**FCC 47 CFR PART 15 SUBPART C**

**CERTIFICATION TEST REPORT**

**FOR**

**Mobile Payment Terminal with Bluetooth connectivity, Magnetic Strip and Contactless reader**

**MODEL NUMBER: BLUEPAD-50**

**FCC ID: YRWBLUEPAD-50**

**REPORT NUMBER: 11737160-E1V2**

**ISSUE DATE: 09/27/2017**

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

*Prepared by*
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NVLAP LAB CODE 200065-0

## Revision History

| Rev. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| V1 | 06/02/17 | Initial Issue | B. Bayani |
| V2 | 09/27/17 | Revised Report based on reviewer's comments: Updated Section 9.2. | B. Bayani |


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# 1. ATTESTATION OF TEST RESULTS

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

**EUT DESCRIPTION:** Mobile payment terminal with Bluetooth connectivity, magnetic strip and Contactless reader.

**MODEL:** BLUEPAD-50

**SERIAL NUMBER:** 917900023

**DATE TESTED:** May 12, 2017 to May 19, 2017; September 27, 2017

| APPLICABLE STANDARDS | |
|---|---|
| **STANDARD** | **TEST RESULTS** |
| FCC PART 15 SUBPART C | Pass |

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Approved & Released For
UL Verification Services Inc. By:

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UL Verification Services Inc.

Prepared By:

LIONEL LARA
LAB ENGINEER
UL Verification Services Inc


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# 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, FCC CFR 47 Part 2, and FCC CFR 47 Part 15.

# 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, 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 |
|---|---|
| ☐ Chamber A | ☐ Chamber D |
| ☒ Chamber B | ☐ Chamber E |
| ☐ Chamber C | ☐ Chamber F |
| | ☐ Chamber G |
| | ☐ Chamber H |

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.htm.

# 4. CALIBRATION AND UNCERTAINTY

## 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

## 4.2. SAMPLE CALCULATION

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 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m


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## 4.3. MEASUREMENT UNCERTAINTY

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

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

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


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# 5. EQUIPMENT UNDER TEST

## 5.1. DESCRIPTION OF EUT

Mobile payment terminal with Bluetooth connectivity, magnetic strip, EMV chip & PIN and Contactless reader. Contains Bluetooth module FCC ID: GT3FC018.

## 5.2. MAXIMUM OUTPUT POWER

The testing was performed at 3 meter. The transmitter maximum E-field at 30 meter distance is 38.24 dBuV/m which is converted from the 3 meter data.

## 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a flexible printed circuit board antenna, with a maximum gain of 0 dBi.

## 5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was IRETest_PinPad 1.7.

## 5.5. WORST-CASE CONFIGURATION AND MODE

The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z. It was determined that the Z-orientation was the worst-case orientation, therefore, all final radiated testing was performed with the EUT in the Z-orientation while generating continuous emissions.


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## 5.6. DESCRIPTION OF TEST SETUP

**SUPPORT EQUIPMENT**

| Support Equipment List | | | | |
|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Serial Number** | **FCC ID** |
| AC/DC charger | Apple | A1265 | 1X1132QX28QZ | - |

**I/O CABLES**

| I/O Cable List | | | | | | |
|---|---|---|---|---|---|---|
| **Cable No** | **Port** | **# of identical ports** | **Connector Type** | **Cable Type** | **Cable Length (m)** | **Remarks** |
| 1 | USB | 1 | USB | Unshielded | 1 | EUT to AC/DC Charger |

**TEST SETUP**

The EUT is connected to the AC/DC charger via USB cable. Test software exercised the EUT.


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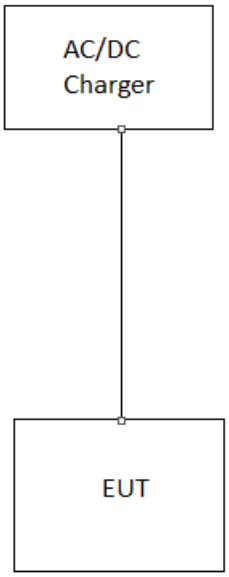
**SETUP DIAGRAM FOR TESTS**





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# 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

| TEST EQUIPMENT LIST | | | | |
|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Asset** | **Cal Due** |
| Antenna, Broadband Hybrid, 30MHz to 2000MHz | Sunol Sciences Corp. | JB3 | T477 | 06/22/2017 |
| Antenna, Active Loop 9kHz-30MHz | ETS-Lindgren | 6502 | T1683 | 02/17/2018 |
| Amplifier, 10kHz-1GHz | Agilent (Keysight) Technologies | 8447D | T15 | 08/26/2017 |
| Spectrum Analyzer, PXA, 3Hz to 44GHz | Agilent (Keysight) Technologies | N9030A | T907 | 01/23/2018 |
| Spectrum Analyzer, PXA, 3Hz to 44GHz | Agilent (Keysight) Technologies | N9030A | T1450 | 01/10/2018 |
| Temperature Chamber | Thermotron Industires | SE-600-10-10 | T80 | 08/21/2017 |
| EMI Test Receiver | Rohde & Schwarz | ESR | T1436 | 01/18/2018 |
| LISN | Fischer Custom Communications | FCC-LISN-50/250-25-2-01 | T1310 | 06/15/2018 |
| Transient Limiter | COM-POWER | LIT-930 | T1457 | 02/24/18 |
| Radiated Software | UL | UL EMC | Ver 9.5, April 26, 2016 | |
| Conducted Software | UL | UL EMC | Ver 9.5, May 26, 2015 | |


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# 7. ANTENNA PORT TEST RESULTS

## 7.1. 20 dB BANDWIDTH

**LIMIT**

None; for reporting purposes only.

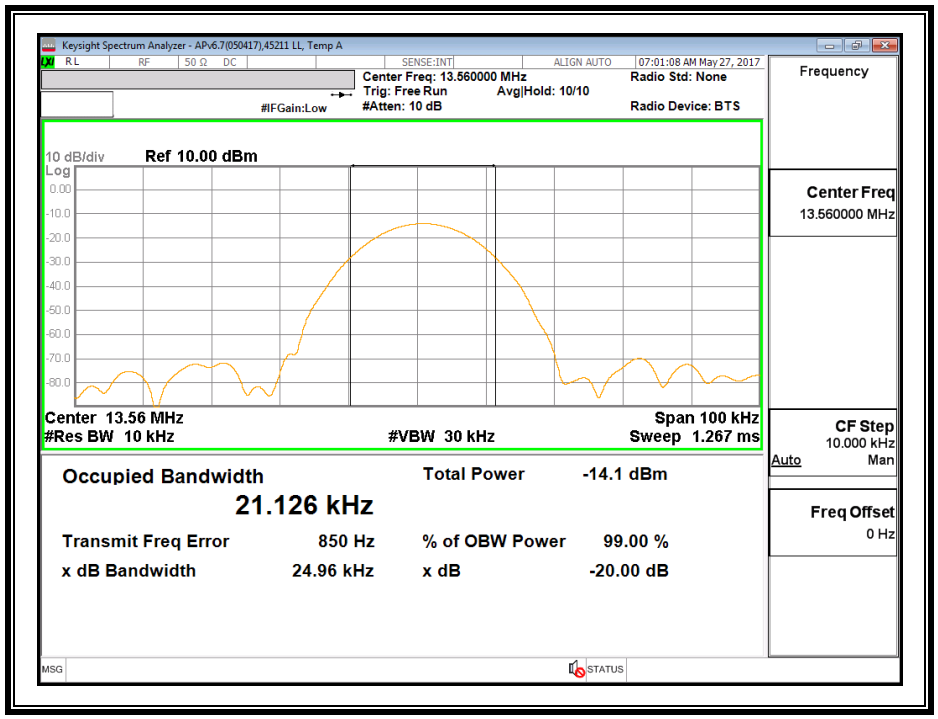
**TEST PROCEDURE**

§2.1049

The 20dB bandwidth was measured by using a spectrum analyzer.

**RESULTS**

| Frequency (MHz) | 20 dB Bandwidth (KHz) |
|---|---|
| 13.56 | 24.96 |




NOTE: Because the measured signal is CW adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.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## 7.2. FREQUENCY STABILITY

**LIMIT**

§15.225 (e) The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency, over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

**TEST PROCEDURE**

ANSI C63.10

**RESULTS**

| ID: | 45256 JB | Date: | 5/12/2017 |
|---|---|---|---|

**TEST INFORMATION**

| Reference Frequency: EUT Channel 13.56 MHz @ 20ºC<br>Limit: ± 100 ppm = 1.356 kHz | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Power Supply | Envir. Temp | Frequency Deviation Measureed with Time Elapse | | | | | | | | |
| (Vdc) | (ºC) | Startup (MHz) | Delta (ppm) | @ 2 mins (MHz) | Delta (ppm) | @ 5 mins (MHz) | Delta (ppm) | @ 10 mins (MHz) | Delta (ppm) | Limit (ppm) |
| 3.7 | 50 | 13.5607000 | -7.375 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | ± 100 |
| 3.7 | 40 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | ± 100 |
| 3.7 | 30 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | ± 100 |
| 3.7 | ***20*** | ***13.5606000*** | ***0.000*** | ***13.5606000*** | ***0.000*** | ***13.5606000*** | ***0.000*** | ***13.5606000*** | ***0.000*** | ***± 100*** |
| 3.7 | 10 | 13.5607000 | -7.375 | 13.5607000 | -7.375 | 13.5607000 | -7.375 | 13.5607000 | -7.375 | ± 100 |
| 3.7 | 0 | 13.5607000 | -7.375 | 13.5607000 | -7.375 | 13.5607000 | -7.375 | 13.5607000 | -7.375 | ± 100 |
| 3.7 | -10 | 13.5607000 | -7.375 | 13.5607000 | -7.375 | 13.5607000 | -7.375 | 13.5607000 | -7.375 | ± 100 |
| 3.7 | -20 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | ± 100 |
| 3.15 | 20 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | ± 100 |
| 4.26 | 20 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | 13.5606000 | 0.000 | ± 100 |


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# 8. RADIATED EMISSION TEST RESULTS

## 8.1. LIMITS AND PROCEDURE

**LIMIT**

§15.225

(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/ meter at 30 meters.

(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110– 14.010 MHz and shall not exceed the general radiated emission limits in § 15.209 as follows:
§15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Limits for radiated disturbance of an intentional radiator | | |
|---|---|---|
| Frequency range (MHz) | Limits (µV/m) | Measurement Distance (m) |
| 0.009 – 0.490 | 2400 / F (kHz) | 300 |
| 0.490 – 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 |

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.
§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

In addition:

§15.209 (d) The emission limits shown the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

§15.209 (d) The provisions in §§ 15.225, measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.


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KDB 414788 OATS and Chamber Correlation Justification

- Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

- OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

**RESULTS**


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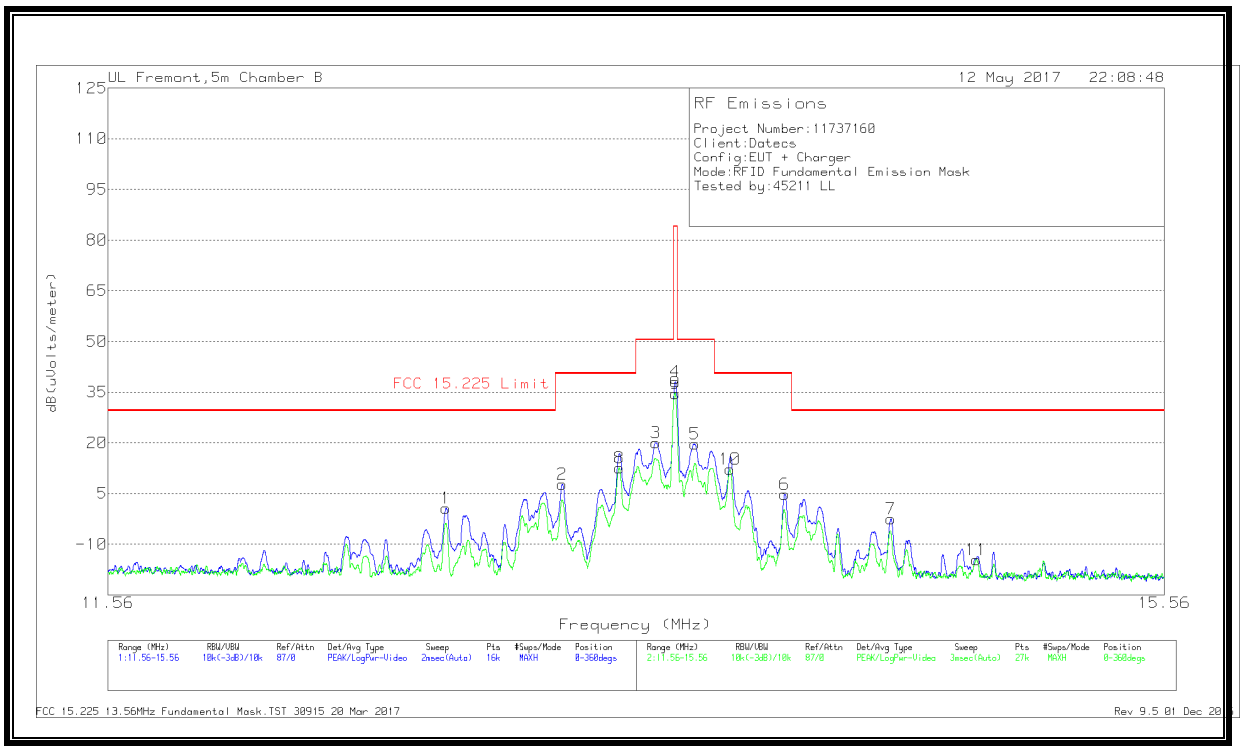
## 8.1.1. FUNDAMENTAL EMISSION MASK(11.56 to 15.56MHz)





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## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna (dB/m) | Cbl (dB) | Dist Corr 30m | Corrected Reading dB(uVolts/meter) | FCC 15.225 Limit | PK Margin (dB) | Azimuth (Degs) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12.71363 | 28.6 | Pk | 10.5 | 1.6 | -40 | .7 | 29.54 | -28.84 | 0-360 |
| 2 | 13.13663 | 35.71 | Pk | 10.4 | 1.6 | -40 | 7.71 | 40.51 | -32.8 | 0-360 |
| 8 | 13.34814 | 40.59 | Pk | 10.4 | 1.6 | -40 | 12.59 | 40.51 | -27.92 | 0-360 |
| 3 | 13.48663 | 48.02 | Pk | 10.4 | 1.6 | -40 | 20.02 | 50.5 | -30.48 | 0-360 |
| 9 | 13.55978 | 62.63 | Pk | 10.4 | 1.6 | -40 | 34.63 | 84 | -49.37 | 0-360 |
| 4 | 13.56038 | 66.08 | Pk | 10.4 | 1.6 | -40 | 38.08 | 84 | -45.92 | 0-360 |
| 5 | 13.63438 | 47.64 | Pk | 10.4 | 1.6 | -40 | 19.64 | 50.5 | -30.86 | 0-360 |
| 10 | 13.77045 | 40.21 | Pk | 10.3 | 1.6 | -40 | 12.11 | 40.51 | -28.4 | 0-360 |
| 6 | 13.98488 | 32.91 | Pk | 10.3 | 1.6 | -40 | 4.81 | 40.51 | -35.7 | 0-360 |
| 7 | 14.40838 | 25.57 | Pk | 10.3 | 1.6 | -40 | -2.53 | 29.54 | -32.07 | 0-360 |
| 11 | 14.75895 | 13.56 | Pk | 10.2 | 1.6 | -40 | -14.64 | 29.54 | -44.18 | 0-360 |

Pk - Peak detector

## Fundamental

| Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna (dB/m) | Cbl (dB) | Dist Corr 30m | Corrected Reading dB(uVolts/meter) | FCC 15.225 Limit | PK Margin (dB) | Azimuth (Degs) | Antenna Position |
|---|---|---|---|---|---|---|---|---|---|---|
| 13.5604 | 66.24 | Pk | 10.4 | 1.6 | -40 | 38.24 | 84 | -45.76 | 173 | Face On |
| 13.5606 | 62.89 | Pk | 10.4 | 1.6 | -40 | 34.89 | 84 | -49.11 | 268 | Face Off |

Pk - Peak detector


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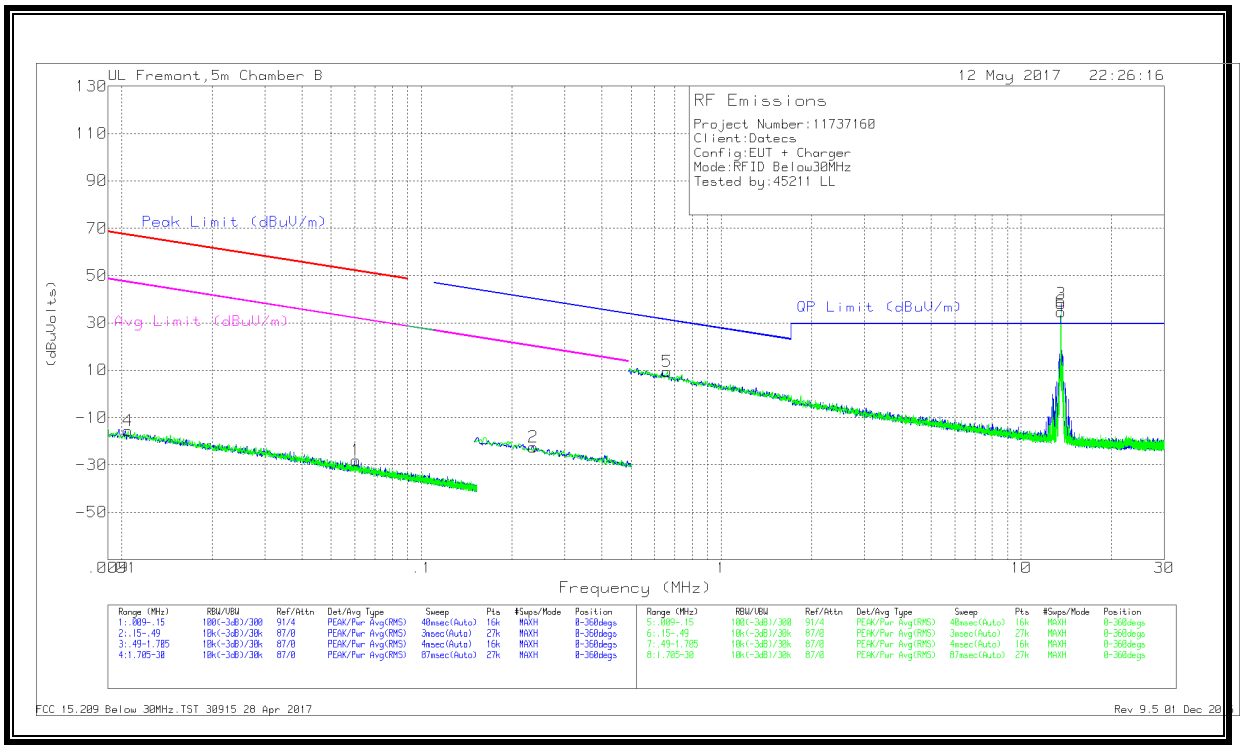
## 8.1.2. SPURIOUS EMISSIONS (0.09 – 30 MHz)





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## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna (dB/m) | Cbl (dB) | Dist Corr 300m | Corrected Reading (dBuVolts) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | .0105 | 43.62 | Pk | 19.3 | 1.4 | -80 | -15.68 | 67.16 | -82.84 | 47.16 | -62.84 | - | - | - | - | 0-360 |
| 1 | .06049 | 38.31 | Pk | 12.2 | 1.4 | -80 | -28.09 | 51.95 | -80.04 | 31.95 | -60.04 | - | - | - | - | 0-360 |
| 2 | .23568 | 44.52 | Pk | 11.5 | 1.5 | -80 | -22.48 | - | - | - | - | 40.17 | -62.65 | 20.17 | -42.65 | 0-360 |

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | Loop Antenna (dB/m) | Cbl (dB) | Dist Corr 30m | Corrected Reading (dBuVolts) | QP Limit (dBuV/m) | Margin (dB) | Peak Limit (dBuV/m) | Margin (dB) | Avg Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | .66081 | 36.32 | Pk | 11.5 | 1.5 | -40 | 9.32 | 31.21 | -21.89 | - | - | - | - | 0-360 |
| 3 | **13.55998 | 66.12 | Pk | 10.4 | 1.6 | -40 | 38.12 | - | - | - | - | - | - | 0-360 |
| 6 | **13.55998 | 62.8 | Pk | 10.4 | 1.6 | -40 | 34.8 | - | - | - | - | - | - | 0-360 |

Pk - Peak detector
** - Fundamental frequency


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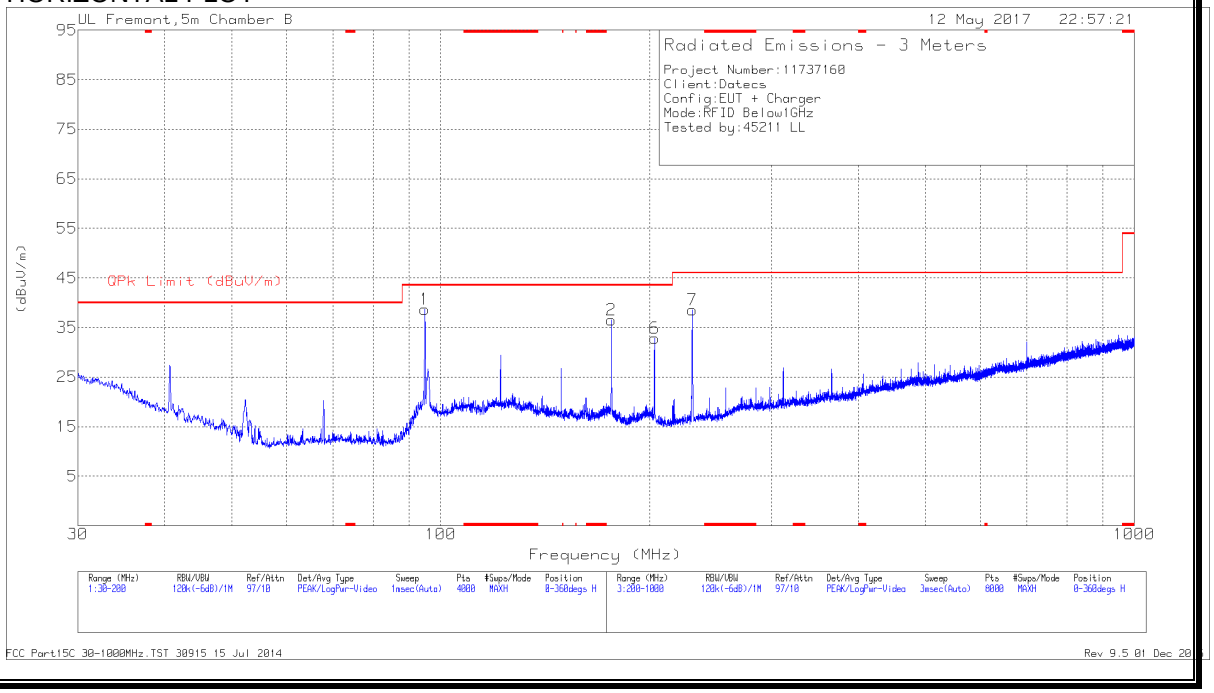
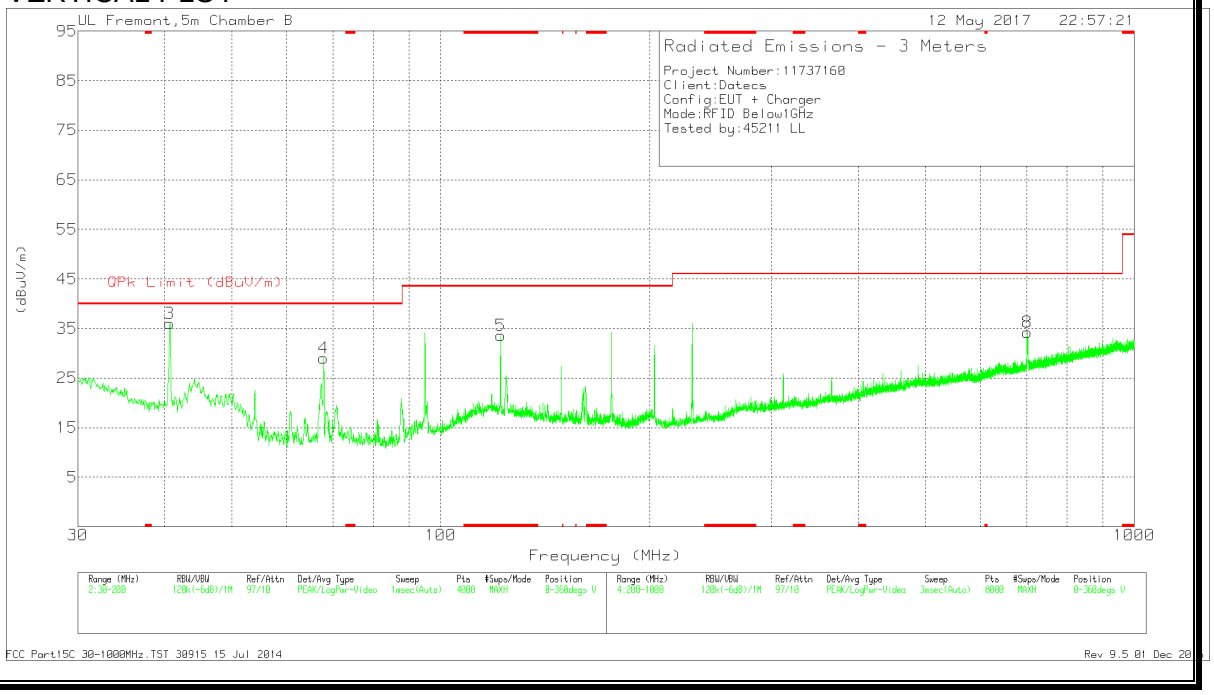
## 8.1.3. TX SPURIOUS EMISSION 30 TO 1000 MHz

HORIZONTAL PLOT




VERTICAL PLOT





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## Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T477 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | * 122.0363 | 43.56 | Pk | 17.7 | -27.7 | 33.56 | 43.52 | -9.96 | 0-360 | 100 | V |
| 3 | 40.6703 | 47.19 | Pk | 17.5 | -28.7 | 35.99 | 40 | -4.01 | 0-360 | 100 | V |
| 4 | 67.7923 | 45.47 | Pk | 11.9 | -28.3 | 29.07 | 40 | -10.93 | 0-360 | 100 | V |
| 1 | 94.9143 | 53.83 | Pk | 12.8 | -28 | 38.63 | 43.52 | -4.89 | 0-360 | 300 | H |
| 2 | 176.2804 | 48.26 | Pk | 15.4 | -27.1 | 36.56 | 43.52 | -6.96 | 0-360 | 100 | H |
| 6 | 203.4004 | 44.21 | Pk | 15.4 | -26.8 | 32.81 | 43.52 | -10.71 | 0-360 | 100 | H |
| 7 | 230.504 | 50.1 | Pk | 15 | -26.5 | 38.6 | 46.02 | -7.42 | 0-360 | 100 | H |
| 8 | 700.9651 | 35.16 | Pk | 24.1 | -25 | 34.26 | 46.02 | -11.76 | 0-360 | 100 | V |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

## Radiated Emissions

| Frequency (MHz) | Meter Reading (dBuV) | Det | AF T477 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 40.6794 | 46.11 | Qp | 17.5 | -28.7 | 34.91 | 40 | -5.09 | 299 | 107 | V |
| 94.9225 | 53.42 | Qp | 12.8 | -28 | 38.22 | 43.52 | -5.3 | 203 | 263 | H |

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Qp - Quasi-Peak detector


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# 9. AC MAINS LINE CONDUCTED EMISSIONS

**LIMITS**

§15.207

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

| Frequency range (MHz) | Limits (dBµV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15 to 0.50 | 66 to 56 | 56 to 46 |
| 0.50 to 5 | 56 | 46 |
| 5 to 30 | 60 | 50 |
| Notes:<br>1. The lower limit shall apply at the transition frequencies<br>2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz. | | |

**TEST PROCEDURE**

ANSI C63.10

**RESULTS**


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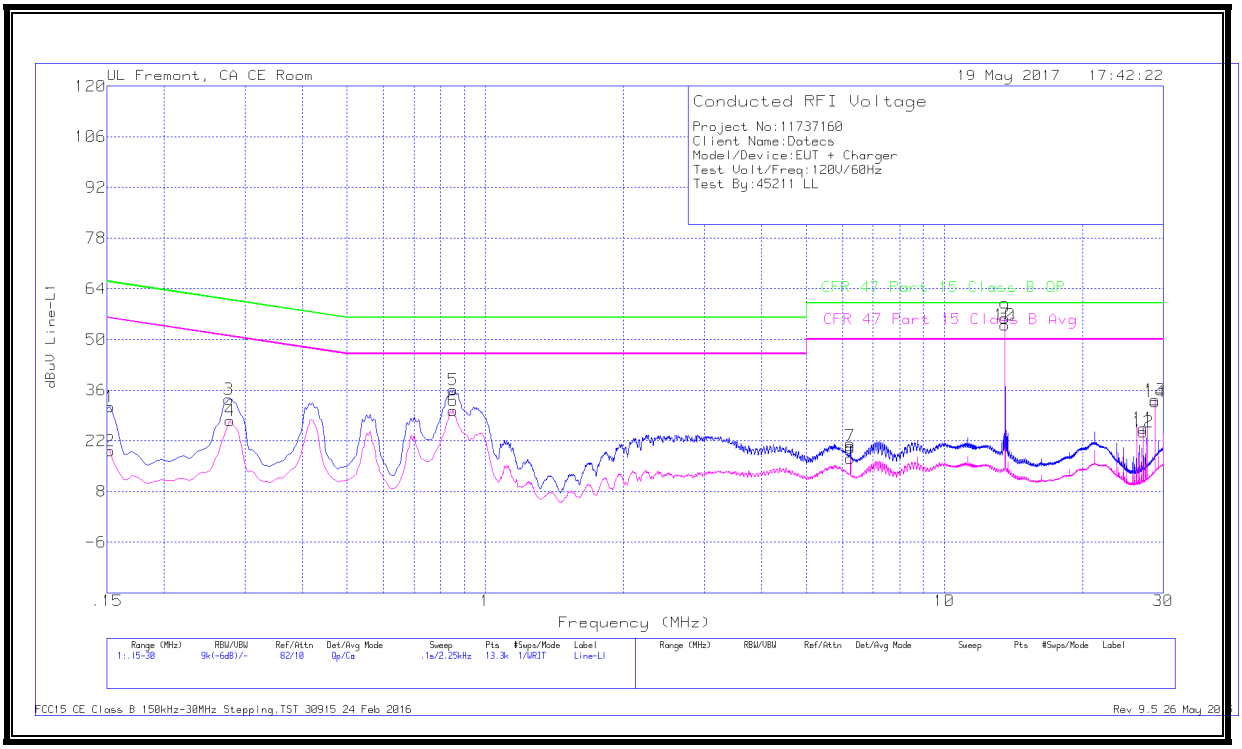
## 9.1. NORMAL OPERATION

**LINE 1 RESULTS**





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## Trace Markers

| 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 | .15225 | 21.06 | Qp | .1 | .1 | 10.1 | 31.36 | 65.88 | -34.52 | - | - |
| 2 | .15225 | 8.89 | Ca | .1 | .1 | 10.1 | 19.19 | - | - | 55.88 | -36.69 |
| 3 | .276 | 23.29 | Qp | 0 | .1 | 10.1 | 33.49 | 60.94 | -27.45 | - | - |
| 4 | .27825 | 17.3 | Ca | 0 | .1 | 10.1 | 27.5 | - | - | 50.87 | -23.37 |
| 5 | .852 | 25.94 | Qp | 0 | .1 | 10.1 | 36.14 | 56 | -19.86 | - | - |
| 6 | .85087 | 20.08 | Ca | 0 | .1 | 10.1 | 30.28 | - | - | 46 | -15.72 |
| 7 | 6.24975 | 10.21 | Qp | 0 | .2 | 10.2 | 20.61 | 60 | -39.39 | - | - |
| 8 | 6.24975 | 6.72 | Ca | 0 | .2 | 10.2 | 17.12 | - | - | 50 | -32.88 |
| 9 | **13.56 | 45.39 | Qp | .1 | .2 | 10.2 | 55.89 | - | - | - | - |
| 10 | **13.56 | 43.44 | Ca | .1 | .2 | 10.2 | 53.94 | - | - | - | - |
| 11 | 27.12075 | 14.58 | Qp | .1 | .3 | 10.5 | 25.48 | 60 | -34.52 | - | - |
| 12 | 27.12075 | 13.62 | Ca | .1 | .3 | 10.5 | 24.52 | - | - | 50 | -25.48 |
| 13 | 28.74975 | 22.38 | Qp | .1 | .3 | 10.5 | 33.28 | 60 | -26.72 | - | - |
| 14 | 28.74975 | 21.96 | Ca | .1 | .3 | 10.5 | 32.86 | - | - | 50 | -17.14 |

Qp - Quasi-Peak detector

Ca - CISPR average detection

** - Fundamental frequency, 13.56MHz.


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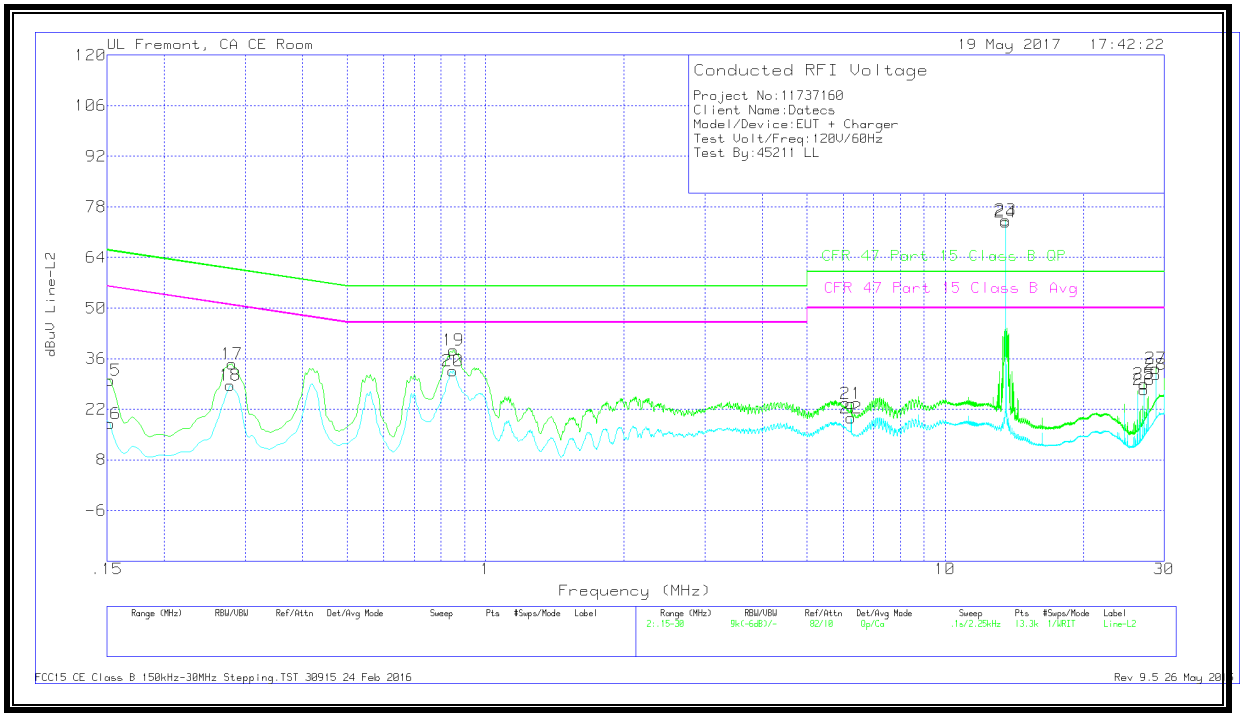
**LINE 2 RESULTS**





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## Trace Markers

| 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) |
| 15 | .15225 | 19.89 | Qp | 0 | 0 | 10.1 | 29.99 | 65.88 | -35.89 | - | - |
| 16 | .15225 | 7.88 | Ca | 0 | 0 | 10.1 | 17.98 | - | - | 55.88 | -37.9 |
| 17 | .2805 | 24.25 | Qp | 0 | .1 | 10.1 | 34.45 | 60.8 | -26.35 | - | - |
| 18 | .27825 | 18.4 | Ca | 0 | .1 | 10.1 | 28.6 | - | - | 50.87 | -22.27 |
| 19 | .852 | 28.2 | Qp | 0 | .1 | 10.1 | 38.4 | 56 | -17.6 | - | - |
| 20 | .84975 | 22.42 | Ca | 0 | .1 | 10.1 | 32.62 | - | - | 46 | -13.38 |
| 21 | 6.24975 | 13.14 | Qp | 0 | .2 | 10.2 | 23.54 | 60 | -36.46 | - | - |
| 22 | 6.24975 | 9.18 | Ca | 0 | .2 | 10.2 | 19.58 | - | - | 50 | -30.42 |
| 23 | **13.56 | 63.81 | Qp | .1 | .2 | 10.2 | 74.31 | - | - | - | - |
| 24 | **13.56 | 63.29 | Ca | .1 | .2 | 10.2 | 73.79 | - | - | - | - |
| 25 | 27.12075 | 18 | Qp | .1 | .3 | 10.5 | 28.9 | 60 | -31.1 | - | - |
| 26 | 27.12075 | 16.56 | Ca | .1 | .3 | 10.5 | 27.46 | - | - | 50 | -22.54 |
| 27 | 28.74975 | 22.45 | Qp | .1 | .3 | 10.5 | 33.35 | 60 | -26.65 | - | - |
| 28 | 28.74975 | 20.7 | Ca | .1 | .3 | 10.5 | 31.6 | - | - | 50 | -18.4 |

Qp - Quasi-Peak detector

Ca - CISPR average detection

** - Fundamental frequency, 13.56MHz.


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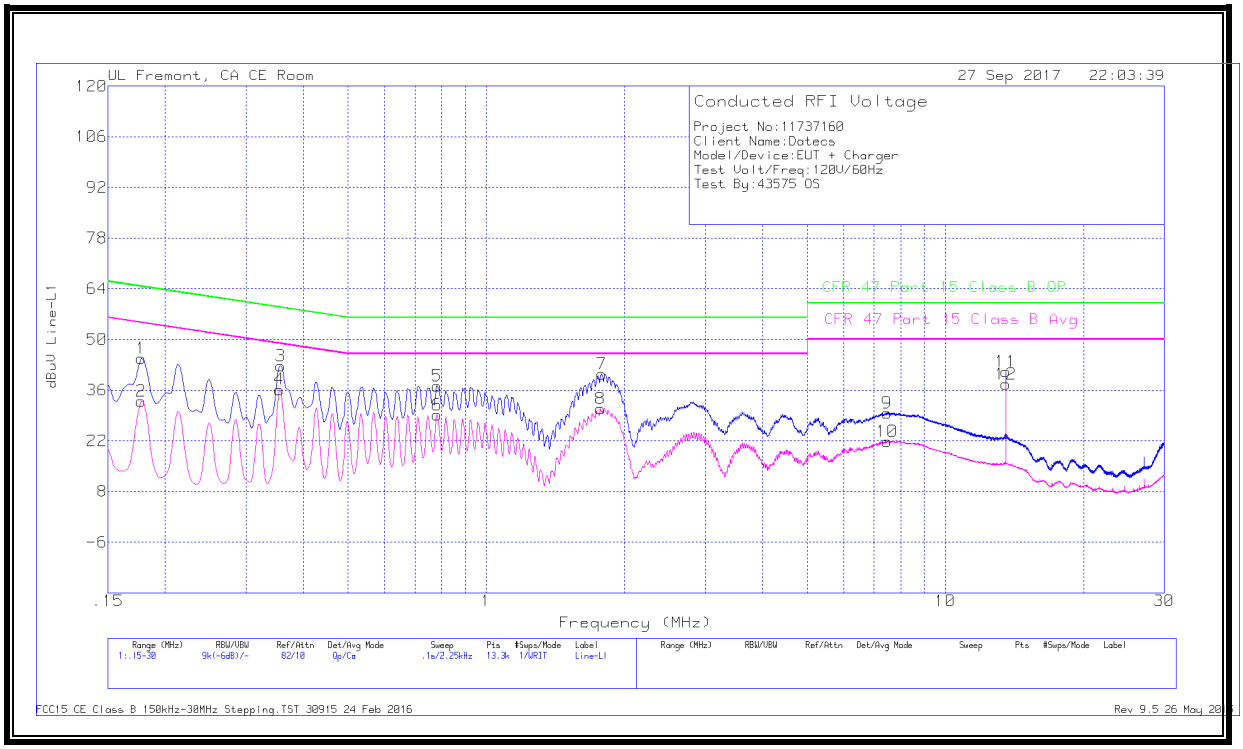
## 9.2. WITH ANTENNA PORT TERMINATED

**LINE 1 RESULTS**




Trace Markers

| 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 | .177 | 34.61 | Qp | 0 | 0 | 10.1 | 44.71 | 64.63 | -19.92 | - | - |
| 2 | .177 | 22.86 | Ca | 0 | 0 | 10.1 | 32.96 | - | - | 54.63 | -21.67 |
| 3 | .357 | 32.61 | Qp | 0 | 0 | 10.1 | 42.71 | 58.8 | -16.09 | - | - |
| 4 | .35475 | 26.08 | Ca | 0 | 0 | 10.1 | 36.18 | - | - | 48.85 | -12.67 |
| 5 | .78112 | 26.99 | Qp | 0 | 0 | 10.1 | 37.09 | 56 | -18.91 | - | - |
| 6 | .78225 | 19.06 | Ca | 0 | 0 | 10.1 | 29.16 | - | - | 46 | -16.84 |
| 7 | 1.78575 | 30.24 | Qp | 0 | .1 | 10.1 | 40.44 | 56 | -15.56 | - | - |
| 8 | 1.77225 | 20.72 | Ca | 0 | .1 | 10.1 | 30.92 | - | - | 46 | -15.08 |
| 9 | 7.46475 | 19.21 | Qp | 0 | .2 | 10.2 | 29.61 | 60 | -30.39 | - | - |
| 10 | 7.458 | 11.48 | Ca | 0 | .2 | 10.2 | 21.88 | - | - | 50 | -28.12 |
| 11 | **13.56 | 30.63 | Qp | .1 | .2 | 10.2 | 41.13 | 60 | -18.87 | - | - |
| 12 | **13.56 | 27.1 | Ca | .1 | .2 | 10.2 | 37.6 | - | - | 50 | -12.4 |

Qp - Quasi-Peak detector

Ca - CISPR average detection

** - Fundamental frequency, 13.56MHz.

***Note***: The 13.56MHz is a fundamental frequency of the EUT.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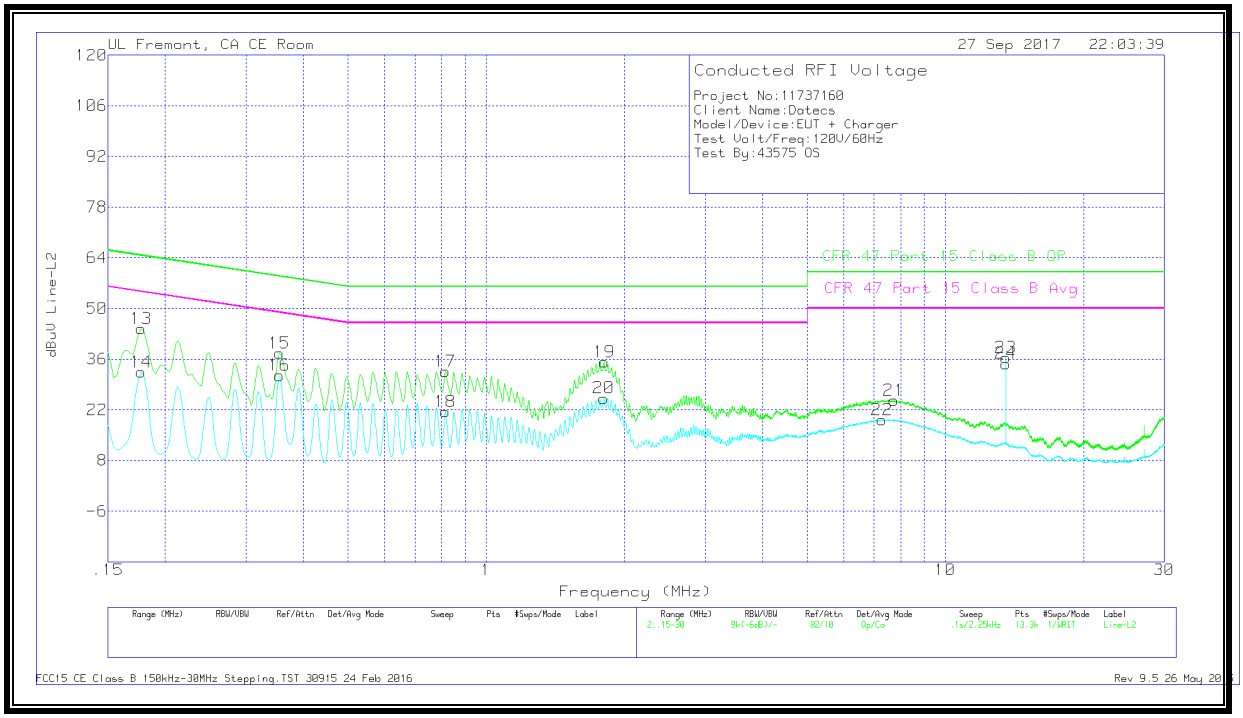
**LINE 2 RESULTS**




Trace Markers

| 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 | .177 | 34.4 | Qp | 0 | 0 | 10.1 | 44.5 | 64.63 | -20.13 | - | - |
| 14 | .177 | 22.32 | Ca | 0 | 0 | 10.1 | 32.42 | - | - | 54.63 | -22.21 |
| 15 | .35475 | 27.48 | Qp | 0 | 0 | 10.1 | 37.58 | 58.85 | -21.27 | - | - |
| 16 | .35475 | 21.39 | Ca | 0 | 0 | 10.1 | 31.49 | - | - | 48.85 | -17.36 |
| 17 | .81375 | 22.58 | Qp | 0 | 0 | 10.1 | 32.68 | 56 | -23.32 | - | - |
| 18 | .81375 | 11.37 | Ca | 0 | 0 | 10.1 | 21.47 | - | - | 46 | -24.53 |
| 19 | 1.806 | 24.99 | Qp | 0 | .1 | 10.1 | 35.19 | 56 | -20.81 | - | - |
| 20 | 1.80375 | 15.03 | Ca | 0 | .1 | 10.1 | 25.23 | - | - | 46 | -20.77 |
| 21 | 7.74375 | 14.23 | Qp | 0 | .2 | 10.2 | 24.63 | 60 | -35.37 | - | - |
| 22 | 7.287 | 8.84 | Ca | 0 | .2 | 10.2 | 19.24 | - | - | 50 | -30.76 |
| 23 | **13.56 | 25.96 | Qp | .1 | .2 | 10.2 | 36.46 | 60 | -23.54 | - | - |
| 24 | **13.56 | 24.29 | Ca | .1 | .2 | 10.2 | 34.79 | - | - | 50 | -15.21 |

Qp - Quasi-Peak detector

Ca - CISPR average detection

** - Fundamental frequency, 13.56MHz.

***Note***: The 13.56MHz is a fundamental frequency of the EUT.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