



Report Number: 12422341-E2V1

Issue Date: 10/14/2019

Product Name: Payment Terminal with an integrated smart,
magnetic stripe, and contactless card reader with
Bluetooth connectivity and barcode reader.

Model Number: INFINEA TAB M

Electromagnetic Compatibility Test Report

For

**DATECS Ltd.
DEPARTMENT OF INNOVATIVE TECHNOLOGIES
4 “Datecs” Str.
1592 SOFIA, BULGARIA**

Test Report Details

Tests Performed By:

UL Verification Services
47173 Benicia Street, Fremont, CA 94538

Tests Performed For:

DATECS Ltd.
DEPARTMENT OF INNOVATIVE TECHNOLOGIES
4 "Datecs" Str.
1592 SOFIA, BULGARIA

Issue Date:

10/14/2019

Product Name:

Payment Terminal with an integrated smart, magnetic stripe, and
contactless card reader with Bluetooth connectivity and barcode reader.

Model Number:

INFINEA TAB M

Sample Serial Number:

1818900019

Product Standards:

FCC 47 CFR PART 15 SUBPART B

Testing Start Date:

September 28, 2018

Date Testing Complete:

October 14, 2019

Overall Results:**Compliant**

UL LLC reports apply only to the specific samples tested under stated test conditions. All samples tested were in good operating condition throughout the entire test program. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. UL LLC shall have no liability for any deductions, inferences or generalizations drawn by the client or others from UL LLC issued reports. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

*This report may contain test results that are not covered by the NVLAP or A2LA accreditation. The scope of accreditation is limited to the specific tests that are listed on the NVLAP and/or A2LA websites referenced at the end of this report.

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Report Revision History

| Revision Date | Revision Version | Description | Revised By | Revision Reviewed By |
|----------------------|-------------------------|--|-------------------|-----------------------------|
| 1/23/19 | V1 | Initial Issue | | |
| 10/14/19 | V2 | Report revised based on reviewer's comments. | Bobby Bayani | Dan Corona |

1.0 Summary

The tests listed in the Summary of Testing section of this report have been performed and the results recorded by UL LLC in accordance with the procedures stated in each test requirement and specification. The applicant determined the list of tests performed were applicable to the Equipment Under Test. As a result, the subject product has been verified to comply or not comply as noted in the Summary of Testing with each test specification. The test results relate only to the items tested.

1.1 Deviations from standard test methods

| |
|------|
| None |
|------|

1.2 Device Modifications Necessary for Compliance

| |
|------|
| None |
|------|

1.3 Applicable Standards

| Standard |
|------------------------------|
| FCC 47 CFR PART 15 SUBPART B |

1.4 Summary of Tests

This product is considered Class B

| Requirement – Test | Result (Compliant / Non-Compliant) |
|---------------------|------------------------------------|
| CONDUCTED EMISSIONS | Compliant |
| RADIATED EMISSIONS | Compliant |

Reviewed By:



Bobby Bayani
Lead Project Engineer
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Prepared By:



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Approved & Released For
UL Verification Services Inc By:



Dan Corona
Operations Leader
UL Verification Service Inc.

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2.0 CALIBRATION AND UNCERTAINTY

2.1 Measuring Instrument Calibration

All test equipment and test accessories are calibrated on a regular basis. The maximum time between calibrations is one year or the manufacturers' recommendation, whichever is less.

All test equipment calibrations are traceable to the National Institute of Standards and Technology (NIST); therefore, all test data recorded in this report is traceable to NIST.

2.2 Sample Calculation

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.

$$36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$$

2.3 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER | UNCERTAINTY |
|---|-------------|
| Worst Case Conducted Disturbance, 9KHz to 0.15 MHz | 3.84 dB |
| Worst Case Conducted Disturbance, 0.15 to 30 MHz | 3.65 dB |
| Worst Case Radiated Disturbance, 9KHz to 30 MHz | 3.15 dB |
| Worst Case Radiated Disturbance, 30 to 1000 MHz | 5.36 dB |
| Worst Case Radiated Disturbance, 1000 to 18000 MHz | 4.32 dB |
| Worst Case Radiated Disturbance, 18000 to 26000 MHz | 4.45 dB |
| Worst Case Radiated Disturbance, 26000 to 40000 MHz | 5.24 dB |

| PARAMETER | UNCERTAINTY | |
|-----------------------------------|--------------------------|------------------|
| | UL Verification Services | EMCE Engineering |
| Power Line Conducted Emission | 3.65 dB | N/A |
| Radiated Emission, 30 to 1000 MHz | 5.36 dB | ± 4.98 dB |
| Radiated Emission, 1 to 6 GHz | 4.32 dB | N/A |

Uncertainty figures are valid to a confidence level of 95%.

3.0 GENERAL - Product Description

3.1 Equipment Description

Payment Terminal with an integrated smart, magnetic stripe, and contactless card reader with Bluetooth connectivity and barcode reader.

3.2 Equipment Marking Plate

Not Provided

3.3 Device Configuration During Test

| Mode # | Description |
|--------|-------------|
| 1 | Normal |

3.3.1 Equipment Used During Test:

| Use | Product Type | Manufacturer | Model | Comments |
|-----|----------------------|--------------|---------------|-------------------|
| EUT | Magnetic Card Reader | Datecs LTD | INFINEA TAB M | None |
| AE | AC Adapter | Apple | A1265 | Support Equipment |

Note: **EUT** - Equipment Under Test, **AE** - Auxiliary/Associated Equipment, or **SIM** - Simulator (Not Subjected to Test)

3.3.2 Input/Output Ports:

| Port # | Name | Type* | Cable Max. >3m (Y/N) | Cable Shielded (Y/N) | Comments |
|--------|------|-------|----------------------|----------------------|-------------------|
| 1 | USB | DC | N | N | EUT to AC Adapter |

*Note:
AC = AC Power Port DC = DC Power Port N/E = Non-Electrical
I/O = Signal Input or Output Port (Not Involved in Process Control)
TP = Telecommunication Ports

3.3.3 EUT Internal Operating Frequencies:

| Frequency (MHz) | Description |
|-----------------|--------------|
| 12.000MHz | Main CPU |
| 32.768KHz | Main CPU |
| 27.12MHz | NFC Chip |
| 26.00MHz | Bluetooth IC |

3.3.4 Power Interface:

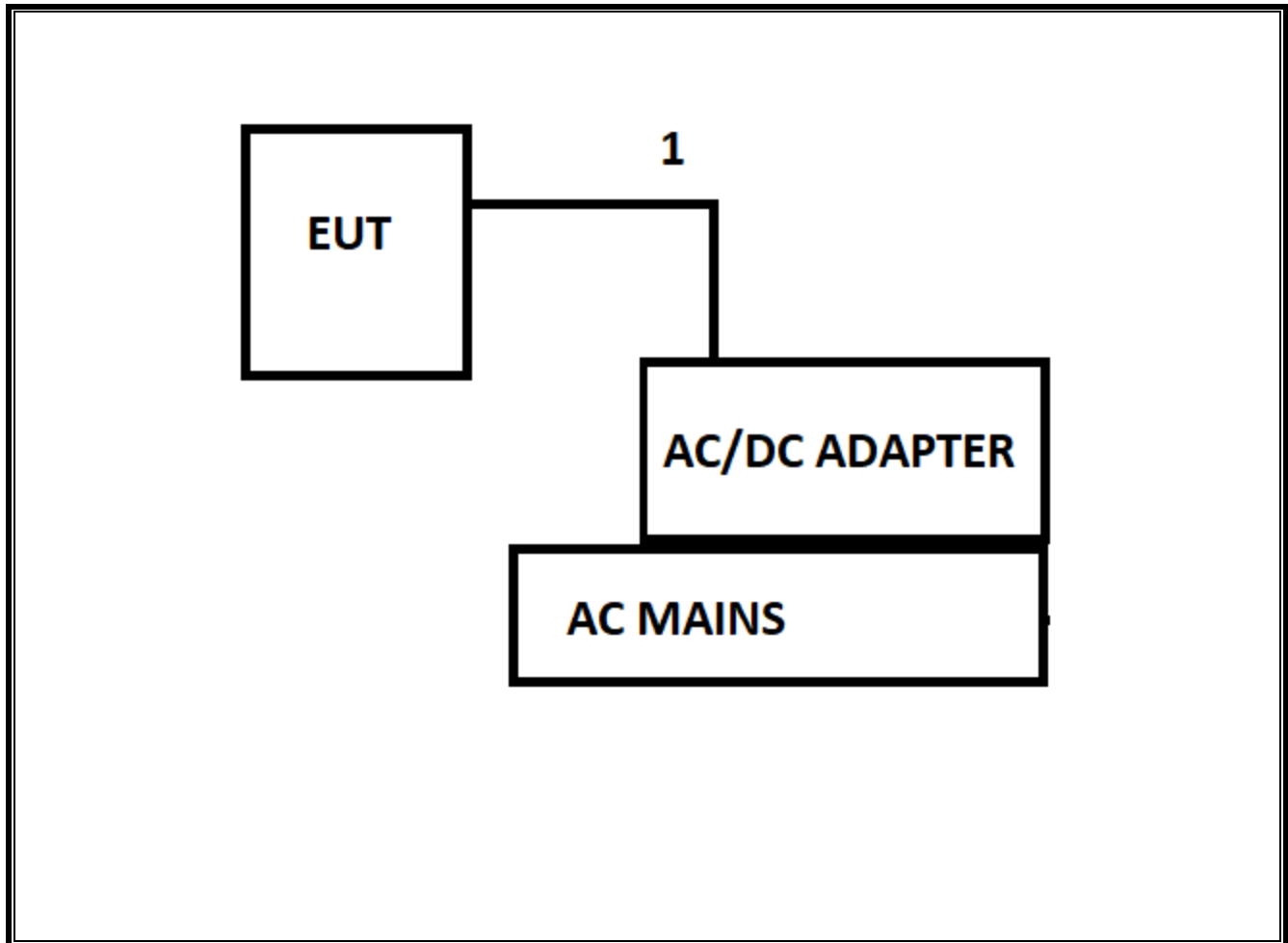
| Mode # /Rated | Voltage (V) | Current (A) | Power (W) | Frequency (DC/AC-Hz) | Phases (#) | Comments |
|---------------|-------------|-------------|-----------|----------------------|------------|----------|
| Rated | 5 | - | - | DC | Single | Battery |

3.3.5 Software and Firmware

The test utility software used during testing was IRETest.exe, rev. 2.0.3.

3.4 Block Diagram:

The diagram below illustrates the configuration of the equipment above.



3.5 EUT Configurations

| Configuration # | Description |
|------------------------|---|
| 1 | The EUT was operated in normal condition. |

3.6 Rational for EUT Configurations

| Configuration # | Description |
|------------------------|---|
| 1 | The selected EUT configuration was chosen to maximize emissions |

4.0 APPLICABLE EMISSIONS LIMITS AND TEST RESULTS

The emissions tests were performed according to following regulations:

----- United States -----

| | |
|--------------------------------------|---|
| Code of Federal Regulations Title 47 | Part 15, Subpart B, Radio Frequency Devices – Unintentional Radiators |
|--------------------------------------|---|

----- International -----

| | |
|----------------|---|
| EMC Directive: | EMC - 2014/30/EU (OJ C 293 of 2014-04-12) |
|----------------|---|

Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be verified at the time the test is conducted.

| | | | | | |
|-------------------------|------------|----------------------|---------|---------------------------|-----------|
| Ambient Temperature, °C | 22.5 ± 2.5 | Relative Humidity, % | 45 ± 15 | Barometric Pressure, mBar | 950 ± 150 |
|-------------------------|------------|----------------------|---------|---------------------------|-----------|

4.1 Test Conditions and Results - MAINS TERMINAL - CONDUCTED EMISSIONS

| | | |
|--|---|-------------------|
| Test Description | Measurements were made on a ground plane. All power was connected to the system through Artificial Mains Network (AMN). Conducted voltage measurements on mains lines were made at the output of the AMN. | |
| Standards | FCC Part 15 Subpart B | |
| Test Engineer | 12981 KW | |
| | Frequency range on each side of line | Measurement Point |
| Fully configured sample scanned over the following frequency range | 150kHz to 30MHz | Mains |
| Limits - Class A | | |
| Frequency (MHz) | Limit (dB μ V) | |
| | Quasi-Peak | Average |
| 0.15-0.5 | 79 | 66 |
| 0.5-30 | 73 | 60 |
| Limits - Class B | | |
| Frequency (MHz) | Limit (dB μ V) | |
| | Quasi-Peak | Average |
| 0.15-0.5 | 66 to 56 | 56 to 46 |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |
| Supplementary information: None | | |

Conducted Emissions EUT Configuration Settings

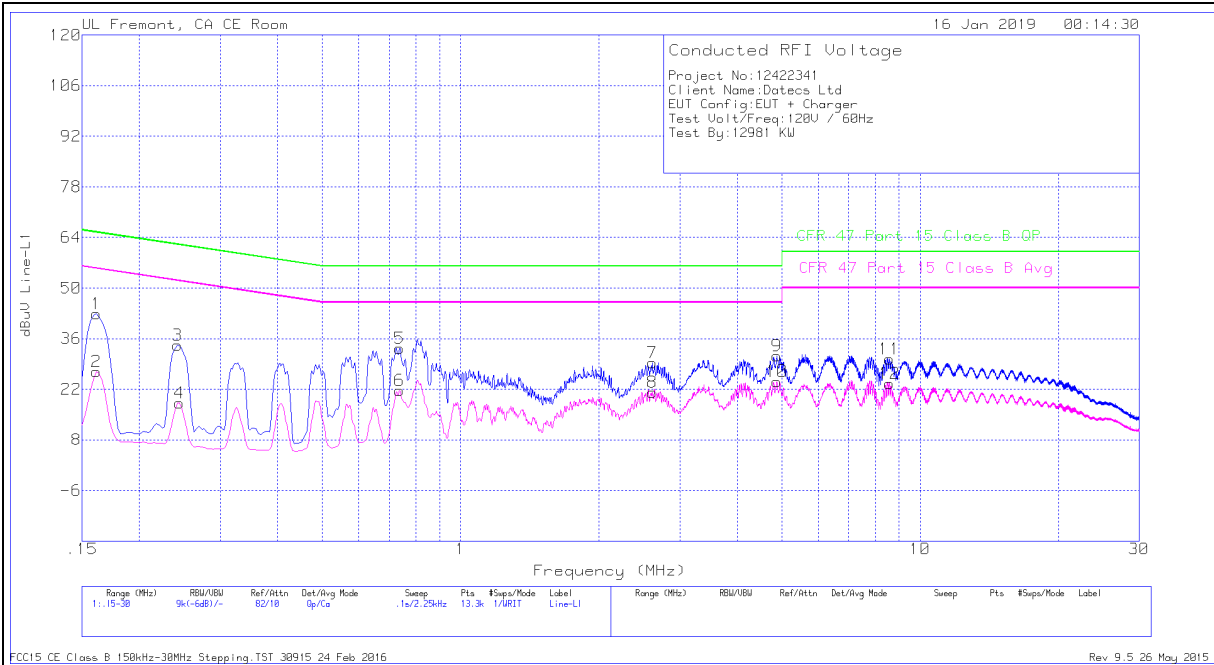
| Power Interface Mode # | EUT Configurations Mode # | EUT Operation Mode # |
|---------------------------------|---------------------------|----------------------|
| Rated | 1 | 1 |
| Supplementary information: None | | |

Conducted Emissions Test Equipment

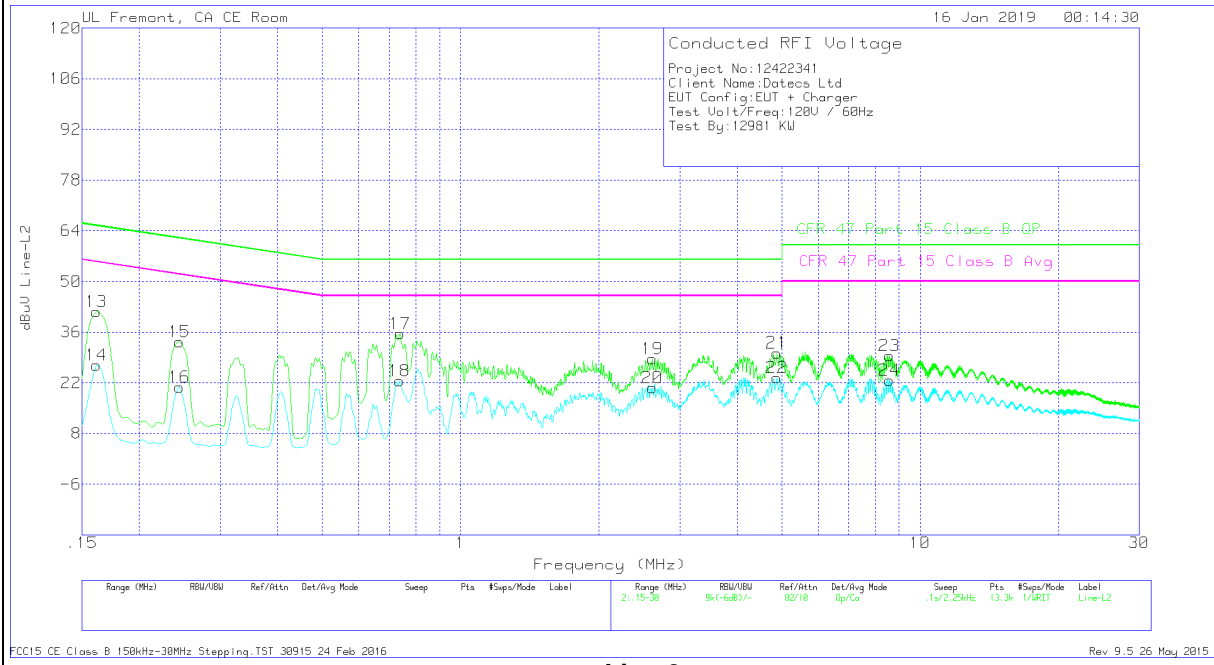
| Test Equipment List | | | | | |
|-----------------------|---------------|-----------------|------------------|-----------|-----------|
| Description | Manufacturer | Model | Local ID (T No.) | Cal Date | Cal Due |
| EMI Test Receiver | Rohde&Schwarz | ESR26 | PRE0176493 | 2/21/2018 | 2/21/2019 |
| Signal Condition Unit | Schaffner | CCN1000-1 | 133 | 8/08/2018 | 8/08/2019 |
| AC Power source | Schaffner | NSG1007 | 134 | 8/08/2018 | 8/08/2019 |
| L.I.S.N | FCC INC. | FCC LISN 50/250 | 1310 | 6/15/2018 | 6/15/2019 |

Results – 120 V, 60 Hz

Conducted Emissions Graph



Line 1



Line 2

Conducted Emissions Data Points**Line-L1 .15 - 30MHz**

| Range 1: Line-L1 .15 - 30MHz | | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------|-----------------|--------------|------------------------|---------------------------|----------------|----------------------------|-----------------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN L1 | LC Cables C1&C3 | Limiter (dB) | Corrected Reading dBuV | CFR 47 Part 15 Class B QP | QP Margin (dB) | CFR 47 Part 15 Class B Avg | Av(CISPR) Margin (dB) |
| 1 | .16125 | 32.66 | Qp | .1 | 0 | 10.1 | 42.86 | 65.4 | -22.54 | - | - |
| 2 | .16125 | 16.75 | Ca | .1 | 0 | 10.1 | 26.95 | - | - | 55.4 | -28.45 |
| 3 | .24225 | 24.06 | Qp | 0 | 0 | 10.1 | 34.16 | 62.02 | -27.86 | - | - |
| 4 | .2445 | 8.08 | Ca | 0 | 0 | 10.1 | 18.18 | - | - | 51.94 | -33.76 |
| 5 | .73725 | 23.15 | Qp | 0 | 0 | 10.1 | 33.25 | 56 | -22.75 | - | - |
| 6 | .73725 | 11.6 | Ca | 0 | 0 | 10.1 | 21.7 | - | - | 46 | -24.3 |
| 7 | 2.61375 | 19.04 | Qp | 0 | .1 | 10.1 | 29.24 | 56 | -26.76 | - | - |
| 8 | 2.61375 | 11 | Ca | 0 | .1 | 10.1 | 21.2 | - | - | 46 | -24.8 |
| 9 | 4.88175 | 20.97 | Qp | 0 | .1 | 10.1 | 31.17 | 56 | -24.83 | - | - |
| 10 | 4.8795 | 13.98 | Ca | 0 | .1 | 10.1 | 24.18 | - | - | 46 | -21.82 |
| 11 | 8.5695 | 20.01 | Qp | 0 | .2 | 10.2 | 30.41 | 60 | -29.59 | - | - |
| 12 | 8.5695 | 13.18 | Ca | 0 | .2 | 10.2 | 23.58 | - | - | 50 | -26.42 |

Qp - Quasi-Peak detector

Ca - CISPR average detection

Line-L2 .15 - 30MHz

| Range 2: Line-L2 .15 - 30MHz | | | | | | | | | | | |
|------------------------------|-----------------|----------------------|-----|---------|-----------------|--------------|------------------------|---------------------------|----------------|----------------------------|-----------------------|
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | LISN L2 | LC Cables C2&C3 | Limiter (dB) | Corrected Reading dBuV | CFR 47 Part 15 Class B QP | QP Margin (dB) | CFR 47 Part 15 Class B Avg | Av(CISPR) Margin (dB) |
| 13 | .16125 | 31.44 | Qp | .1 | 0 | 10.1 | 41.64 | 65.4 | -23.76 | - | - |
| 14 | .16125 | 16.72 | Ca | .1 | 0 | 10.1 | 26.92 | - | - | 55.4 | -28.48 |
| 15 | .2445 | 23.29 | Qp | 0 | 0 | 10.1 | 33.39 | 61.94 | -28.55 | - | - |
| 16 | .2445 | 10.66 | Ca | 0 | 0 | 10.1 | 20.76 | - | - | 51.94 | -31.18 |
| 17 | .7395 | 25.45 | Qp | 0 | 0 | 10.1 | 35.55 | 56 | -20.45 | - | - |
| 18 | .73725 | 12.51 | Ca | 0 | 0 | 10.1 | 22.61 | - | - | 46 | -23.39 |
| 19 | 2.61375 | 18.47 | Qp | 0 | .1 | 10.1 | 28.67 | 56 | -27.33 | - | - |
| 20 | 2.61263 | 10.39 | Ca | 0 | .1 | 10.1 | 20.59 | - | - | 46 | -25.41 |
| 21 | 4.88175 | 20.07 | Qp | 0 | .1 | 10.1 | 30.27 | 56 | -25.73 | - | - |
| 22 | 4.88063 | 13.13 | Ca | 0 | .1 | 10.1 | 23.33 | - | - | 46 | -22.67 |
| 23 | 8.5695 | 19.01 | Qp | 0 | .2 | 10.2 | 29.41 | 60 | -30.59 | - | - |
| 24 | 8.5695 | 12.28 | Ca | 0 | .2 | 10.2 | 22.68 | - | - | 50 | -27.32 |

Qp - Quasi-Peak detector

Ca - CISPR average detection

4.2 Test Conditions and Results - RADIATED EMISSIONS

| | | |
|--|--|---|
| Test Description | Measurements were made in a 3-meter/10-meter semi-anechoic chamber that complies to CISPR 16/ANSI C63.4. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3 meter/10-meter. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in both horizontal and vertical polarities. Final measurements (quasi-peak or average as noted) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4-meters. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable. | |
| Standards | FCC Part 15 Subpart B | |
| Test Engineer | 19497 AF | |
| | Frequency range | Measurement Point |
| Fully configured sample scanned over the following frequency range | 30MHz – 40 GHz | (3 meter/10 meter measurement distance) |
| Limits - Class B | | |
| Frequency (MHz) | Limit (dBµV/m) | |
| CISPR Limits for radiated disturbance of Class B ITE at measuring distance of 10 m | | |
| | Quasi-Peak | Average |
| 30-230 | 30 | NA |
| 230-1000 | 37 | NA |
| FCC Limits for radiated disturbance of Class B ITE at measuring distance of 3 m | | |
| 30-88 | 40 | NA |
| 88-216 | 43.5 | NA |
| 216-960 | 46 | NA |
| Above 960 | 54 | NA |
| | Peak | Average |
| Above 1 GHz | 74 | 54 |
| CISPR Limits for radiated disturbance of Class B ITE at measuring distance of 3 m | | |
| | Peak | Average |
| 1000-3000 | 70 | 50 |
| 3000-6000 | 74 | 54 |
| Supplementary information: None | | |

Radiated Emissions EUT Configuration Settings

| Power Interface Mode # | EUT Configurations Mode # | EUT Operation Mode # |
|---------------------------------|---------------------------|----------------------|
| Rated | 1 | 1 |
| Supplementary information: None | | |

Radiated Emissions Test Equipment**Test Date: 9/28/2018 – 1/16/2019**

| Test Equipment List | | | | | |
|---|---------------------------------|--------|------------------|------------|------------|
| TEST EQUIPMENT LIST | Manufacturer | Model | Local ID (T No.) | Cal Due | Last Cal |
| Description | Manufacturer | Model | ID Num | Cal Due | Last Cal |
| Antenna, Broadband Hybrid, 30MHz to 2000MHz | Sunol Sciences Corp. | JB1 | T130 | 10/16/2019 | 10/16/2018 |
| Semianechoic Chamber A | TDK RF SOLUTIONS INC. | N/A | T1199 | 6/12/2019 | 6/12/2018 |
| Spectrum Analyzer | Agilent (Keysight) Technologies | N9030A | T818 | 6/12/2019 | 6/12/2018 |
| Spectrum Analyzer, PXA, 3Hz to 44GHz | Agilent (Keysight) Technologies | N9030A | T1466 | 04/16/2019 | 04/16/2018 |
| Amplifier, 100KHz to 1GHz, 32dB | Agilent (Keysight) Technologies | 8447D | T15 | 10/16/2019 | 10/16/2018 |

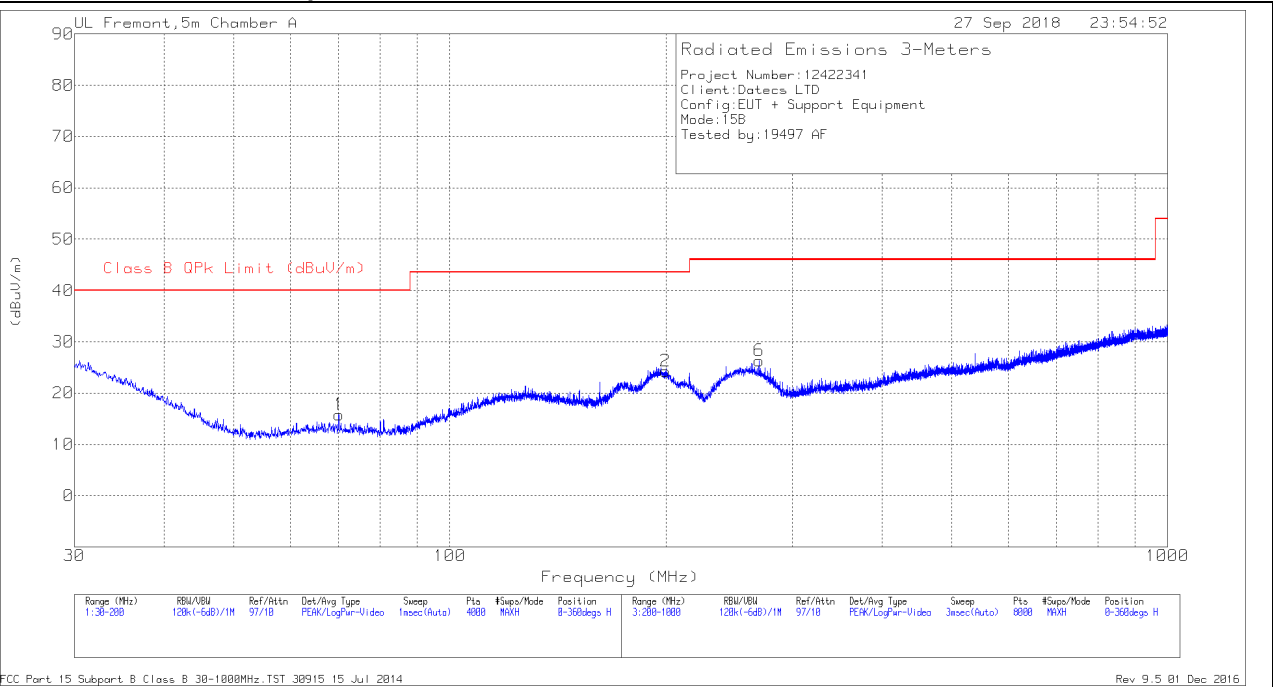
Test Date: 10/14/2019

| TEST EQUIPMENT LIST | | | | | |
|------------------------|-----------------------|------------------------|------------|-----------|-----------|
| Description | Manufacturer | Model | ID Num | Cal Due | Last Cal |
| RF Amplifier, 1-18GHz | MITEQ | AFS42-00101800-25-S-42 | 171460 | 8/1/2019 | 8/1/2019 |
| Antenna, Horn 1-18GHz | ETS-Lindgren | 3117 | T862 | 5/24/2019 | 5/24/2019 |
| Semianechoic Chamber I | TDK RF SOLUTIONS INC. | N/A | | | |
| EMI TEST RECEIVER | Rohde & Schwarz | ESW | PRE0179376 | 2/14/2020 | 2/14/2019 |

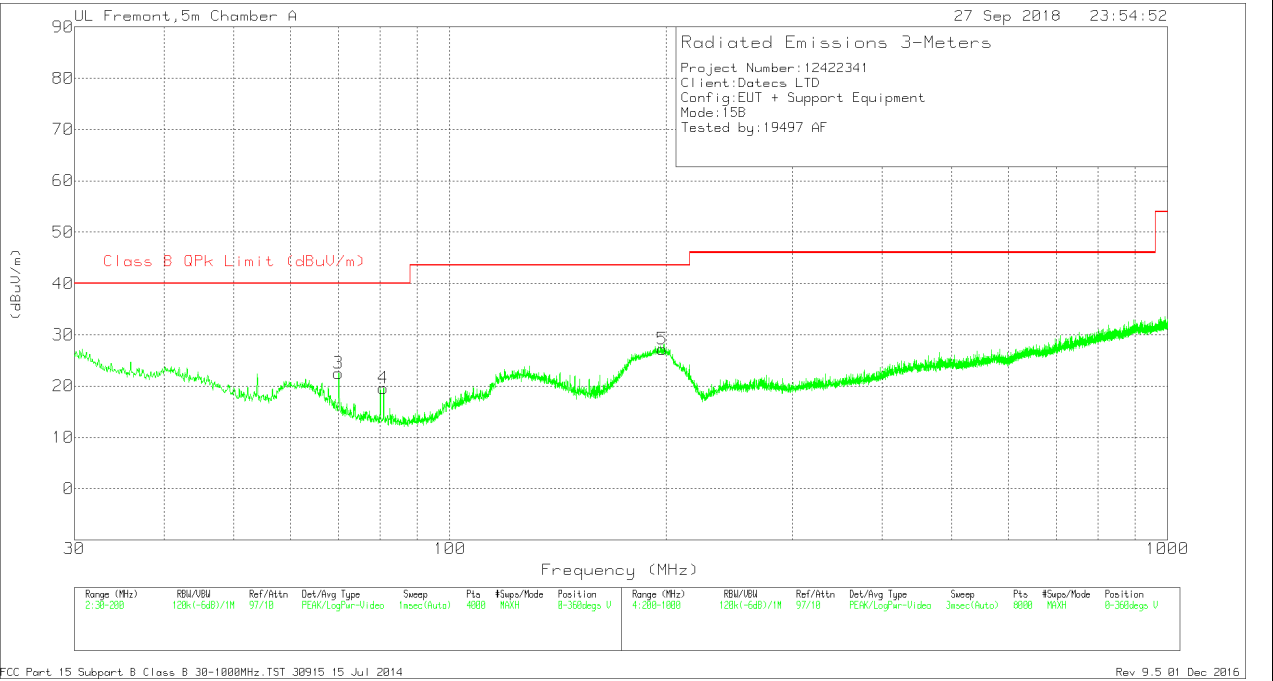
| UL SOFTWARE | | | |
|-------------------|----|--------|-----------------------|
| Radiated Software | UL | UL EMC | Ver 9.5, Sept 7, 2019 |

RADIATED EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)

Radiated Emissions Graph



HORIZONTAL



VERTICAL PLOTS

Radiated Emissions Data Points

Trace Markers

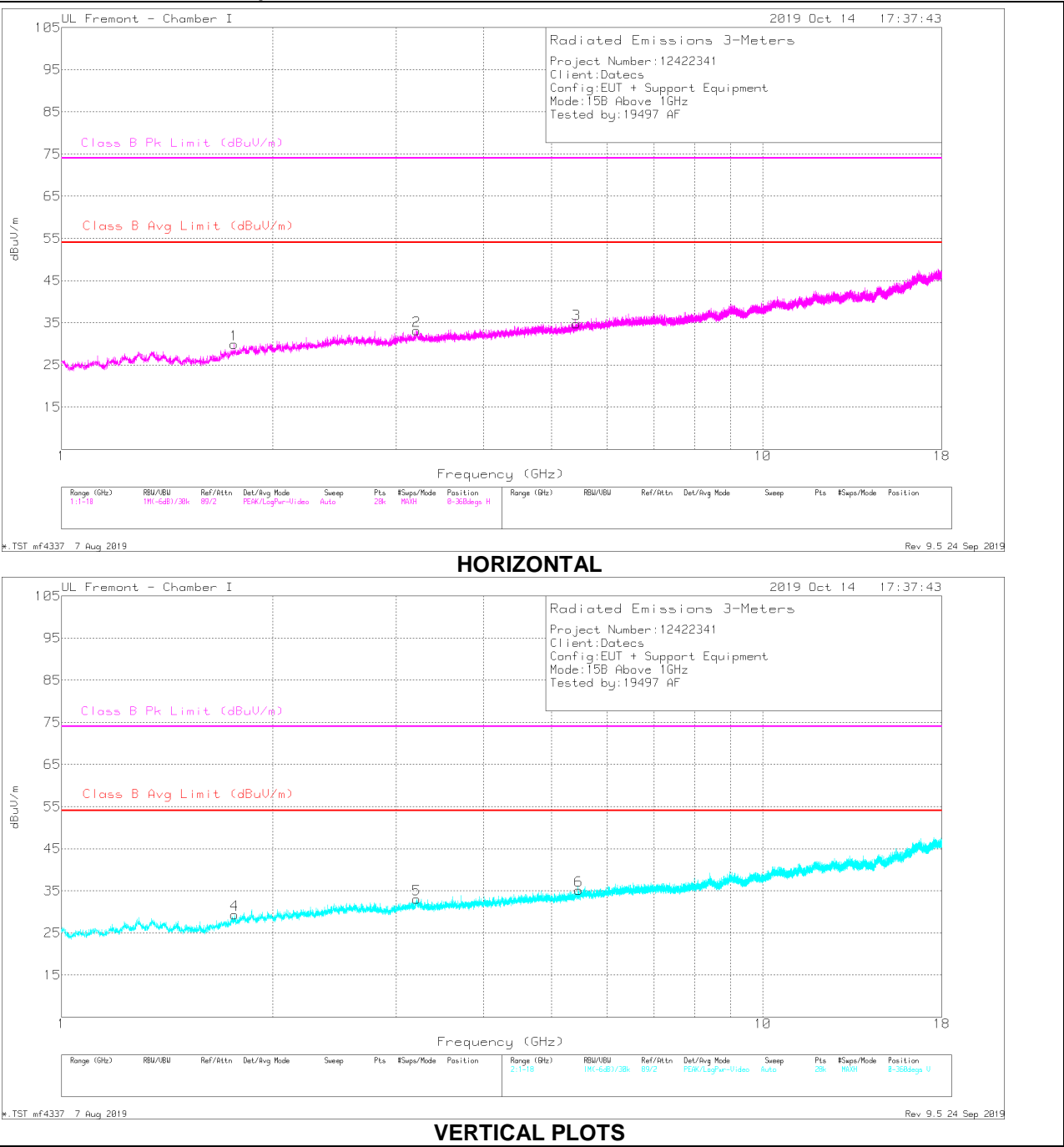
| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T130 (dB/m) | Amp/Cbl (dB/m) | Corrected Reading (dBuV/m) | Class B QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|----------------|----------------------------|----------------------------|-------------|----------------|-------------|----------|
| 3 | 70.0029 | 37.09 | Pk | 12.1 | -26.7 | 22.49 | 40 | -17.51 | 78 | 135 | V |
| 1 | 70.0454 | 30.38 | Pk | 12.1 | -26.7 | 15.78 | 40 | -24.22 | 132 | 165 | H |
| 4 | 80.8432 | 34.78 | Pk | 11.4 | -26.6 | 19.58 | 40 | -20.42 | 46 | 251 | V |
| 5 | 197.7909 | 36.22 | Pk | 16.3 | -25.3 | 27.22 | 43.52 | -16.3 | 97 | 152 | V |
| 2 | 199.9165 | 33.09 | Pk | 16.5 | -25.3 | 24.29 | 43.52 | -19.23 | 263 | 191 | H |
| 6 | 269.509 | 33.85 | Pk | 17.2 | -24.7 | 26.35 | 46.02 | -19.67 | 177 | 223 | H |

Pk - Peak detector

Qp - Quasi-Peak detector

RADIATED EMISSIONS 1000 TO 18,000 MHz - FCC

Radiated Emissions Graph



Radiated Emissions Data Points**Trace Markers**

| Marker | Frequency (GHz) | Meter Reading (dBuV) | Det | AF T862 (dB/m) | Amp/Cbl (dB) | Corrected Reading dBuV/m | Class B Avg Limit (dBuV/m) | Margin (dB) | Class B Pk Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|--------------------------|----------------------------|-------------|---------------------------|----------------|----------------|-------------|----------|
| 1 | 1.76257 | 31.54 | Avg | 30 | -31.6 | 29.94 | 54 | -24.06 | - | - | 0-360 | 98 | H |
| 2 | 3.21121 | 28.42 | Avg | 33.6 | -28.9 | 33.12 | 54 | -20.88 | - | - | 0-360 | 199 | H |
| 3 | 5.42304 | 26.58 | Avg | 34.8 | -26.6 | 34.78 | 54 | -19.22 | - | - | 0-360 | 98 | H |
| 4 | 1.76621 | 30.86 | Avg | 30.1 | -31.6 | 29.36 | 54 | -24.64 | - | - | 0-360 | 101 | V |
| 5 | 3.20757 | 28.44 | Avg | 33.5 | -28.9 | 33.04 | 54 | -20.96 | - | - | 0-360 | 199 | V |
| 6 | 5.46857 | 26.53 | Avg | 34.9 | -26.3 | 35.13 | 54 | -18.87 | - | - | 0-360 | 101 | V |

Avg - Video bandwidth < Resolution bandwidth

Radiated Emissions

| Frequency (GHz) | Meter Reading (dBuV) | Det | AF T862 (dB/m) | Amp/Cbl (dB) | Corrected Reading dBuV/m | Class B Avg Limit (dBuV/m) | Margin (dB) | Class B Pk Limit (dBuV/m) | PK Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|-----------------|----------------------|-----|----------------|--------------|--------------------------|----------------------------|-------------|---------------------------|----------------|----------------|-------------|----------|
| 1.76285 | 39.15 | Pk | 30 | -31.6 | 37.55 | - | - | 74 | -36.45 | 303 | 368 | H |
| 1.76285 | 26.44 | Av | 30 | -31.6 | 24.84 | 54 | -29.16 | - | - | 303 | 368 | H |
| 3.2133 | 24.27 | Av | 33.6 | -28.9 | 28.97 | 54 | -25.03 | - | - | 108 | 383 | H |
| 5.42376 | 22.12 | Av | 34.8 | -26.6 | 30.32 | 54 | -23.68 | - | - | 194 | 220 | H |
| 3.21124 | 37.67 | Pk | 33.6 | -28.9 | 42.37 | - | - | 74 | -31.63 | 108 | 382 | H |
| 5.42104 | 27.41 | Pk | 34.8 | -26.5 | 35.71 | - | - | 74 | -38.29 | 194 | 221 | H |
| 1.76557 | 40.12 | Pk | 30 | -31.6 | 38.52 | - | - | 74 | -35.48 | 94 | 257 | V |
| 1.76557 | 26.37 | Av | 30 | -31.6 | 24.77 | 54 | -29.23 | - | - | 94 | 257 | V |
| 3.20581 | 38.16 | Pk | 33.4 | -28.9 | 42.66 | - | - | 74 | -31.34 | 208 | 158 | V |
| 3.20581 | 24.27 | Av | 33.4 | -28.9 | 28.77 | 54 | -25.23 | - | - | 208 | 158 | V |
| 5.46951 | 36.28 | Pk | 34.9 | -26.4 | 44.78 | - | - | 74 | -29.22 | 18 | 175 | V |
| 5.46951 | 22.22 | Av | 34.9 | -26.4 | 30.72 | 54 | -23.28 | - | - | 18 | 175 | V |

Pk - Peak detector

Av - Average detection

Appendix A**Facilities, Accreditations and Authorizations**

NVLAP Lab code: 200065-0

NVLAP: The National Institute of Standards and Technology (NIST) administers the National Voluntary Laboratory Accreditation Program (NVLAP). NVLAP is comprised of laboratory accreditation programs (LAPs) which are established on the basis of requests and demonstrated need. Each LAP includes specific calibration and/or test standards and related methods and protocols assembled to satisfy the unique needs for accreditation in a field of testing or calibration. NVLAP accredits public and private laboratories based on evaluation of their technical qualifications and competence to carry out specific calibrations or tests. Accreditation criteria are established in accordance with the U.S. Code of Federal Regulations (CFR, Title 15, Part 285), NVLAP Procedures and General Requirements, and encompass the requirements of ISO/IEC 17025. For a full scope listing see <http://ts.nist.gov/standards/scopes/1004140.htm>



FCC: Details of the measurement facilities used for these tests have been filed with the Federal Communications Commission's Laboratory in Columbia, Maryland (Ref. No. 91044).



Industry Canada Industrie Canada

Industry of Canada: Accredited by Industry Canada for performance of radiated measurements. Our test site complies with RSP 100, Issue 7, Section 3.3. File #: IC 2180



VCCI: Accepted as an Associate Member to the VCCI. The measurement facilities detailed in this test report have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. Registration Nos.: Radiated Emissions R-621, Conducted Emissions C-642.



ICASA: ICASA (Independent Communications Authority of South Africa) has appointed UL as a Designated Test Laboratory to test Telecommunications equipment for type approval in compliance with CISPR 22 to assist in fulfilling its mandate under section 54(1) of the Telecommunications Act, 1996 (Act 103 of 1996).

NIST/CAB: Validated by the European Commission as a U.S. Conformity Assessment Body (CAB) of the U.S.-EU



Mutual Recognition Agreement (MRA) for the Electromagnetic Compatibility - Council Directive 2004/108/EC, Annex III (2-3). Also validated for the Telecommunication Equipment-Council Directive 99/5/EC, Annex III and IV, Identification Number: 0983.

NIST/CAB: Provisioned to act as a U.S. Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the Asia Pacific Economic Cooperation (APEC) MRA between the American Institute in Taiwan (AIT) and the United States. Our laboratory is considered qualified to test equipment subject to the applicable EMC regulations of the Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI) which require testing to CNS 13438 (CISPR 22).

NIST/CAB: Recognized by the Infocomm Development Authority of Singapore (IDA) under the Asia Pacific Economic Cooperation Mutual Recognition Agreement (APEC MRA). Our laboratory is provisionally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC MRA. Our scope of designation includes IDA TS EMC (CISPR 22), IEC 61000-4-2, -4-3, -4-4, -4-5, and -4-6

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and 47658 Kato Road, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

| 47173 Benicia Street | 47266 Benicia Street | 47658 Kato Rd |
|---|--|---|
| <input checked="" type="checkbox"/> Chamber A (ISED:2324B-1) | <input type="checkbox"/> Chamber D (ISED:22541-1) | <input checked="" type="checkbox"/> Chamber I (ISED:2324A-5) |
| <input type="checkbox"/> Chamber B (ISED:2324B-2) | <input type="checkbox"/> Chamber E (ISED:22541-2) | <input type="checkbox"/> Chamber J (ISED:2324A-6) |
| <input type="checkbox"/> Chamber C (ISED:2324B-3) | <input type="checkbox"/> Chamber F (ISED:22541-3) | <input type="checkbox"/> Chamber K (ISED:2324A-1) |
| | <input type="checkbox"/> Chamber G (ISED:22541-4) | <input type="checkbox"/> Chamber L (ISED:2324A-3) |
| | <input type="checkbox"/> Chamber H (ISED:22541-5) | |

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

END OF TEST REPORT