCR             |
| BI LOG PERIODIC, ANTENNA             | Schaffner            | CBL6112B               | TEMC00005 | N/A                          | 24                          | 19-Dec-2019     |
| Loop Antenna                         | Com Power            | AL-130                 | TEMC00025 | N/A                          | 24                          | 07-Nov-2019     |
| Horn Antenna                         | Schwarzbeck          | BBHA-9170              | TEMC00029 | N/A                          | 60                          | 23-Aug-2021     |
| EMC Chamber                          | Panashield           | N/A                    | TEMC00031 | N/A                          | 24                          | 28-Jan-2020     |
| Double Ridge Guide Horn              | ETS Lindgren         | 3117                   | TEMC00061 | N/A                          | 24                          | 13-Feb-2020     |
| 18 GHz-40 GHz Microwave Preamplifier | COM-power            | PAM-840A               | TEMC00147 | N/A                          | 24                          | 30-May-2020     |
| PAM-118A                             | Com-Power Corporatio | PAM-118A               | TEMC00160 | N/A                          | 12                          | 27-Apr-2020     |
| 4A & 4B Test Cables                  | MegaPhase, LLC       | 1GVT4                  | TEMC00171 | N/A                          | 24                          | 30-May-2020     |
| 2.4 GHz Notch Filter                 | Micro-Tronics        | BRM50702-01            | TEMC00176 | N/A                          | 12                          | 10-Apr-2020     |
| Radiated Cable Set 30 MHz - 1 GHz    | TUV SUD Tampa        | Cable 2                | TEMC00179 | N/A                          | 12                          | 07-May-2020     |
| Radiated Cable Set 9 kHz - 30 MHz    | TUV SUD Tampa        | Cable 2                | TEMC00186 | N/A                          | 12                          | 08-May-2020     |

TU - Traceability Unscheduled

O/P MON - Traceability Unscheduled

N/A - Not Applicable



### 3 Test Equipment Information

#### 3.1 General Test Equipment Used

| Instrument                           | Manufacturer         | Type No                | TE No     | Software / Firmware Revision | Calibration Period (months) | Calibration Due |
|--------------------------------------|----------------------|------------------------|-----------|------------------------------|-----------------------------|-----------------|
| 9kHz-26.5GHz EMC analyzer/HYZ        | Agilent              | E7405A                 | BEMC00523 | A.14.06                      | 24                          | 27-Nov-2020     |
| 10dB Attenuator                      | Merrimac             | FAN-6-10K              | BEMC02086 | N/A                          | 12                          | 17-Oct-2019     |
| Tile Automation Software             | ETS Lindgren         | TILE4! - Version 4.2.A | BEMC02095 | 4.2A                         | N/A                         | NCR             |
| BI LOG PERIODIC, ANTENNA             | Schaffner            | CBL6112B               | TEMC00005 | N/A                          | 24                          | 19-Dec-2019     |
| Loop Antenna                         | Com Power            | AL-130                 | TEMC00025 | N/A                          | 24                          | 07-Nov-2019     |
| Horn Antenna                         | Schwarzbeck          | BBHA-9170              | TEMC00029 | N/A                          | 60                          | 23-Aug-2021     |
| EMC Chamber                          | Panashield           | N/A                    | TEMC00031 | N/A                          | 24                          | 28-Jan-2020     |
| Double Ridge Guide Horn              | ETS Lindgren         | 3117                   | TEMC00061 | N/A                          | 24                          | 13-Feb-2020     |
| 18 GHz-40 GHz Microwave Preamplifier | COM-power            | PAM-840A               | TEMC00147 | N/A                          | 24                          | 30-May-2020     |
| PAM-118A                             | Com-Power Corporatio | PAM-118A               | TEMC00160 | N/A                          | 12                          | 27-Apr-2020     |
| 4A & 4B Test Cables                  | MegaPhase, LLC       | 1GVT4                  | TEMC00171 | N/A                          | 24                          | 30-May-2020     |
| 2.4 GHz Notch Filter                 | Micro-Tronics        | BRM50702-01            | TEMC00176 | N/A                          | 12                          | 10-Apr-2020     |
| Radiated Cable Set 30 MHz - 1 GHz    | TUV SUD Tampa        | Cable 2                | TEMC00179 | N/A                          | 12                          | 07-May-2020     |
| Radiated Cable Set 9 kHz - 30 MHz    | TUV SUD Tampa        | Cable 2                | TEMC00186 | N/A                          | 12                          | 08-May-2020     |

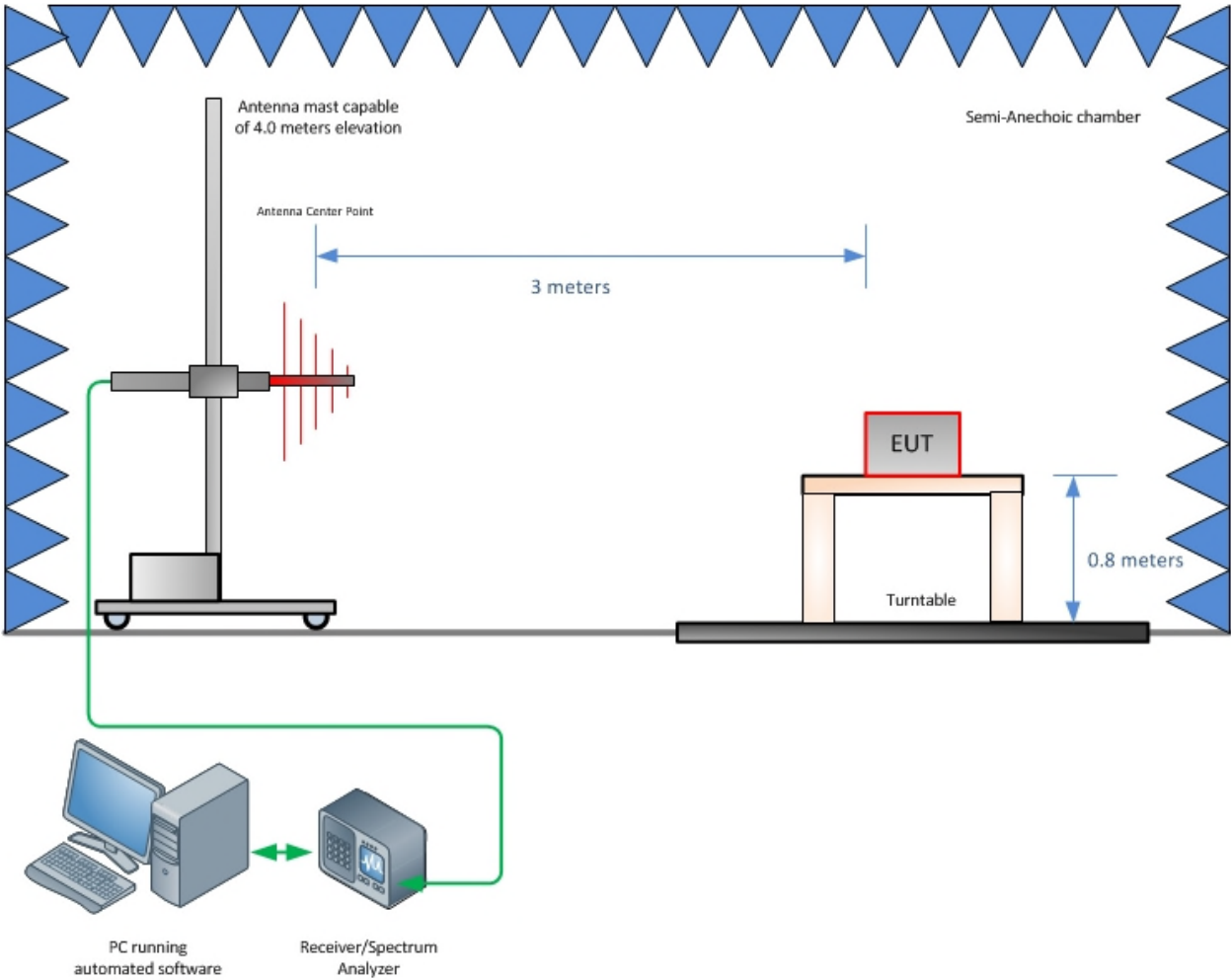
TU - Traceability Unscheduled

O/P MON - Traceability Unscheduled

N/A - Not Applicable



4      **Diagram of Test Set-ups**



**Figure 4-1 - Radiated Emissions Test Setup up to 1 GHz**

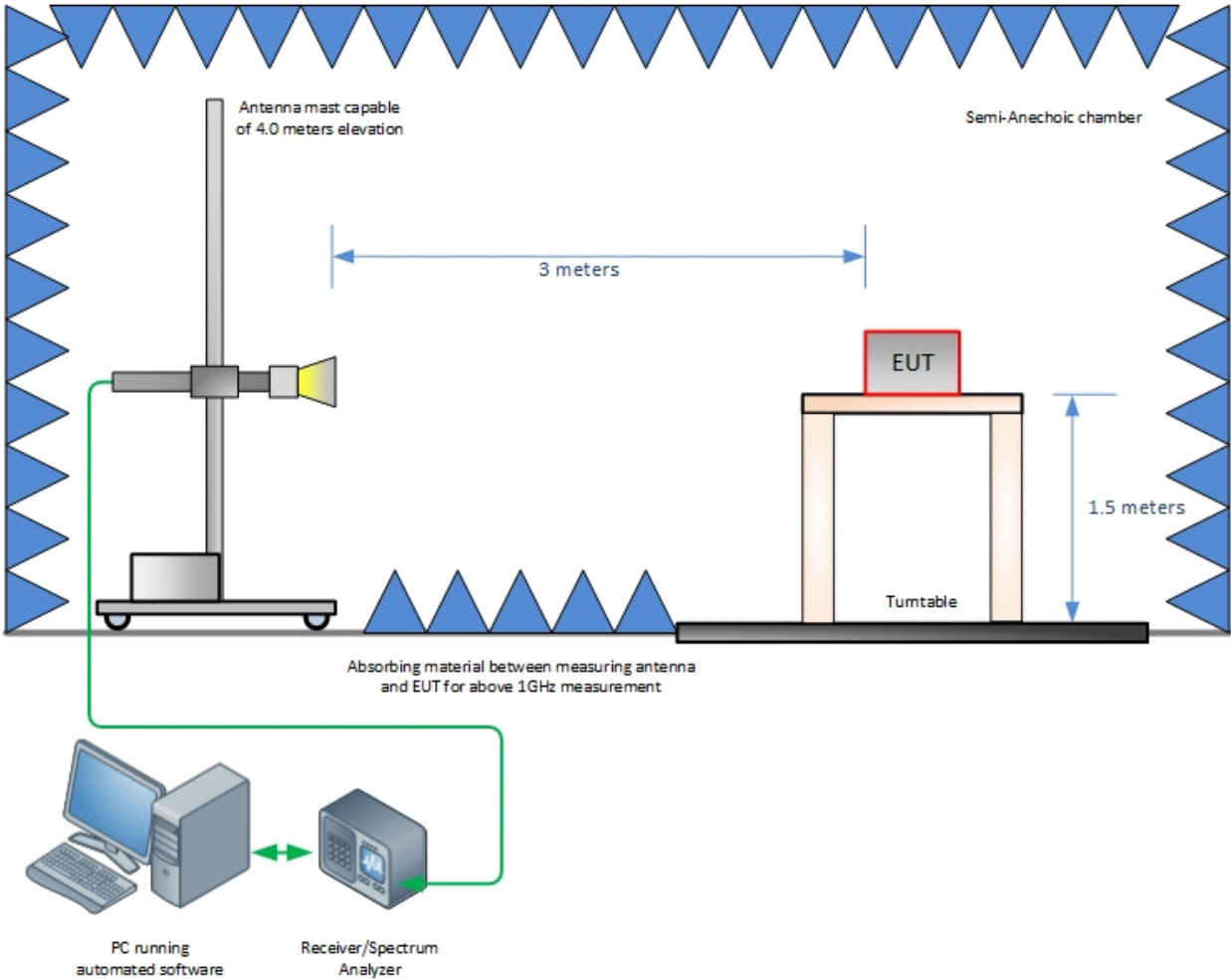


Figure 4-2 - Radiated Emissions Test Setup above 1 GHz

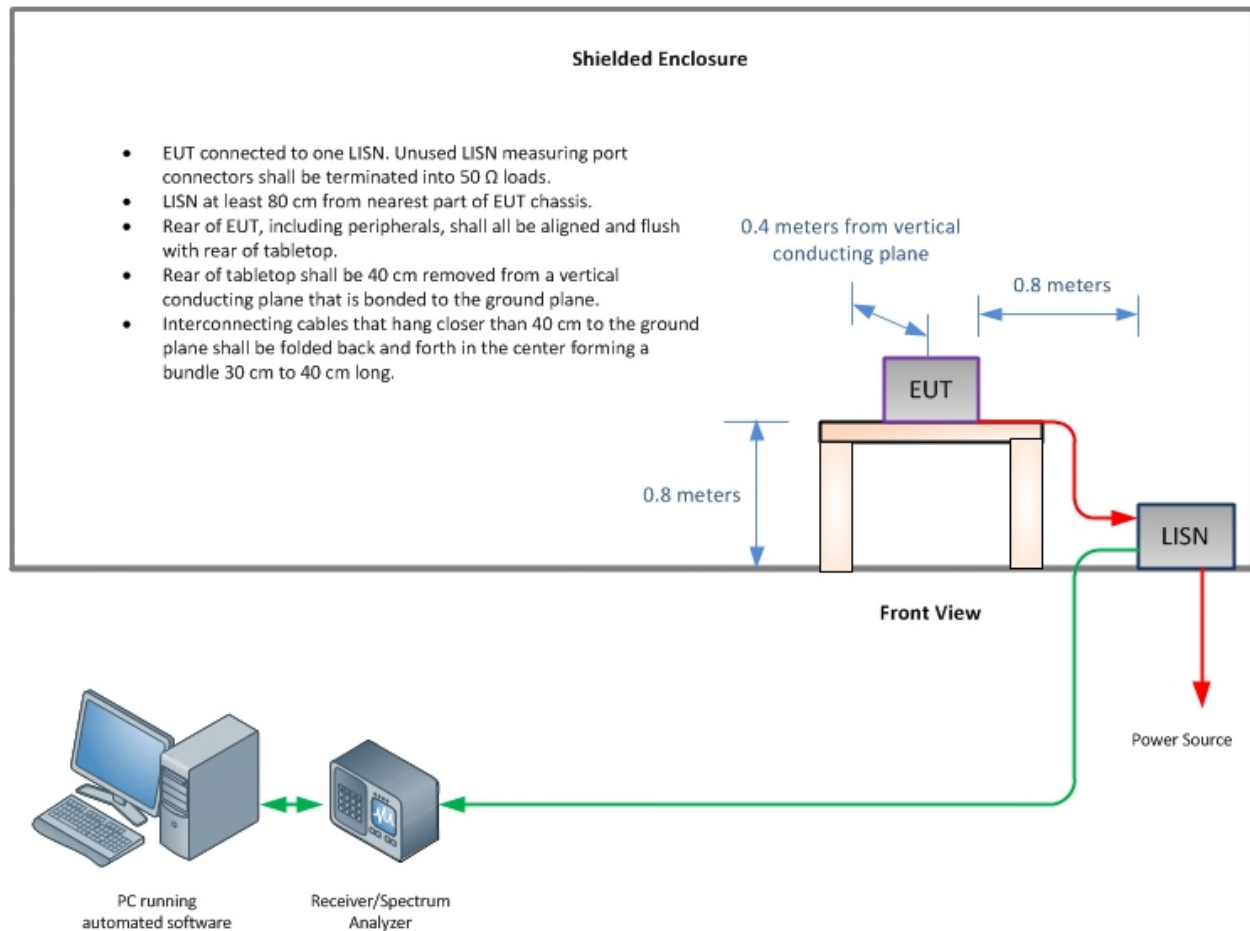


Figure 4-3 – Conducted Emissions Test Setup



## 5 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

**Table 6-1 - Values of  $U_{\text{CISPR}}$  and  $U_{\text{Lab}}$**

| Measurement                                                                                                                                            | $U_{\text{CISPR}}$         | $U_{\text{Lab}}$              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------|
| Conducted disturbance (mains port)<br>(9 kHz – 150 kHz)<br>(150 kHz – 30 MHz)                                                                          | 3.8 dB<br>3.4 dB           | 3.71 dB<br>3.31 dB            |
| Conducted disturbance (telecom port)<br>(150 kHz – 30 MHz 55 dB LCL)<br>(150 kHz – 30 MHz 65 dB LCL)<br>(150 kHz – 30 MHz 75 dB LCL)                   | 5.0 dB<br>5.0 dB<br>5.0 dB | 4.11 dB<br>4.50 dB<br>4.94 dB |
| Radiated disturbance (electric field strength on an open area test site or alternative test site)<br>(30 MHz – 1 000 MHz)<br>(1 – 6 GHz)<br>(6-18 GHz) | 6.3 dB<br>5.2 dB<br>5.5 dB | 5.85 dB<br>4.48 dB<br>4.48 dB |

### Notes:

$U_{\text{CISPR}}$  resembles a value of measurement uncertainty for a specific test, which was determined by considering uncertainties associated with the quantities listed in CISPR 16-4-2:2011.

Compliance or non-compliance with a disturbance limit shall be determined in the following manner.

If  $U_{\text{Lab}}$  is less than or equal to  $U_{\text{CISPR}}$  in Table 5.0-1, then:

- o compliance is deemed to occur if no measured disturbance exceeds the disturbance limit;
- o non-compliance is deemed to occur if any measured disturbance exceeds the disturbance limit.

If  $U_{\text{Lab}}$  is greater than  $U_{\text{CISPR}}$ , then:

- o compliance is deemed to occur if no measured disturbance, increased by  $(U_{\text{Lab}} - U_{\text{CISPR}})$ , exceeds the disturbance limit;
- o non-compliance is deemed to occur if any measured disturbance, increased by  $(U_{\text{Lab}} - U_{\text{CISPR}})$ , exceeds the disturbance limit.

The TÜV SÜD AMERICA, Inc. calculated MU is less than the internationally accepted MU, therefore an adjustment to the measured result as mentioned above is not necessary.



## 6 Accreditation, Disclaimers and Copyright

TÜV SÜD America Inc.'s reports apply only to the specific sample tested under stated test conditions. It is the manufacturer's responsibility to assure the continued compliance of production units of this model. TÜV SÜD America, Inc. shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV SÜD America, Inc.'s issued reports.

This report is the confidential property of the client. As a mutual protection to our clients, the public and TÜV SÜD America, Inc., extracts from the test report shall not be reproduced, except in full without TÜV SÜD America, Inc.'s written approval.

This report must not be used to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the federal government.

TÜV SÜD America, Inc. and or its professional staff hold government and professional organization certifications for A2LA, ANSI, IEEE, NIST, iNARTE and VCCI.