



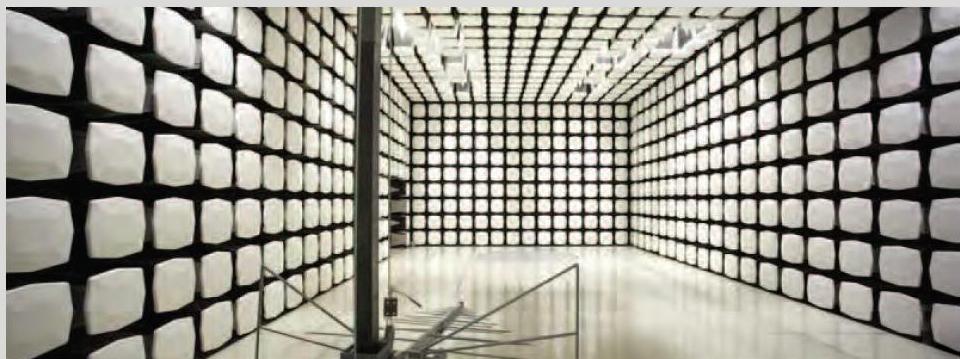
element

GSL Solutions, INC.

RFID IntelliPad REV B

**FCC 15.225:2020
13.56MHz**

Report: GSLS0015, Issue Date: December 8, 2020



NVLAP[®]
TESTING

NVLAP LAB CODE: 200630-0



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CERTIFICATE OF TEST



Last Date of Test: December 4, 2020
GSL Solutions, INC.
EUT: RFID IntelliPad REV B

Radio Equipment Testing

Standards

| Specification | Method |
|-----------------|------------------|
| FCC 15.207:2020 | |
| FCC 15.225:2020 | ANSI C63.10:2013 |

Results

| Method Clause | Test Description | Applied | Results | Comments |
|---------------|--|---------|---------|----------|
| 6.2 | Powerline Conducted Emissions | Yes | Pass | |
| 6.4 | Field Strength of Fundamental | Yes | Pass | |
| 6.4 | Field Strength of Spurious Emissions Less Than 30 MHz | Yes | Pass | |
| 6.5 | Field Strength of Spurious Emissions Greater Than 30 MHz | Yes | Pass | |
| 6.8 | Frequency Stability | Yes | Pass | |

Deviations From Test Standards

None

Approved By:

Kyle Holgate, Operations Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

REVISION HISTORY



| Revision Number | Description | Date (yyyy-mm-dd) | Page Number |
|-----------------|-------------|----------------------|-------------|
| 00 | None | | |

ACCREDITATIONS AND AUTHORIZATIONS

United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Element to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

ISED - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB) and as a CAB for the acceptance of test data.

European Union

European Commission – Within Element, we have a EU Notified Body validated for the EMCD and RED Directives.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

MSIT / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Israel

MOC – Recognized by MOC as a CAB for the acceptance of test data.

Hong Kong

OFCA – Recognized by OFCA as a CAB for the acceptance of test data.

Vietnam

MIC – Recognized by MIC as a CAB for the acceptance of test data.

SCOPE

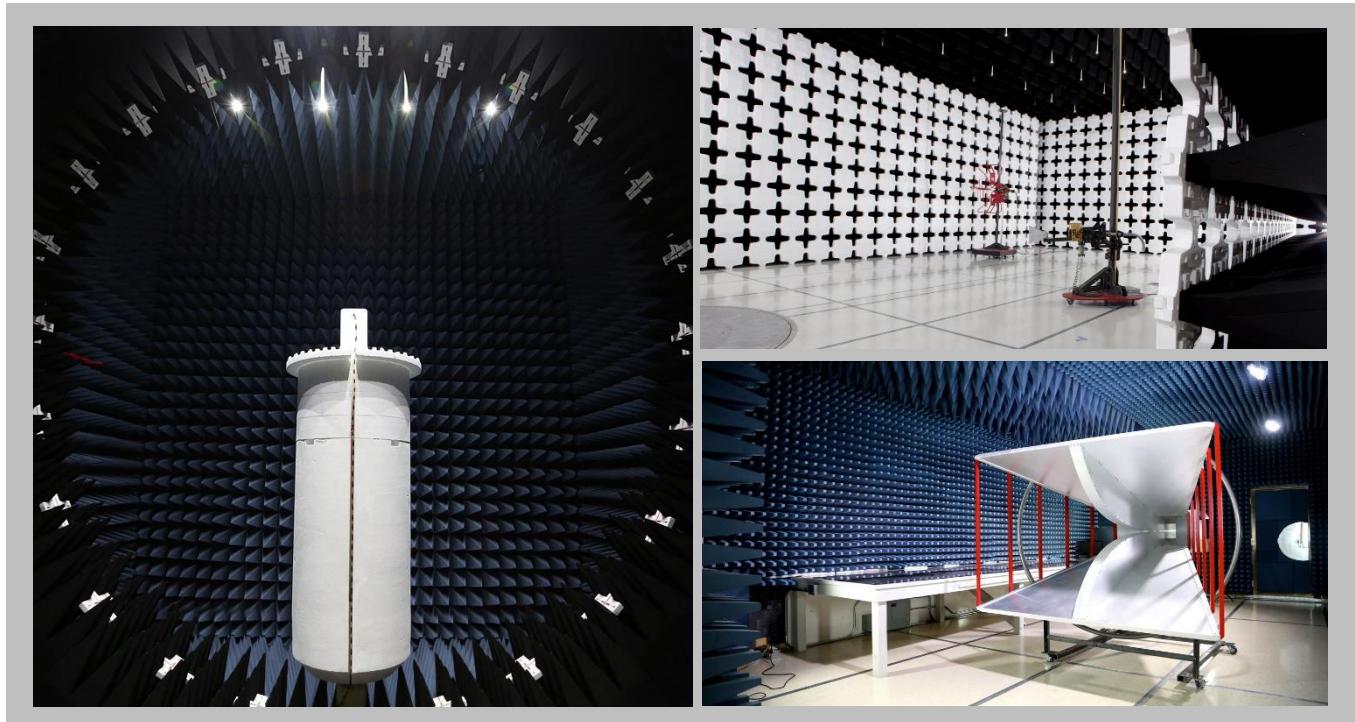
For details on the Scopes of our Accreditations, please visit:

<https://www.nwemc.com/emc-testing-accreditations>

FACILITIES



| | | | | |
|---|---|---|--|--|
| California Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918 | Minnesota Labs MN01-10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612) 638-5136 | Oregon Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066 | Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255 | Washington Labs NC01-05 19201 120th Ave NE Bothell, WA 98011 (425) 984-6600 |
| NVLAP | | | | |
| NVLAP Lab Code: 200676-0 | NVLAP Lab Code: 200881-0 | NVLAP Lab Code: 200630-0 | NVLAP Lab Code: 201049-0 | NVLAP Lab Code: 200629-0 |
| Innovation, Science and Economic Development Canada | | | | |
| 2834B-1, 2834B-3 | 2834E-1, 2834E-3 | 2834D-1 | 2834G-1 | 2834F-1 |
| BSMI | | | | |
| SL2-IN-E-1154R | SL2-IN-E-1152R | SL2-IN-E-1017 | SL2-IN-E-1158R | SL2-IN-E-1153R |
| VCCI | | | | |
| A-0029 | A-0109 | A-0108 | A-0201 | A-0110 |
| Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA | | | | |
| US0158 | US0175 | US0017 | US0191 | US0157 |



MEASUREMENT UNCERTAINTY



Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

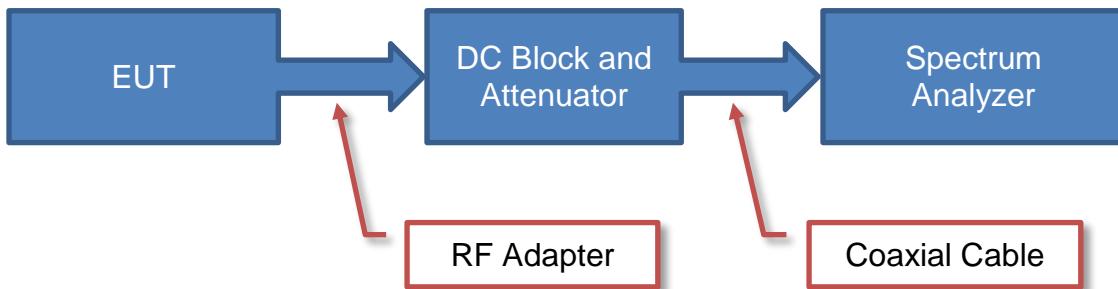
A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable test description page. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

| Test | + MU | - MU |
|---------------------------------------|---------|----------|
| Frequency Accuracy | 0.0007% | -0.0007% |
| Amplitude Accuracy (dB) | 1.2 dB | -1.2 dB |
| Conducted Power (dB) | 1.2 dB | -1.2 dB |
| Radiated Power via Substitution (dB) | 0.7 dB | -0.7 dB |
| Temperature (degrees C) | 0.7°C | -0.7°C |
| Humidity (% RH) | 2.5% RH | -2.5% RH |
| Voltage (AC) | 1.0% | -1.0% |
| Voltage (DC) | 0.7% | -0.7% |
| Field Strength (dB) | 5.2 dB | -5.2 dB |
| AC Powerline Conducted Emissions (dB) | 2.6 dB | -2.6 dB |

Test Setup Block Diagrams

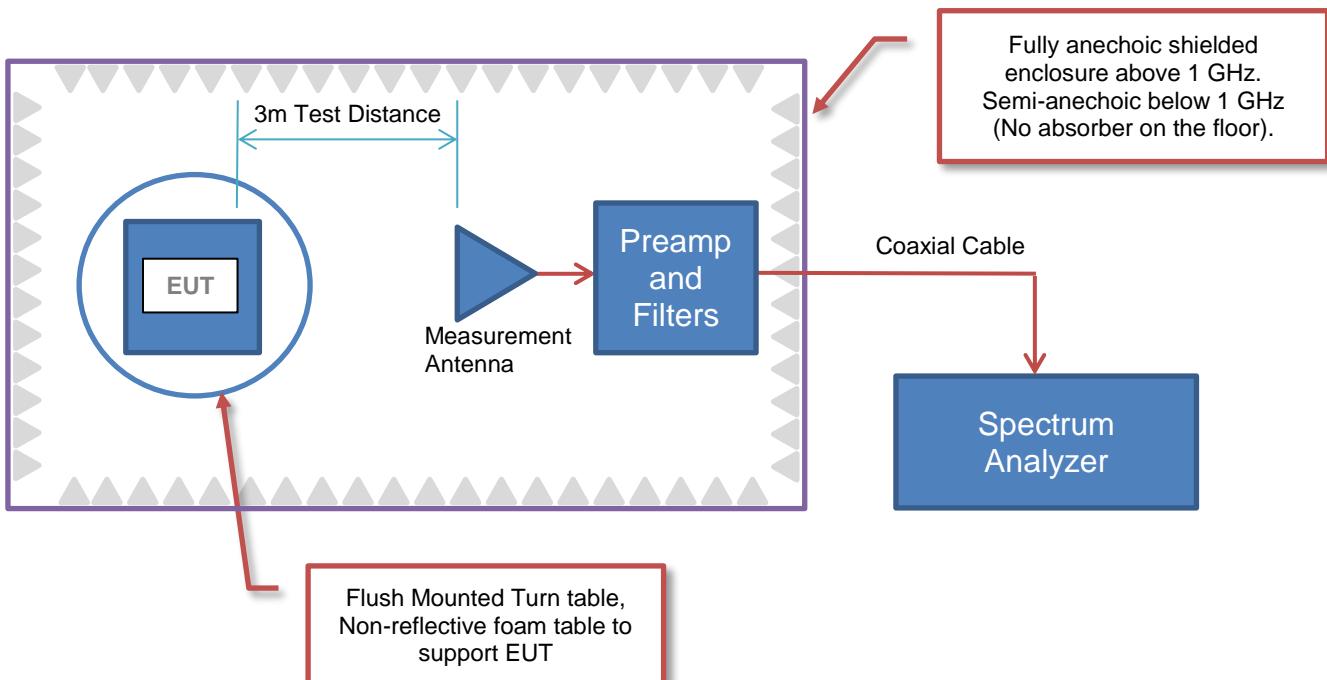
Antenna Port Conducted Measurements



Near Field Test Fixture Measurements



Spurious Radiated Emissions



PRODUCT DESCRIPTION



Client and Equipment Under Test (EUT) Information

| | |
|---------------------------------|-----------------------|
| Company Name: | GSL Solutions, INC. |
| Address: | 2414 SE 125th Avenue |
| City, State, Zip: | Vancouver, WA 98683 |
| Test Requested By: | Joe Intile |
| EUT: | RFID IntelliPad REV B |
| First Date of Test: | November 12, 2020 |
| Last Date of Test: | December 4, 2020 |
| Receipt Date of Samples: | November 5, 2020 |
| Equipment Design Stage: | Production |
| Equipment Condition: | No Damage |
| Purchase Authorization: | Verified |

Information Provided by the Party Requesting the Test

| |
|--|
| Functional Description of the EUT: |
| RFID Reader |
| Testing Objective: |
| To demonstrate compliance to FCC Part 15.225 specifications. |

CONFIGURATIONS



Configuration GSLS0015- 1

| EUT | | | | | |
|-------------|---------------------|-------------------|---------------|--|--|
| Description | Manufacturer | Model/Part Number | Serial Number | | |
| RFID Reader | GSL Solutions, INC. | IntelliPad REV B | CT2909 | | |

| Peripherals in test setup boundary | | | | | |
|------------------------------------|--------------|-------------------|----------------|--|--|
| Description | Manufacturer | Model/Part Number | Serial Number | | |
| Laptop | HP | EliteBook 8570p | 5CB3061RPX | | |
| AC Adapter | HP | PPP12D-S | WCNXF0AAR3XCBA | | |

| Cables | | | | | |
|------------|--------|------------|---------|--------------|--------------|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
| AC Power | No | 1.8m | No | AC Mains | AC Adapter |
| DC Power | No | 1.5m | No | AC Adapter | Laptop |
| USB | Yes | 1.2m | No | Laptop | RFID Reader |
| USB | Yes | 1.0m | No | RFID Reader | Unterminated |

Configuration GSLS0015- 2

| EUT | | | | | |
|-------------|---------------------|-------------------|---------------|--|--|
| Description | Manufacturer | Model/Part Number | Serial Number | | |
| RFID Reader | GSL Solutions, INC. | IntelliPad REV B | CT2909 | | |

| Peripherals in test setup boundary | | | | | |
|------------------------------------|--------------|-------------------|----------------|--|--|
| Description | Manufacturer | Model/Part Number | Serial Number | | |
| Laptop | HP | EliteBook 8570p | 5CB3061RPX | | |
| AC Adapter | HP | PPP12D-S | WCNXF0AAR3XCBA | | |

| Cables | | | | | |
|------------|--------|------------|---------|--------------|--------------|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
| AC Power | No | 1.8m | No | AC Mains | AC Adapter |
| DC Power | No | 1.5m | No | AC Adapter | Laptop |
| USB | Yes | 1.2m | No | Laptop | RFID Reader |

MODIFICATIONS



Equipment Modifications

| Item | Date | Test | Modification | Note | Disposition of EUT |
|------|------------|--|--------------------------------------|---|---|
| 1 | 2020-11-12 | Frequency Stability | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 2 | 2020-11-12 | Field Strength of Spurious Emissions Greater than 30 MHz | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 3 | 2020-11-13 | Powerline Conducted Emissions | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 4 | 2020-12-04 | Field Strength of Fundamental | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Element following the test. |
| 5 | 2020-12-04 | Field Strength of Spurious Emissions Less than 30 MHz | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed. |

POWER SETTINGS AND ANTENNAS



The power settings, antenna gain value(s) and cable loss (if applicable) used for the testing contained in this report were provided by the customer and will affect the validity of the results. Element assumes no responsibility for the accuracy of this information.

ANTENNA GAIN (dBi)

| Type | Provided by: | Frequency Range (MHz) | Gain (dBi) |
|------|--------------|-----------------------|------------|
| Loop | Manufacturer | 13.56 MHz | N/A |

No adjustable power settings were provided. The EUT was tested using power settings pre-defined by the manufacturer.

POWERLINE CONDUCTED EMISSIONS



TEST DESCRIPTION

The EUT will be powered either directly or indirectly from the AC power line. Therefore, conducted emissions measurements were made on the AC input of the EUT, or on the AC input of the device used to power the EUT.

The EUT was transmitting at its maximum data rate. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.10.

In the event that the operating frequency of 13.56 MHz is causing the product to fail the FCC 15.207 limits, the following guidance can be used:

FCC KDB 174176 D01 AC Conducted FAQ v01r01, June 3, 2015 Section Q5:

For a device with a permanent or detachable antenna operating at or below 30 MHz, the FCC will accept measurements performed with a suitable dummy load in lieu of the antenna under the following conditions:

(1) perform the AC power-line conducted tests with the antenna connected to determine compliance with Section 15.207 limits outside the transmitter's fundamental emission band;

(2) retest with a dummy load in lieu of the antenna to determine compliance with Section 15.207 limits within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network which simulates the antenna in the fundamental frequency band.

All measurements must be performed as specified in clause 6.2 of ANSI C63.10-2013.

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|----------------------------------|-------------------|------------------|------|------------|------------|
| Receiver | Rohde & Schwarz | ESCI | ARH | 2020-05-13 | 2021-05-13 |
| Cable - Conducted Cable Assembly | Northwest EMC | EVG, HHD, RKT | EVGA | 2020-01-06 | 2021-01-06 |
| LISN | Solar Electronics | 9252-50-R-24-BNC | LIN | 2019-11-20 | 2020-11-20 |

MEASUREMENT UNCERTAINTY

| Description | | |
|--------------|--------|---------|
| Expanded k=2 | 2.6 dB | -2.6 dB |

CONFIGURATIONS INVESTIGATED

GSLS0015-1

MODES INVESTIGATED

RFID Continuous TX, 13.56 MHz

POWERLINE CONDUCTED EMISSIONS



| | | | |
|-------------------|-------------------------|--------------------|------------|
| EUT: | RFID IntelliPad REV B | Work Order: | GSLS0015 |
| Serial Number: | CT2909 | Date: | 2020-11-13 |
| Customer: | GSL Solutions, INC. | Temperature: | 23.2°C |
| Attendees: | Tyler Seitz, Joe Intile | Relative Humidity: | 36.7% |
| Customer Project: | None | Bar. Pressure: | 1014 mb |
| Tested By: | Jeff Alcocke | Job Site: | EV07 |
| Power: | USB via 110VAC/60HZ | Configuration: | GSLS0015-1 |

TEST SPECIFICATIONS

| | |
|-----------------|------------------|
| Specification: | Method: |
| FCC 15.207:2020 | ANSI C63.10:2013 |

TEST PARAMETERS

| | | | | | |
|--------|---|-------|-----------|-----------------------------|---|
| Run #: | 4 | Line: | High Line | Add. Ext. Attenuation (dB): | 0 |
|--------|---|-------|-----------|-----------------------------|---|

COMMENTS

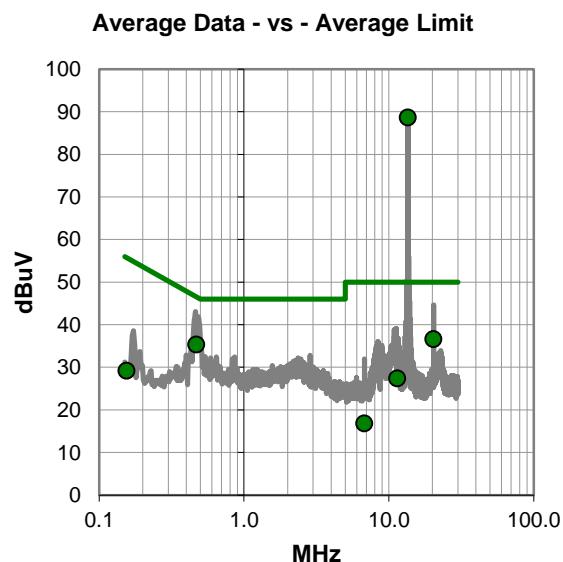
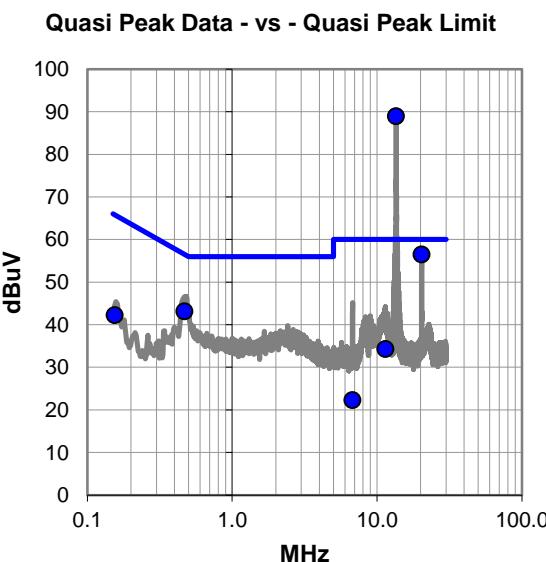
None

EUT OPERATING MODES

RFID Continuous TX, 13.56 MHz

DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS



RESULTS - Run #4

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.560 | 68.5 | 20.4 | 88.9 | 60.0 | 28.9 |
| 20.340 | 35.8 | 20.7 | 56.5 | 60.0 | -3.5 |
| 0.470 | 23.2 | 19.9 | 43.1 | 56.5 | -13.4 |
| 0.154 | 22.2 | 20.0 | 42.2 | 65.8 | -23.6 |
| 11.416 | 14.0 | 20.3 | 34.3 | 60.0 | -25.7 |
| 6.770 | 2.2 | 20.1 | 22.3 | 60.0 | -37.7 |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.560 | 68.2 | 20.4 | 88.6 | 50.0 | 38.6 |
| 0.470 | 15.4 | 19.9 | 35.3 | 46.5 | -11.2 |
| 20.340 | 15.9 | 20.7 | 36.6 | 50.0 | -13.4 |
| 11.416 | 7.1 | 20.3 | 27.4 | 50.0 | -22.6 |
| 0.154 | 9.2 | 20.0 | 29.2 | 55.8 | -26.6 |
| 6.770 | -3.3 | 20.1 | 16.8 | 50.0 | -33.2 |

CONCLUSION

Fail



POWERLINE CONDUCTED EMISSIONS



| | | | |
|-------------------|-------------------------|--------------------|------------|
| EUT: | RFID IntelliPad REV B | Work Order: | GSLS0015 |
| Serial Number: | CT2909 | Date: | 2020-11-13 |
| Customer: | GSL Solutions, INC. | Temperature: | 23.2°C |
| Attendees: | Tyler Seitz, Joe Intile | Relative Humidity: | 36.7% |
| Customer Project: | None | Bar. Pressure: | 1014 mb |
| Tested By: | Jeff Alcocke | Job Site: | EV07 |
| Power: | USB via 110VAC/60HZ | Configuration: | GSLS0015-1 |

TEST SPECIFICATIONS

| | |
|-----------------|------------------|
| Specification: | Method: |
| FCC 15.207:2020 | ANSI C63.10:2013 |

TEST PARAMETERS

| | | | | | |
|--------|---|-------|---------|-----------------------------|---|
| Run #: | 5 | Line: | Neutral | Add. Ext. Attenuation (dB): | 0 |
|--------|---|-------|---------|-----------------------------|---|

COMMENTS

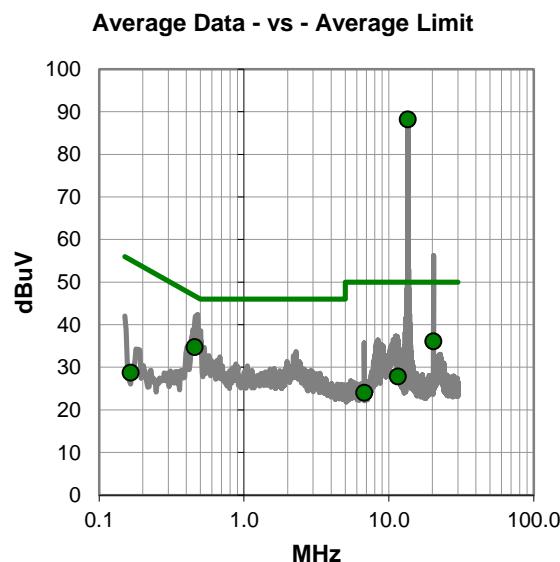
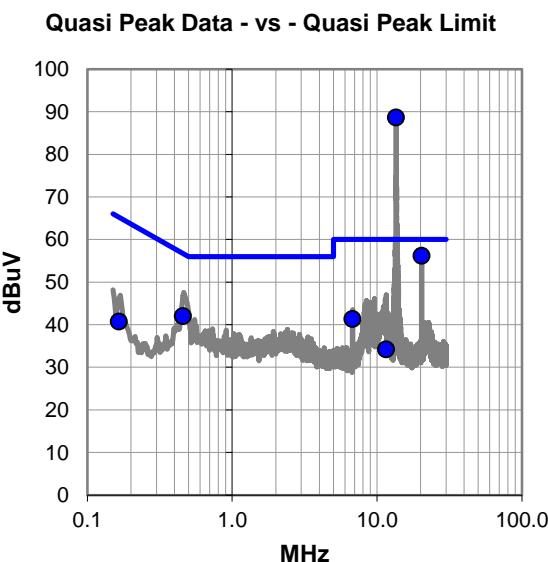
None

EUT OPERATING MODES

RFID Continuous TX, 13.56 MHz

DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS



RESULTS - Run #5

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.559 | 68.2 | 20.4 | 88.6 | 60.0 | 28.6 |
| 20.339 | 35.5 | 20.7 | 56.2 | 60.0 | -3.8 |
| 0.457 | 22.1 | 19.9 | 42.0 | 56.8 | -14.8 |
| 6.780 | 21.2 | 20.1 | 41.3 | 60.0 | -18.7 |
| 0.165 | 20.8 | 19.9 | 40.7 | 65.2 | -24.5 |
| 11.568 | 13.9 | 20.3 | 34.2 | 60.0 | -25.8 |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.559 | 67.8 | 20.4 | 88.2 | 50.0 | 38.2 |
| 0.457 | 14.8 | 19.9 | 34.7 | 46.8 | -12.1 |
| 20.339 | 15.4 | 20.7 | 36.1 | 50.0 | -13.9 |
| 11.568 | 7.5 | 20.3 | 27.8 | 50.0 | -22.2 |
| 6.780 | 3.9 | 20.1 | 24.0 | 50.0 | -26.0 |
| 0.165 | 8.8 | 19.9 | 28.7 | 55.2 | -26.5 |

CONCLUSION

Fail



Tested By

POWERLINE CONDUCTED EMISSIONS



| | | | |
|-------------------|-------------------------|--------------------|------------|
| EUT: | RFID IntelliPad REV B | Work Order: | GSLS0015 |
| Serial Number: | CT2909 | Date: | 2020-11-13 |
| Customer: | GSL Solutions, INC. | Temperature: | 23.2°C |
| Attendees: | Tyler Seitz, Joe Intile | Relative Humidity: | 36.7% |
| Customer Project: | None | Bar. Pressure: | 1014 mb |
| Tested By: | Jeff Alcocke | Job Site: | EV07 |
| Power: | USB via 110VAC/60HZ | Configuration: | GSLS0015-1 |

TEST SPECIFICATIONS

| | |
|-----------------|------------------|
| Specification: | Method: |
| FCC 15.207:2020 | ANSI C63.10:2013 |

TEST PARAMETERS

| | | | | | |
|--------|---|-------|---------|-----------------------------|---|
| Run #: | 7 | Line: | Neutral | Add. Ext. Attenuation (dB): | 0 |
|--------|---|-------|---------|-----------------------------|---|

COMMENTS

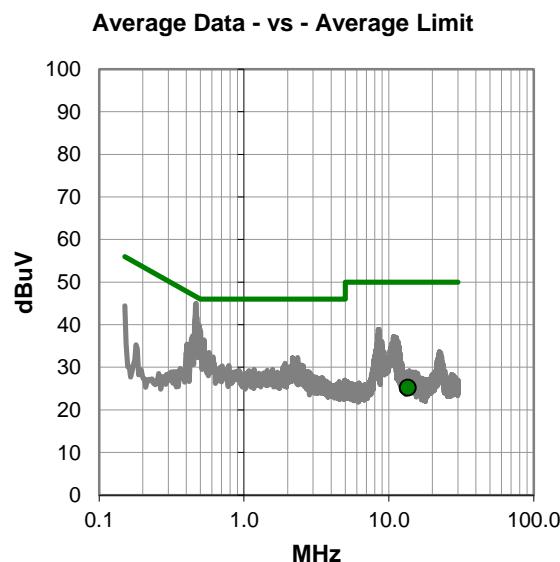
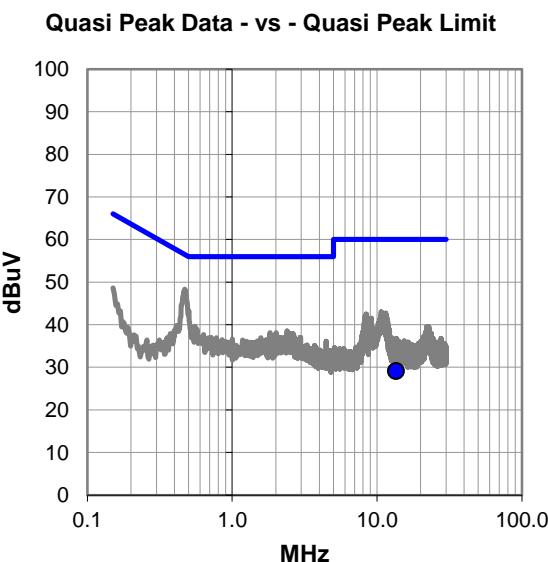
Antenna trace cut on PCB.

EUT OPERATING MODES

RFID Continuous TX, 13.56 MHz.

DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS



RESULTS - Run #7

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.559 | 8.7 | 20.4 | 29.1 | 60.0 | -30.9 |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.559 | 4.8 | 20.4 | 25.2 | 50.0 | -24.8 |

CONCLUSION

Pass



Tested By

POWERLINE CONDUCTED EMISSIONS



| | | | |
|-------------------|-------------------------|--------------------|------------|
| EUT: | RFID IntelliPad REV B | Work Order: | GSLS0015 |
| Serial Number: | CT2909 | Date: | 2020-11-13 |
| Customer: | GSL Solutions, INC. | Temperature: | 23.2°C |
| Attendees: | Tyler Seitz, Joe Intile | Relative Humidity: | 36.7% |
| Customer Project: | None | Bar. Pressure: | 1014 mb |
| Tested By: | Jeff Alcocke | Job Site: | EV07 |
| Power: | USB via 110VAC/60HZ | Configuration: | GSLS0015-1 |

TEST SPECIFICATIONS

| | |
|-----------------|------------------|
| Specification: | Method: |
| FCC 15.207:2020 | ANSI C63.10:2013 |

TEST PARAMETERS

| | | | | | |
|--------|---|-------|-----------|-----------------------------|---|
| Run #: | 8 | Line: | High Line | Add. Ext. Attenuation (dB): | 0 |
|--------|---|-------|-----------|-----------------------------|---|

COMMENTS

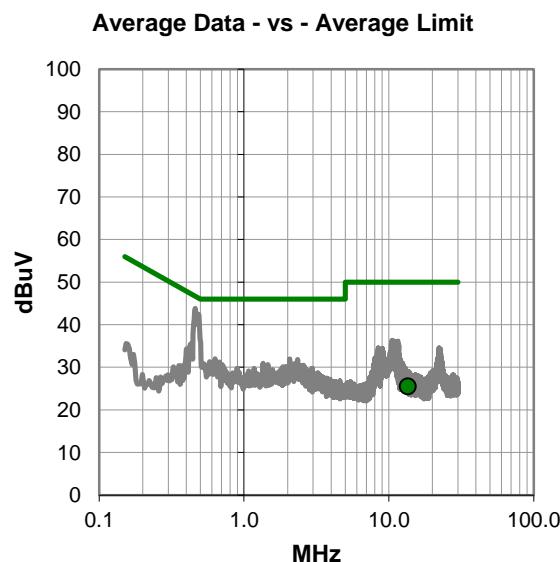
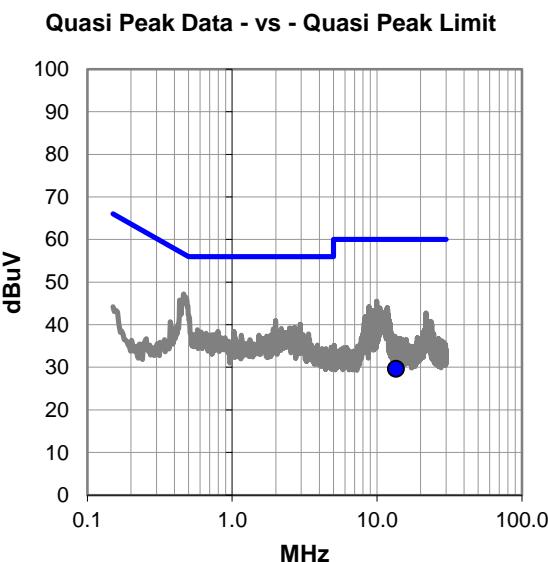
Antenna trace cut on PCB.

EUT OPERATING MODES

RFID Continuous TX, 13.56 MHz.

DEVIATIONS FROM TEST STANDARD

None



POWERLINE CONDUCTED EMISSIONS



RESULTS - Run #8

Quasi Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.561 | 9.2 | 20.4 | 29.6 | 60.0 | -30.4 |

Average Data - vs - Average Limit

| Freq (MHz) | Amp. (dBuV) | Factor (dB) | Adjusted (dBuV) | Spec. Limit (dBuV) | Margin (dB) |
|------------|-------------|-------------|-----------------|--------------------|-------------|
| 13.561 | 5.1 | 20.4 | 25.5 | 50.0 | -24.5 |

CONCLUSION

Pass



Tested By

FIELD STRENGTH OF FUNDAMENTAL



PSA-ESCI 2020.06.24.2

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

RFID Continuous TX, 13.56 MHz.

POWER SETTINGS INVESTIGATED

USB via 110VAC/60HZ

CONFIGURATIONS INVESTIGATED

GSLS0015 - 1

FREQUENCY RANGE INVESTIGATED

| | | | |
|-----------------|--------|----------------|--------|
| Start Frequency | 12 MHz | Stop Frequency | 15 MHz |
|-----------------|--------|----------------|--------|

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|------------------------------|--------------|------------------------|-----|------------|----------|
| Cable | None | 3m Test Distance Cable | EVM | 2020-02-28 | 12 mo |
| Antenna - Loop | EMCO | 6502 | AOA | 2020-07-06 | 24 mo |
| Analyzer - Spectrum Analyzer | Agilent | E4440A | AFA | 2020-02-28 | 12 mo |

MEASUREMENT BANDWIDTHS

| Frequency Range (MHz) | Peak Data (kHz) | Quasi-Peak Data (kHz) | Average Data (kHz) |
|-----------------------|-----------------|-----------------------|--------------------|
| 0.01 - 0.15 | 1.0 | 0.2 | 0.2 |
| 0.15 - 30.0 | 10.0 | 9.0 | 9.0 |
| 30.0 - 1000 | 100.0 | 120.0 | 120.0 |
| Above 1000 | 1000.0 | N/A | 1000.0 |

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was continuously transmitting while set to the channel specified.

The fundamental carrier of the EUT was maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A calibrated active loop antenna was used for this test in order to provide sufficient measurement sensitivity. The reference point of the loop antenna was maintained at 1m above the ground plane during the testing.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector

PK = Peak Detector

AV = RMS Detector

As outlined in 15.209(e), 15.31(f)(2), and RSS-GEN, 6.5, measurements may be performed at a distance closer than what is specified with the limit. The limit at the specified distance is shown on the data sheet. Measurements are made at a closer distance and the data is adjusted using a distance correction factor of 40dB/decade for comparison to the limit.

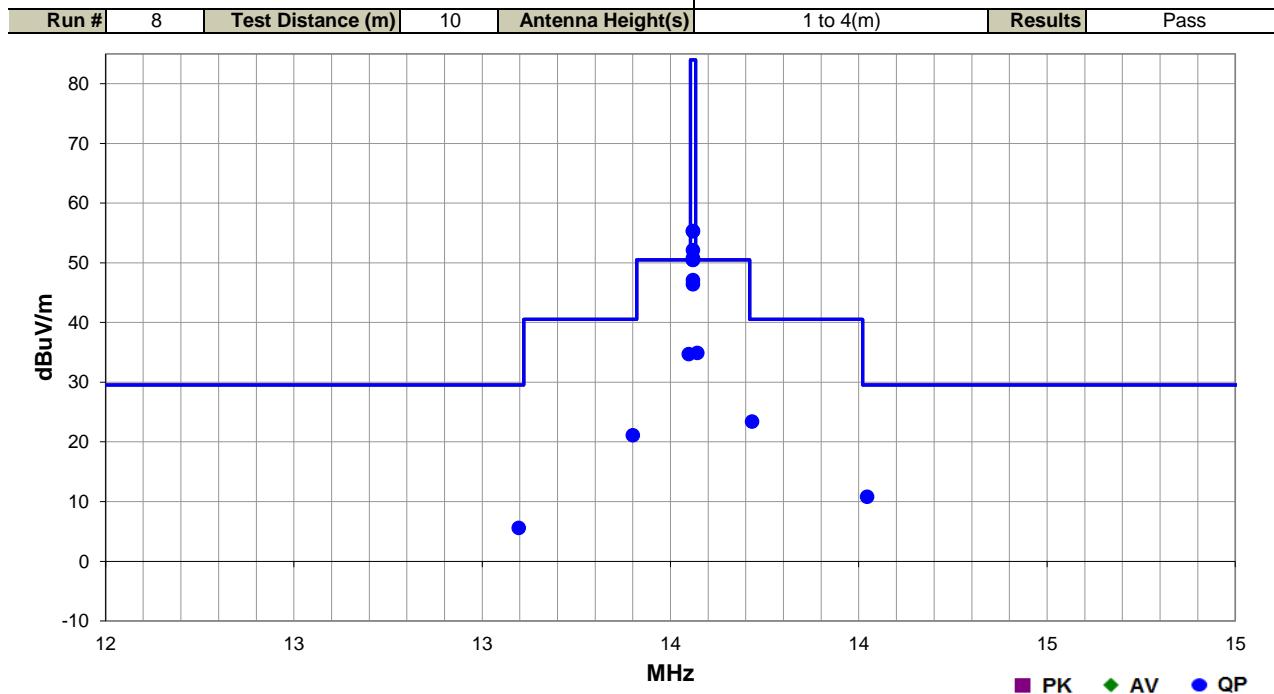
FIELD STRENGTH OF FUNDAMENTAL



EmiR5 2020.06.24.4

PSA-ESCI 2020.06.24.2

| | | | | |
|---------------------|--------------------------------|-------------------|------------|--------------------------|
| Work Order: | GSLS0015 | Date: | 2020-12-04 | Signature: |
| Project: | None | Temperature: | 22.1 °C | |
| Job Site: | EV11 | Humidity: | 29.6% RH | |
| Serial Number: | CT2909 | Barometric Pres.: | 1035 mbar | Tested by: Cole Ghizzone |
| EUT: | RFID IntelliPad REV B | | | |
| Configuration: | 1 | | | |
| Customer: | GSL Solutions, INC. | | | |
| Attendees: | Tyler Seitz, and Joe Intile | | | |
| EUT Power: | USB via 110VAC/60HZ | | | |
| Operating Mode: | RFID Continuous TX, 13.56 MHz. | | | |
| Deviations: | None | | | |
| Comments: | Antenna Parallel floor EUT | | | |
| Test Specifications | | | | Test Method |
| FCC 15.225:2020 | | | | ANSI C63.10:2013 |



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|------------|------------------|-------------|-------------------------|-------------------|------------------------|---------------------------|--------------------------|----------|--------------------------|-------------------|----------------------|------------------------|----------------|
| 13.571 | 41.9 | 12.1 | 1.0 | 111.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | 34.9 | 50.5 | -15.6 | EUT Vertical |
| 13.549 | 41.7 | 12.1 | 1.0 | 111.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | 34.7 | 50.5 | -15.8 | EUT Vertical |
| 13.716 | 30.4 | 12.1 | 1.0 | 111.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | 23.4 | 40.5 | -17.1 | EUT Vertical |
| 14.022 | 17.8 | 12.1 | 1.0 | 111.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | 10.8 | 29.5 | -18.7 | EUT Vertical |
| 13.400 | 28.0 | 12.2 | 1.0 | 111.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | 21.1 | 40.5 | -19.4 | EUT Vertical |
| 13.097 | 12.5 | 12.2 | 1.0 | 111.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | 5.6 | 29.5 | -23.9 | EUT Vertical |
| 13.560 | 62.3 | 12.1 | 1.0 | 300.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | 55.3 | 84.0 | -28.7 | EUT Vertical |
| 13.560 | 62.3 | 12.1 | 1.0 | 287.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | 55.3 | 84.0 | -28.7 | EUT On Side |
| 13.560 | 59.1 | 12.1 | 1.0 | 185.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | 52.1 | 84.0 | -31.9 | EUT Horizontal |
| 13.560 | 57.8 | 12.1 | 1.0 | 254.0 | 10.0 | 0.0 | Para Floor | QP | -19.1 | 50.8 | 84.0 | -33.2 | EUT Vertical |
| 13.560 | 57.6 | 12.1 | 1.0 | 275.0 | 10.0 | 0.0 | Para Floor | QP | -19.1 | 50.6 | 84.0 | -33.4 | EUT On Side |
| 13.560 | 57.5 | 12.1 | 1.0 | 201.0 | 10.0 | 0.0 | Para EUT | QP | -19.1 | 50.5 | 84.0 | -33.5 | EUT On Side |
| 13.560 | 57.5 | 12.1 | 1.0 | 219.0 | 10.0 | 0.0 | Para EUT | QP | -19.1 | 50.5 | 84.0 | -33.5 | EUT Vertical |
| 13.560 | 54.1 | 12.1 | 1.0 | 224.0 | 10.0 | 0.0 | Para EUT | QP | -19.1 | 47.1 | 84.0 | -36.9 | EUT Horizontal |
| 13.560 | 53.4 | 12.1 | 1.0 | 208.0 | 10.0 | 0.0 | Para Floor | QP | -19.1 | 46.4 | 84.0 | -37.6 | EUT Horizontal |

FIELD STRENGTH OF SPURIOUS EMISSIONS LESS THAN 30 MHZ



PSA-ESCI 2020.06.24.2

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

RFID Continuous TX, 13.56 MHz.

POWER SETTINGS INVESTIGATED

USB via 110VAC/60HZ

CONFIGURATIONS INVESTIGATED

GSLS0015 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency | 9 kHz | Stop Frequency | 30 MHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|------------------------------|--------------|------------------------|-----|------------|----------|
| Cable | None | 3m Test Distance Cable | EVM | 2020-02-28 | 12 mo |
| Antenna - Loop | EMCO | 6502 | AOA | 2020-07-06 | 24 mo |
| Analyzer - Spectrum Analyzer | Agilent | E4440A | AFA | 2020-02-28 | 12 mo |

MEASUREMENT BANDWIDTHS

| Frequency Range (MHz) | Peak Data (kHz) | Quasi-Peak Data (kHz) | Average Data (kHz) |
|-----------------------|-----------------|-----------------------|--------------------|
| 0.01 - 0.15 | 1.0 | 0.2 | 0.2 |
| 0.15 - 30.0 | 10.0 | 9.0 | 9.0 |
| 30.0 - 1000 | 100.0 | 120.0 | 120.0 |
| Above 1000 | 1000.0 | N/A | 1000.0 |

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was continuously transmitting while set to the channel specified.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These "pre-scans" are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). An active loop antenna was used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

As outlined in 15.209(e), 15.31(f)(2), and RSS-GEN, 6.5, measurements may be performed at a distance closer than what is specified with the limit. The limit at the specified distance is shown on the data sheet. Measurements are made at a closer distance and the data is adjusted using a distance correction factor of 40dB/decade for comparison to the limit.

FIELD STRENGTH OF SPURIOUS EMISSIONS LESS THAN 30 MHZ



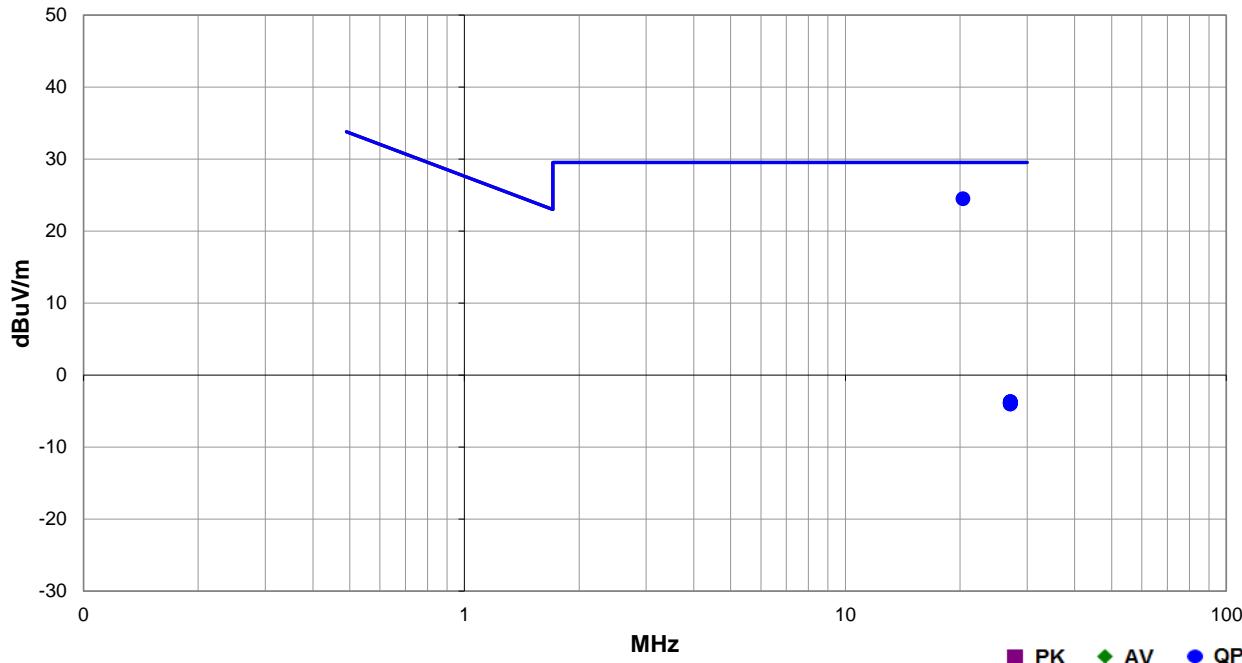
EmiR5 2020.06.24.4

PSA-ESCI 2020.06.24.2

| | | | | | |
|-----------------|--|-------------------|------------|--------------------|-----------------------|
| Work Order: | GSLS0015 | Date: | 2020-12-04 | EmiR5 2020.06.24.4 | PSA-ESCI 2020.06.24.2 |
| Project: | None | Temperature: | 22.1 °C | | |
| Job Site: | EV11 | Humidity: | 29.6% RH | | |
| Serial Number: | CT2909 | Barometric Pres.: | 1035 mbar | | |
| EUT: | RFID IntelliPad REV B | | | | |
| Configuration: | 1 | | | | |
| Customer: | GSL Solutions, INC. | | | | |
| Attendees: | Tyler Seitz, and Joe Intile | | | | |
| EUT Power: | USB via 110VAC/60HZ | | | | |
| Operating Mode: | RFID Continuous TX, 13.56 MHz. | | | | |
| Deviations: | None | | | | |
| Comments: | See data comments for EUT orientation. | | | | |

| Test Specifications | Test Method |
|---------------------|------------------|
| FCC 15.225:2020 | ANSI C63.10:2013 |

| Run # | 8 | Test Distance (m) | 10 | Antenna Height(s) | 1 to 4(m) | Results | Pass |
|-------|---|-------------------|----|-------------------|-----------|---------|------|
| | | | | | | | |



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|------------|------------------|-------------|-------------------------|-------------------|------------------------|---------------------------|--------------------------|----------|--------------------------|-------------------|----------------------|------------------------|----------------|
| 20.339 | 31.8 | 11.8 | 1.0 | 285.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | 24.5 | 29.5 | -5.0 | EUT Vertical |
| 27.099 | 5.0 | 10.4 | 1.0 | 323.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | -3.7 | 29.5 | -33.2 | EUT Vertical |
| 27.102 | 5.0 | 10.4 | 1.0 | 282.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | -3.7 | 29.5 | -33.2 | EUT On Side |
| 27.100 | 5.0 | 10.4 | 1.0 | 219.0 | 10.0 | 0.0 | Perp EUT | QP | -19.1 | -3.7 | 29.5 | -33.2 | EUT Horizontal |
| 27.095 | 4.8 | 10.4 | 1.0 | 221.0 | 10.0 | 0.0 | Para Floor | QP | -19.1 | -3.9 | 29.5 | -33.4 | EUT Vertical |
| 27.098 | 4.8 | 10.4 | 1.0 | 325.0 | 10.0 | 0.0 | Para EUT | QP | -19.1 | -3.9 | 29.5 | -33.4 | EUT Horizontal |
| 27.102 | 4.8 | 10.4 | 1.0 | 93.0 | 10.0 | 0.0 | Para EUT | QP | -19.1 | -3.9 | 29.5 | -33.4 | EUT On Side |
| 27.098 | 4.8 | 10.4 | 1.0 | 234.0 | 10.0 | 0.0 | Para EUT | QP | -19.1 | -3.9 | 29.5 | -33.4 | EUT Vertical |
| 27.099 | 4.7 | 10.4 | 1.0 | 341.0 | 10.0 | 0.0 | Para Floor | QP | -19.1 | -4.0 | 29.5 | -33.5 | EUT Horizontal |
| 27.098 | 4.7 | 10.4 | 1.0 | 299.0 | 10.0 | 0.0 | Para Floor | QP | -19.1 | -4.0 | 29.5 | -33.5 | EUT On Side |

FIELD STRENGTH OF SPURIOUS EMISSIONS GREATER THAN 30 MHZ



PSA-ESCI 2020.06.24.2

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

RFID Continuous TX, 13.56 MHz

POWER SETTINGS INVESTIGATED

USB via 110VAC/60HZ

CONFIGURATIONS INVESTIGATED

GSLS0015 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz Stop Frequency 1000 MHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|------------------------------|---------------|--------------------------|-----|------------|----------|
| Filter - Low Pass | Micro-Tronics | LPM50004 | LFD | 2020-02-15 | 12 mo |
| Cable | N/A | Double Ridge Horn Cables | EVB | 2019-11-18 | 12 mo |
| Amplifier - Pre-Amplifier | Miteq | AMF-3D-00100800-32-13P | PAG | 2019-11-18 | 12 mo |
| Antenna - Biconilog | EMCO | 3141 | AXG | 2019-07-23 | 24 mo |
| Analyzer - Spectrum Analyzer | Agilent | N9010A | AFI | 2019-12-13 | 12 mo |

MEASUREMENT BANDWIDTHS

| Frequency Range (MHz) | Peak Data (kHz) | Quasi-Peak Data (kHz) | Average Data (kHz) |
|-----------------------|-----------------|-----------------------|--------------------|
| 0.01 - 0.15 | 1.0 | 0.2 | 0.2 |
| 0.15 - 30.0 | 10.0 | 9.0 | 9.0 |
| 30.0 - 1000 | 100.0 | 120.0 | 120.0 |
| Above 1000 | 1000.0 | N/A | 1000.0 |

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting while set at the operating channel.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These "pre-scans" are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector
PK = Peak Detector
AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

FIELD STRENGTH OF SPURIOUS EMISSIONS GREATER THAN 30 MHZ



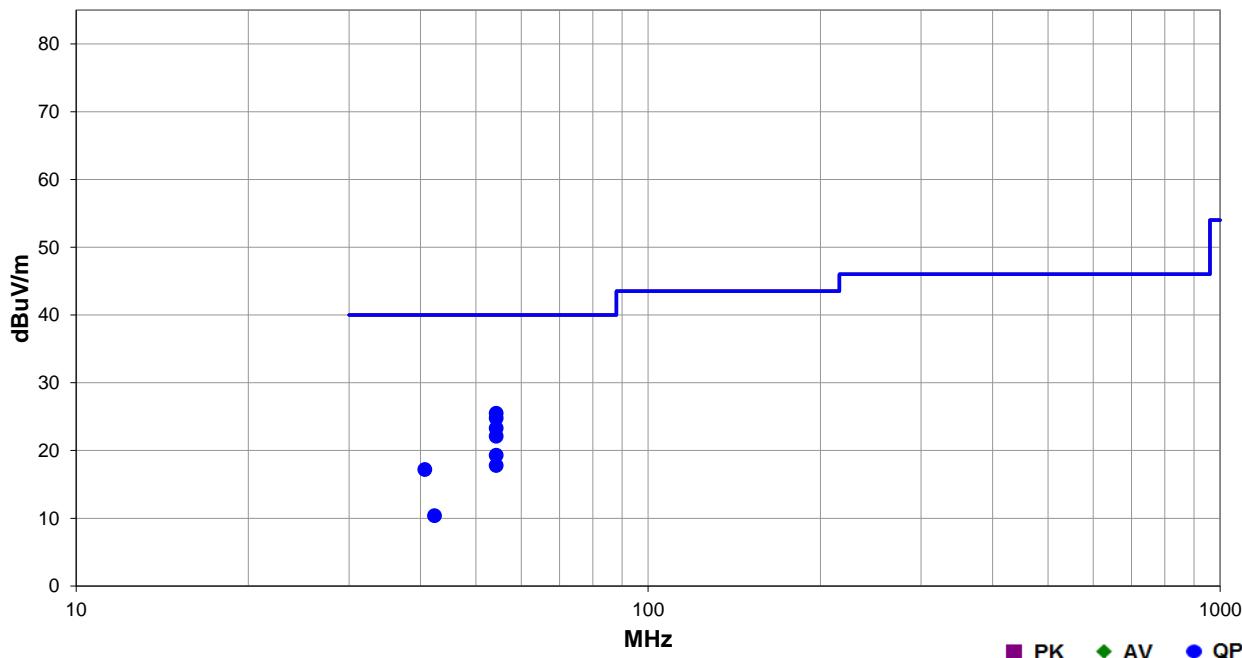
EmiR5 2020.06.24.4

PSA-ESCI 2020.06.24.2

Cole Ghizzone

| | | | | |
|---------------------|--|-------------------|------------|--------------------------|
| Work Order: | GSLS0015 | Date: | 2020-11-12 | |
| Project: | None | Temperature: | 21.6 °C | |
| Job Site: | EV01 | Humidity: | 35% RH | |
| Serial Number: | CT2909 | Barometric Pres.: | 1022 mbar | Tested by: Cole Ghizzone |
| EUT: | RFID IntelliPad REV B | | | |
| Configuration: | 1 | | | |
| Customer: | GSL Solutions, INC. | | | |
| Attendees: | Tyler Seitz, Joe Intile | | | |
| EUT Power: | USB via 110VAC/60HZ | | | |
| Operating Mode: | RFID Continuous TX, 13.56 MHz | | | |
| Deviations: | None | | | |
| Comments: | See data comments for EUT orientation. | | | |
| Test Specifications | | Test Method | | |
| FCC 15.225:2020 | | ANSI C63.10:2013 | | |

| Run # | 5 | Test Distance (m) | 3 | Antenna Height(s) | 1 to 4(m) | Results | Pass |
|-------|---|-------------------|---|-------------------|-----------|---------|------|
| | | | | | | | |



■ PK ■ AV ■ QP

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) | Comments |
|------------|------------------|-------------|-------------------------|-------------------|------------------------|---------------------------|--------------------------|----------|--------------------------|-------------------|----------------------|------------------------|----------------|
| 54.250 | 34.1 | -8.6 | 3.83 | 129.0 | 3.0 | 0.0 | Horz | QP | 0.0 | 25.5 | 40.0 | -14.5 | EUT Horizontal |
| 54.250 | 33.4 | -8.6 | 1.0 | 203.0 | 3.0 | 0.0 | Vert | QP | 0.0 | 24.8 | 40.0 | -15.2 | EUT Horizontal |
| 54.250 | 31.9 | -8.6 | 3.2 | 151.0 | 3.0 | 0.0 | Horz | QP | 0.0 | 23.3 | 40.0 | -16.7 | EUT On Side |
| 54.250 | 30.7 | -8.6 | 1.0 | 225.0 | 3.0 | 0.0 | Vert | QP | 0.0 | 22.1 | 40.0 | -17.9 | EUT On Side |
| 54.248 | 27.8 | -8.5 | 4.0 | 1.0 | 3.0 | 0.0 | Horz | QP | 0.0 | 19.3 | 40.0 | -20.7 | EUT Vertical |
| 54.248 | 26.3 | -8.5 | 1.0 | 223.0 | 3.0 | 0.0 | Vert | QP | 0.0 | 17.8 | 40.0 | -22.2 | EUT Vertical |
| 40.688 | 21.5 | -4.3 | 1.0 | 306.0 | 3.0 | 0.0 | Vert | QP | 0.0 | 17.2 | 40.0 | -22.8 | EUT Horizontal |
| 42.300 | 15.5 | -5.1 | 1.0 | 9.0 | 3.0 | 0.0 | Horz | QP | 0.0 | 10.4 | 40.0 | -29.6 | EUT Horizontal |

FREQUENCY STABILITY



XMit 2020.03.25.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|--------------------------------|---------------------------|-----------------------|-----|-----------|-----------|
| Probe - Near Field Set | EMCO | 7405 | IPD | NCR | NCR |
| Chamber - Temperature/Humidity | Cincinnati Sub Zero (CSZ) | ZPH-8-2-SCT/AC | TBI | NCR | NCR |
| Attenuator | Fairview Microwave | 18B5W-26 | RFZ | 24-Jul-20 | 24-Jul-21 |
| Cable | Micro-Coax | UFD150A-1-0720-200200 | EVH | 13-Mar-20 | 13-Mar-21 |
| Thermometer | Omegalette | HH311 | DTY | 5-Jan-18 | 5-Jan-21 |
| Meter - Multimeter | Tektronix | DMM912 | MMH | 15-Feb-19 | 15-Feb-22 |
| Analyzer - Spectrum Analyzer | Agilent | E4446A | AAT | 28-Oct-20 | 28-Oct-21 |

TEST DESCRIPTION

The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT.

Measurements were made on the single transmit frequency as called out on the data sheets. Testing was done while the EUT was continuously polling.

The primary supply voltage was varied from 85 % to 115% of the nominal voltage while at ambient temperature. Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range of -20 ° to +50° C and at 10°C intervals.

The requirement of a frequency tolerance of $\pm 0.01\%$ is equivalent to 100 ppm

The formula to check for compliance is:

$$\text{ppm} = (\text{Measured Frequency} / \text{Measured Nominal Frequency} - 1) * 1,000,000$$

FREQUENCY STABILITY



TbTx 2019.08.30.0 XMII 2020.03.25.0

| EUT: | RFID IntelliPad REV B | Work Order: | GSLS0015 | | | |
|-------------------------------|-------------------------------|----------------------|----------------------|-------------|-------------|---------|
| Serial Number: | None | Date: | 12-Nov-20 | | | |
| Customer: | GSL Solutions, INC. | Temperature: | 24.1 °C | | | |
| Attendees: | Joe Intile | Humidity: | 32.4% RH | | | |
| Project: | None | Barometric Pres.: | 1017 mbar | | | |
| Tested by: | Cole Ghizzone | Job Site: | EV06 | | | |
| TEST SPECIFICATIONS | Power: 5.0VDC | Test Method | | | | |
| FCC 15.225:2020 | | ANSI C63.10:2013 | | | | |
| COMMENTS | None | | | | | |
| DEVIATIONS FROM TEST STANDARD | | | | | | |
| None | | | | | | |
| Configuration # | 2 | Signature | | | | |
| | | | | | | |
| | | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| Extreme Temperature, 50°C | Nominal Voltage 5.0VDC | 13.559538 | 13.56 | 34.1 | 100 | Pass |
| Extreme Temperature, 40°C | Nominal Voltage 5.0VDC | 13.559571 | 13.56 | 31.6 | 100 | Pass |
| Extreme Temperature, 30°C | Nominal Voltage 5.0VDC | 13.559605 | 13.56 | 29.1 | 100 | Pass |
| Nominal Temperature, 20°C | Nominal Voltage 5.0VDC | 13.559671 | 13.56 | 24.3 | 100 | Pass |
| | Extreme Voltage +15%, 5.75VDC | 13.559638 | 13.56 | 26.7 | 100 | Pass |
| | Extreme Voltage -15%, 4.25VDC | 13.559621 | 13.56 | 28 | 100 | Pass |
| Extreme Temperature, 10°C | Nominal Voltage 5.0VDC | 13.559705 | 13.56 | 21.8 | 100 | Pass |
| Extreme Temperature, 0°C | Nominal Voltage 5.0VDC | 13.559738 | 13.56 | 19.3 | 100 | Pass |
| Extreme Temperature, -10°C | Nominal Voltage 5.0VDC | 13.559755 | 13.56 | 18.1 | 100 | Pass |
| Extreme Temperature, -20°C | Nominal Voltage 5.0VDC | 13.559755 | 13.56 | 18.1 | 100 | Pass |

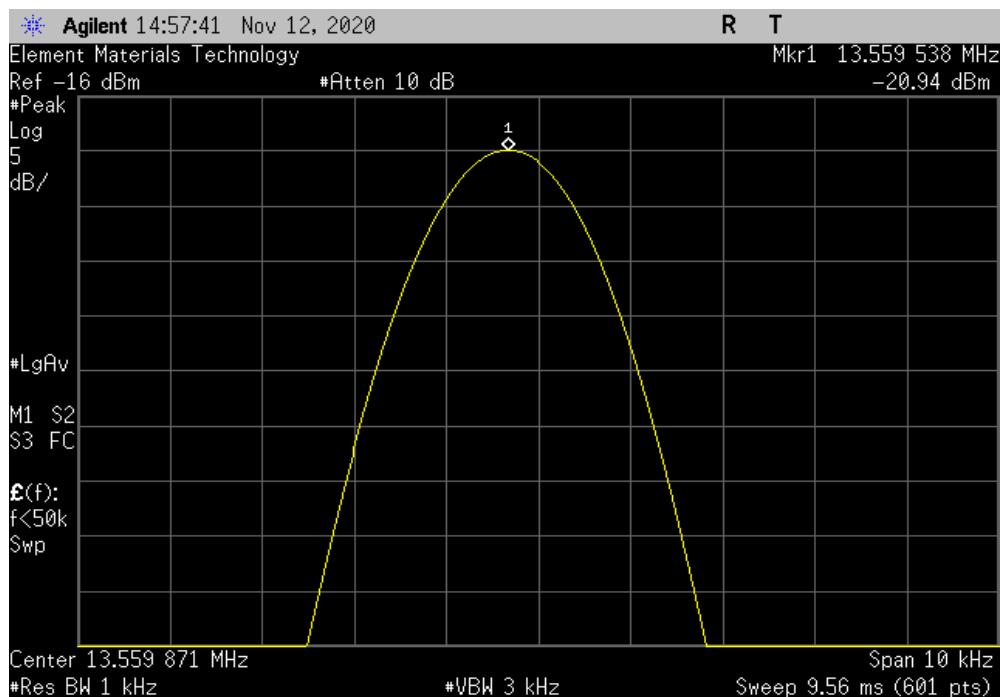
FREQUENCY STABILITY



TbITx 2019.08.30.0 XMit 2020.03.25.0

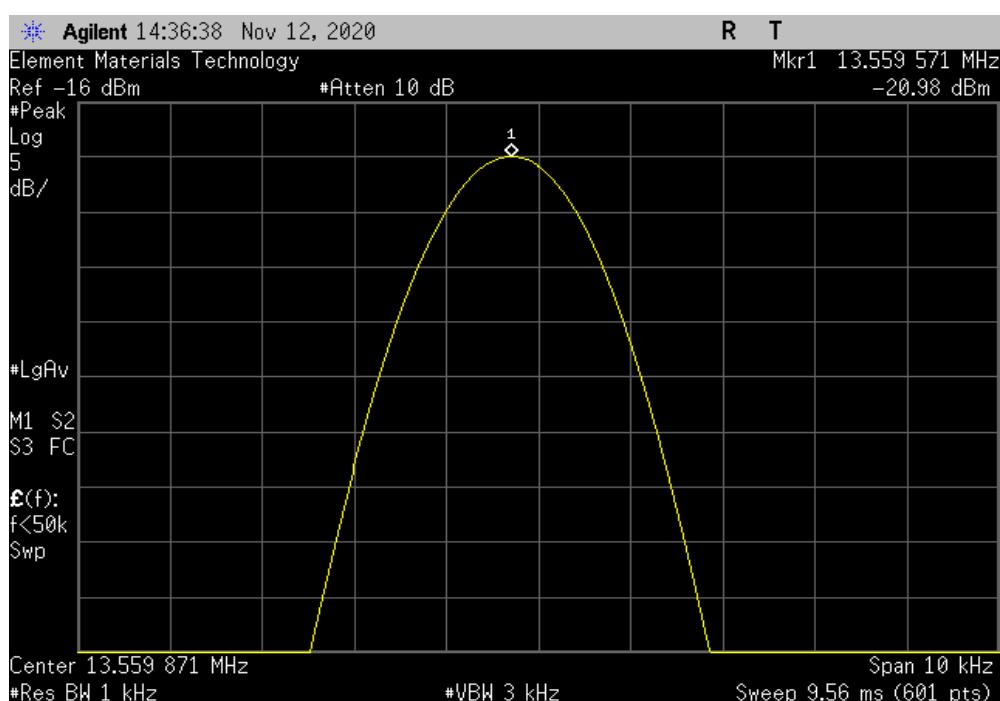
Extreme Temperature, 50°C, Nominal Voltage 5.0VDC

| Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|----------------------|----------------------|-------------|-------------|---------|
| 13.559538 | 13.56 | 34.1 | 100 | Pass |



Extreme Temperature, 40°C, Nominal Voltage 5.0VDC

| Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|----------------------|----------------------|-------------|-------------|---------|
| 13.559571 | 13.56 | 31.6 | 100 | Pass |



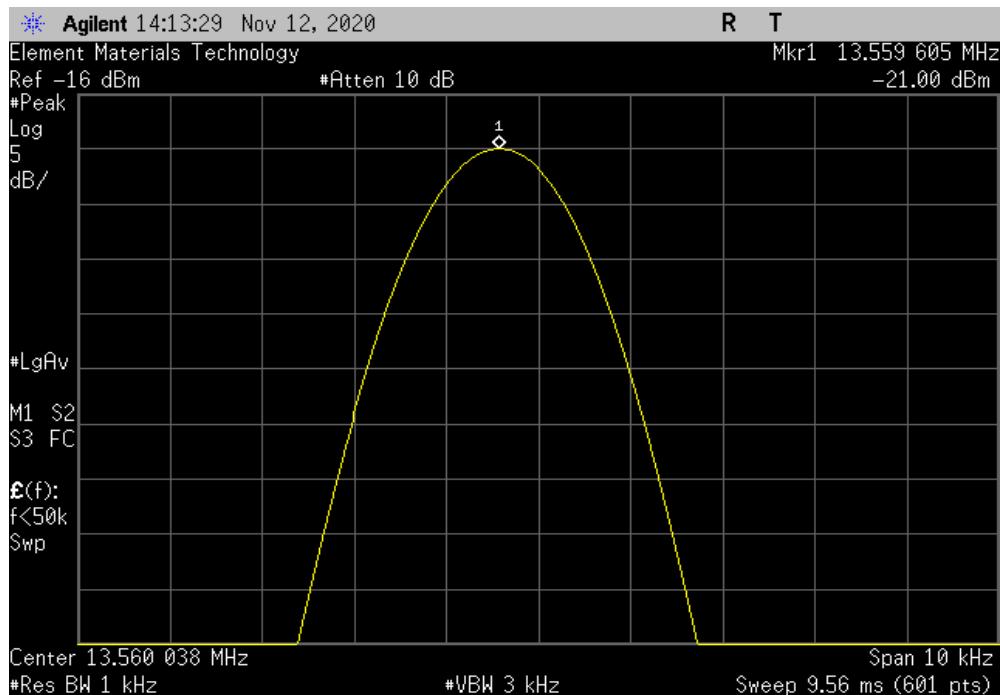
FREQUENCY STABILITY



TbtTx 2019.08.30.0 XMit 2020.03.25.0

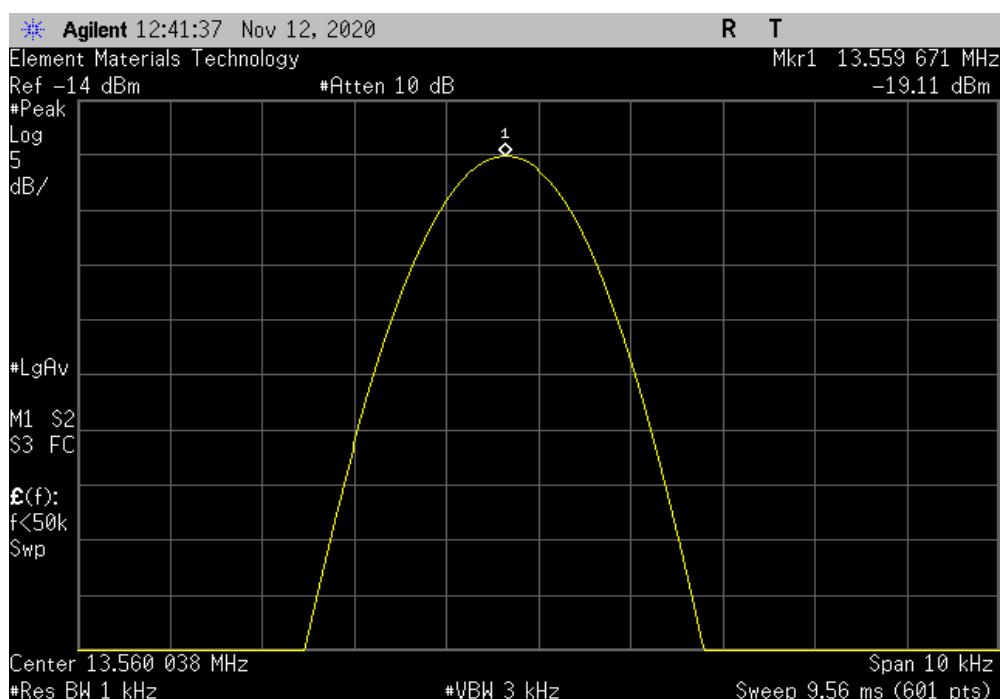
Extreme Temperature, 30°C, Nominal Voltage 5.0VDC

| | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|--|----------------------|----------------------|-------------|-------------|---------|
| | 13.559605 | 13.56 | 29.1 | 100 | Pass |



Nominal Temperature, 20°C, Nominal Voltage 5.0VDC

| | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|--|----------------------|----------------------|-------------|-------------|---------|
| | 13.559671 | 13.56 | 24.3 | 100 | Pass |



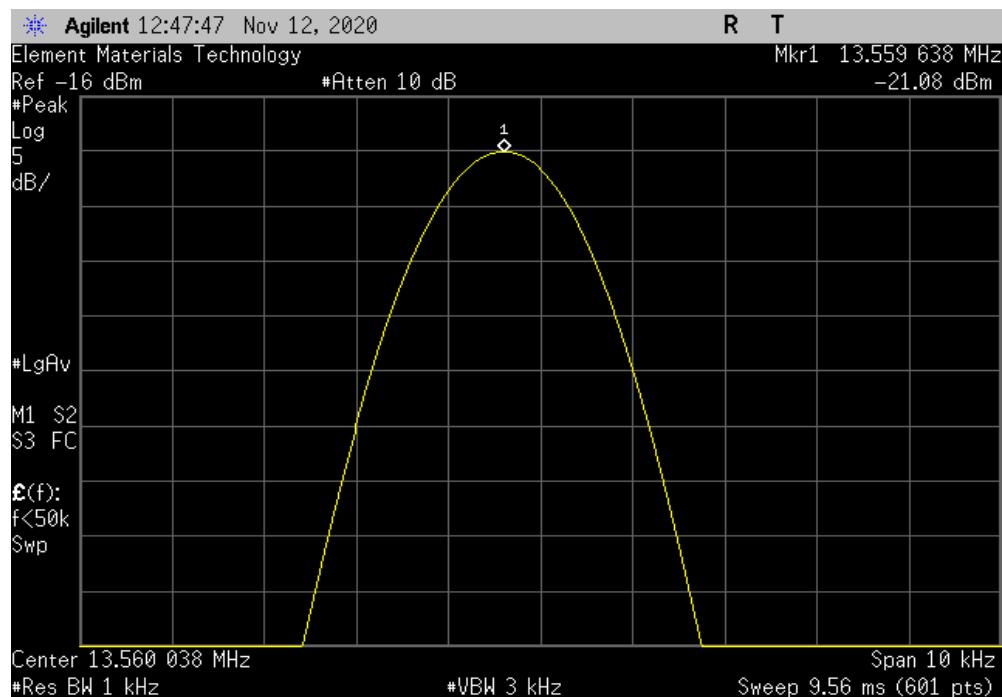
FREQUENCY STABILITY



TbITx 2019.08.30.0 XMit 2020.03.25.0

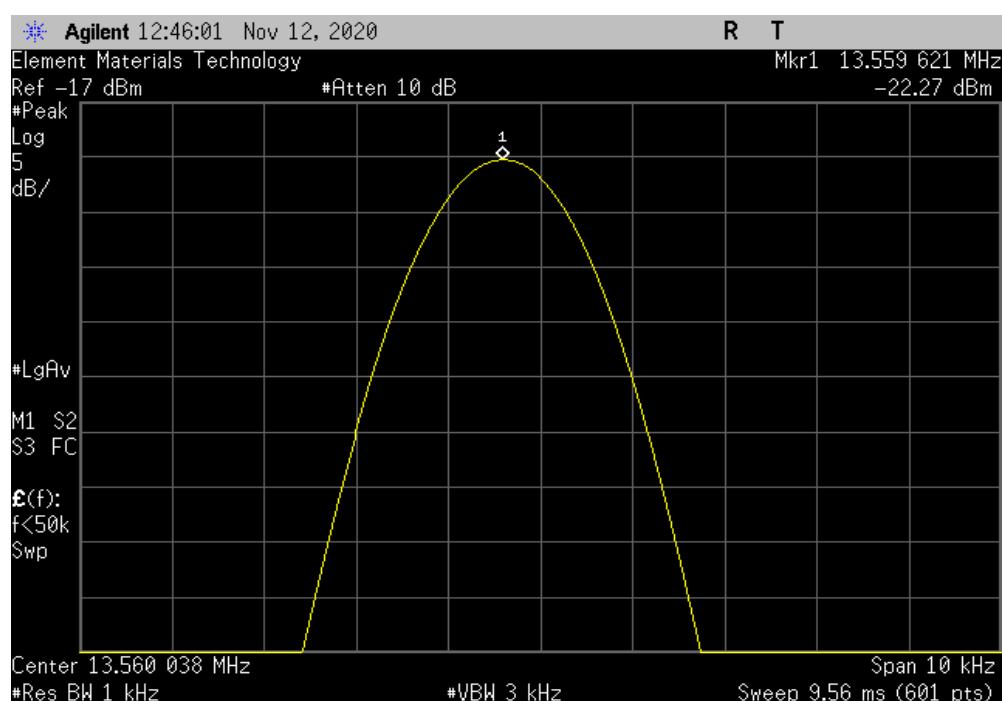
Nominal Temperature, 20°C, Extreme Voltage +15%, 5.75VDC

| Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|----------------------|----------------------|-------------|-------------|---------|
| 13.559638 | 13.56 | 26.7 | 100 | Pass |



Nominal Temperature, 20°C, Extreme Voltage -15%, 4.25VDC

| Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
|----------------------|----------------------|-------------|-------------|---------|
| 13.559621 | 13.56 | 28 | 100 | Pass |

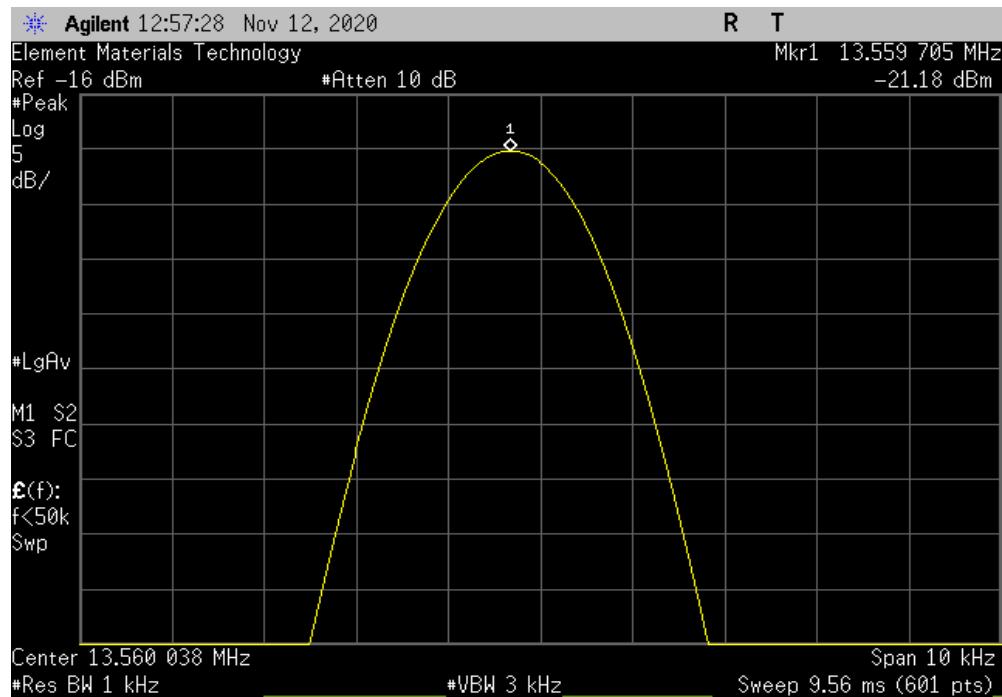


FREQUENCY STABILITY

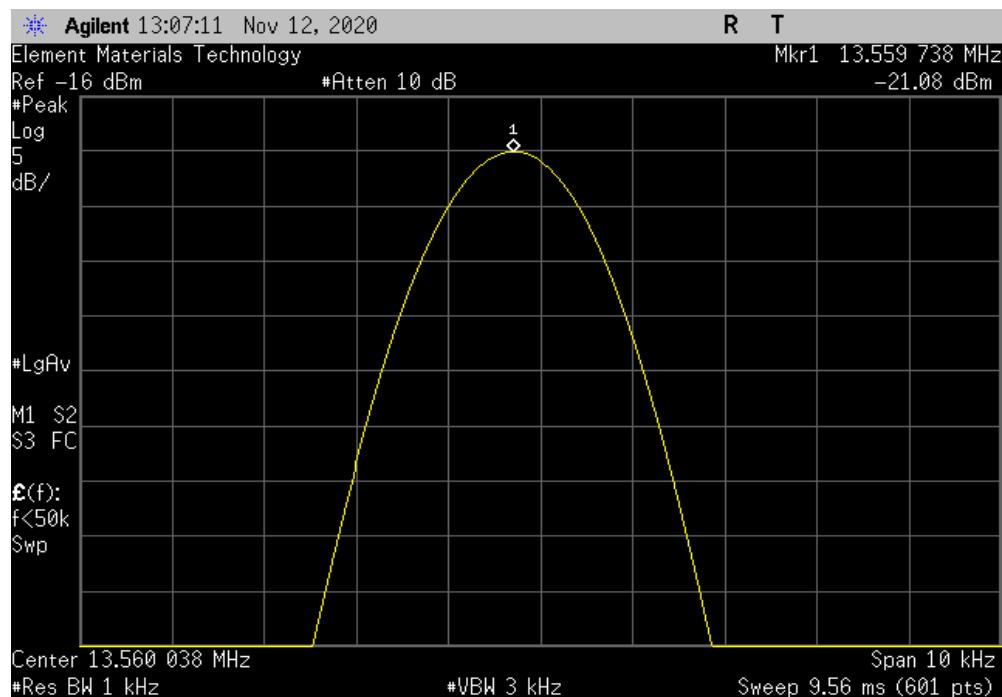


TbITx 2019.08.30.0 XMit 2020.03.25.0

| Extreme Temperature, 10°C, Nominal Voltage 5.0VDC | | | | | |
|---|----------------------|-------------|-------------|---------|--|
| Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results | |
| 13.559705 | 13.56 | 21.8 | 100 | Pass | |



| Extreme Temperature, 0°C, Nominal Voltage 5.0VDC | | | | | |
|--|----------------------|-------------|-------------|---------|--|
| Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results | |
| 13.559738 | 13.56 | 19.3 | 100 | Pass | |

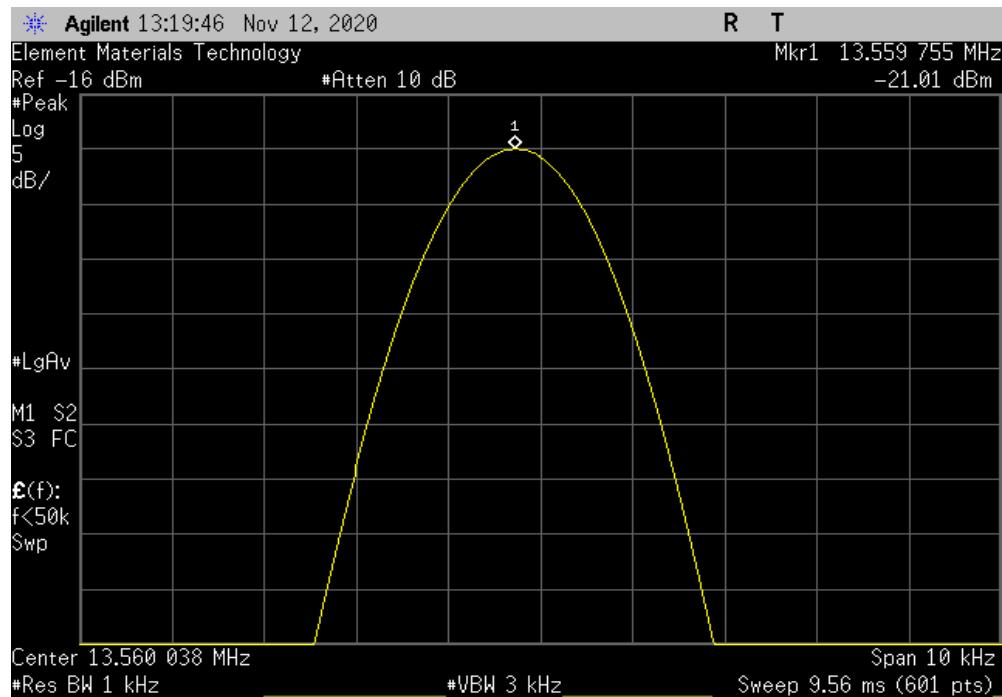


FREQUENCY STABILITY



TbITx 2019.08.30.0 XMit 2020.03.25.0

| Extreme Temperature, -10°C, Nominal Voltage 5.0VDC | | | | | |
|--|----------------------|----------------------|-------------|-------------|---------|
| | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | 13.559755 | 13.56 | 18.1 | 100 | Pass |



| Extreme Temperature, -20°C, Nominal Voltage 5.0VDC | | | | | |
|--|----------------------|----------------------|-------------|-------------|---------|
| | Measured Value (MHz) | Assigned Value (MHz) | Error (ppm) | Limit (ppm) | Results |
| | 13.559755 | 13.56 | 18.1 | 100 | Pass |

