

RF TEST REPORT

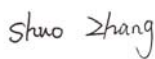
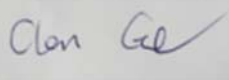


Report No.: FCC_IC RF_SL15090101-SLX-021_UNII

Supersede Report No.:

| | | |
|---|---|--|
| Applicant | : | Solectria Renewables LLC |
| Product Name | : | 802.11a/b/g/n module |
| Model No. | : | SX-PCEAN2 |
| Test Standard | : | 47 CFR 15.407 |
| Test Method | : | ANSI C63.10: 2013 RSS Gen Iss 4: Nov 2014 789033 D02 General UNII Test Procedures New Rules v01r03 |
| FCC ID | : | 2AKA9-SXPCEAN2 |
| IC ID | : | 22112-SXPCEAN2 |
| Dates of test | : | 10/27/2016 to 11/04/2016 |
| Issue Date | : | 11/04/2016 |
| Test Result | : | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail |
| Equipment complied with the specification [X] | | |
| Equipment did not comply with the specification [] | | |

This Test Report is Issued Under the Authority of:

| | |
|---|--|
|  |  |
| Shuo Zhang | Chen Ge |
| Test Engineer | Engineer Reviewer |

Issued By:
SIEMIC Laboratories
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Laboratory Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

| Country/Region | Accreditation Body | Scope |
|----------------|------------------------|-----------------------------------|
| USA | FCC, A2LA | EMC, RF/Wireless, Telecom |
| Canada | IC, A2LA, NIST | EMC, RF/Wireless, Telecom |
| Taiwan | BSMI, NCC, NIST | EMC, RF, Telecom, Safety |
| Hong Kong | OFTA, NIST | RF/Wireless, Telecom |
| Australia | NATA, NIST | EMC, RF, Telecom, Safety |
| Korea | KCC/RRA, NIST | EMI, EMS, RF, Telecom, Safety |
| Japan | VCCI, JATE, TELEC, RFT | EMI, RF/Wireless, Telecom |
| Mexico | NOM, COFETEL, Caniety | Safety, EMC, RF/Wireless, Telecom |
| Europe | A2LA, NIST | EMC, RF, Telecom, Safety |
| Israel | MOC, NIST | EMC, RF, Telecom, Safety |

Accreditations for Product Certifications

| Country | Accreditation Body | Scope |
|-----------|--------------------|-----------------------|
| USA | FCC TCB, NIST | EMC, RF, Telecom |
| Canada | IC FCB, NIST | EMC, RF, Telecom |
| Singapore | iDA, NIST | EMC, RF, Telecom |
| EU | NB | EMC & R&TTE Directive |
| Japan | MIC (RCB 208) | RF, Telecom |
| Hong Kong | OFTA (US002) | RF, Telecom |

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1 Report Revision History

| Report No. | Report Version | Description | Issue Date |
|-----------------------------------|----------------|-------------|------------|
| FCC_IC RF_SL15090101-SLX-021_UNII | None | Original | 11/07/2016 |
| | | | |
| | | | |
| | | | |
| | | | |

2 Executive Summary

The purpose of this test program was to demonstrate compliance of following product

Company: Sillex Technology, Inc.
Product: 802.11a/b/g/n module
Model: SX-PCEAN2

against the current Stipulated Standards. The specified model product stated above has demonstrated compliance with the Stipulated Standard listed on 1st page.

3 Customer information

| | | |
|----------------------|---|---|
| Applicant Name | : | Solectria Renewables LLC |
| Applicant Address | : | 360 Merrimack Street, Bldg 9 FL 2, Lawrence, MA 01843 |
| Manufacturer Name | : | Solectria Renewables LLC |
| Manufacturer Address | : | 360 Merrimack Street, Bldg 9 FL 2, Lawrence, MA 01843 |

4 Test site information

| | |
|----------------------|---|
| Lab performing tests | SIEMIC Laboratories |
| Lab Address | 775 Montague Expressway, Milpitas, CA 95035 |
| FCC Test Site No. | 881796 |
| IC Test Site No. | 4842D-2 |
| VCCI Test Site No. | A0133 |

5 Modification

| Index | Item | Description | Note |
|-------|------|-------------|------|
| - | - | - | - |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

6 EUT Information

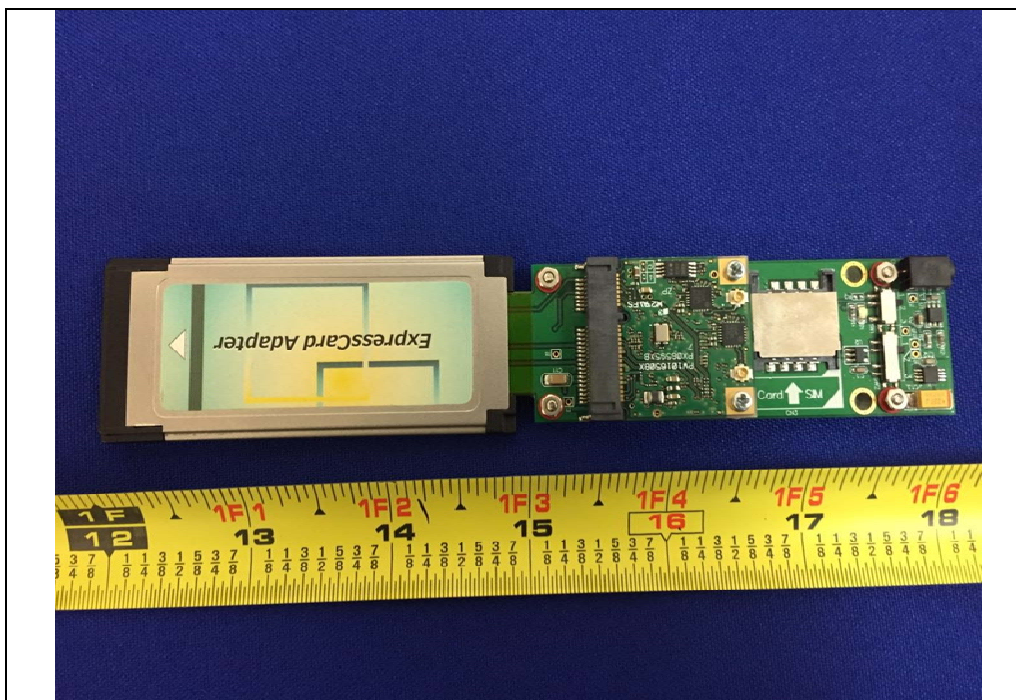
6.1 EUT Description

| | |
|---------------------------|--------------------------|
| Product Name | 802.11a/b/g/n module |
| Model No. | SX-PCEAN2 |
| Trade Name | Solectria Renewables LLC |
| Serial No. | N/A |
| Host Model No. | N/A |
| Input Power | 3.3VDC |
| Power Adapter Manu/Model | N/A |
| Power Adapter SN | N/A |
| Date of EUT received | 10/26/2016 |
| Equipment Class/ Category | UNII |
| Clock Frequencies | 40 MHz |
| Port/Connectors | PCIe |

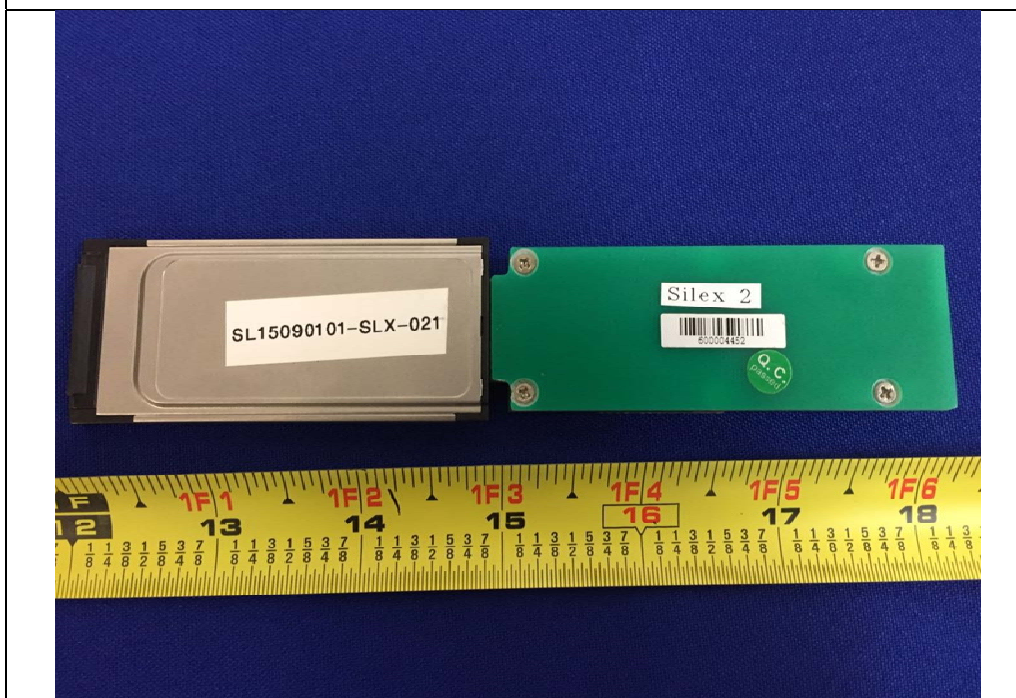
6.2 Radio Description

| Radio Type | 802.11a | 802.11n-20M | 802.11n-40M |
|------------------------|---|---------------------------------|---------------------------------|
| Operating Frequency | 5180-5240MHz 5745-5825MHz | 5180-5240MHz 5745-5825MHz | 5190-5230MHz 5755-5795MHz |
| Modulation | OFDM (BPSK, QPSK, 16QAM, 64QAM) | OFDM (BPSK, QPSK, 16QAM, 64QAM) | OFDM (BPSK, QPSK, 16QAM, 64QAM) |
| Channel Spacing | 20MHz | 20MHz | 40MHz |
| Number of Channels | 9 | 9 | 4 |
| Antenna Type | External Omni Antenna | | |
| Antenna Gain (Peak) | 5GHz: 8 dBi | | |
| Antenna Connector Type | U.FL | | |
| Note | 2.4GHz and 5GHz Radio transmit simultaneously | | |

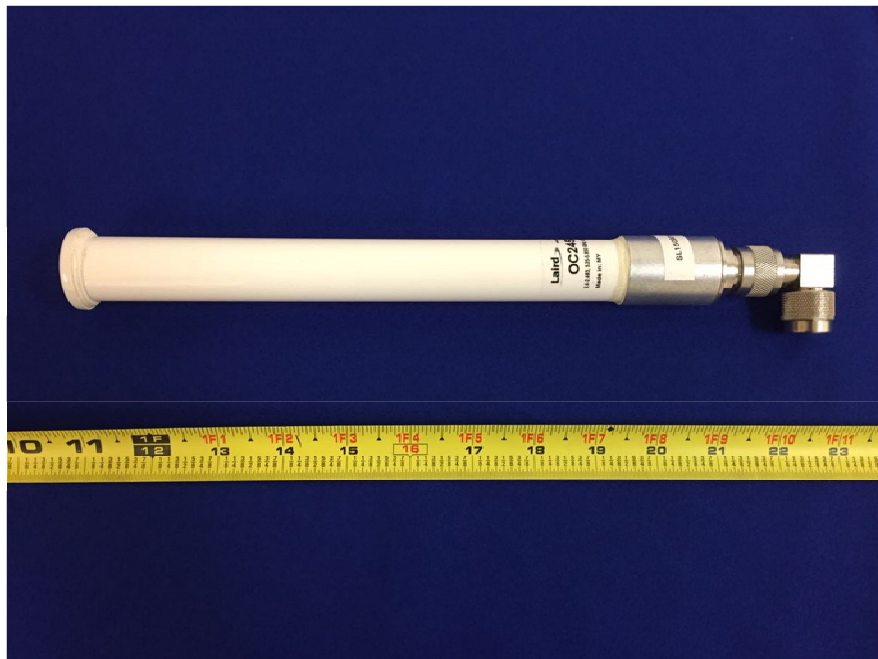
6.3 EUT Photos - Internal



Radio Module & Antenna – Top view



Radio Module & Antenna – Bottom view

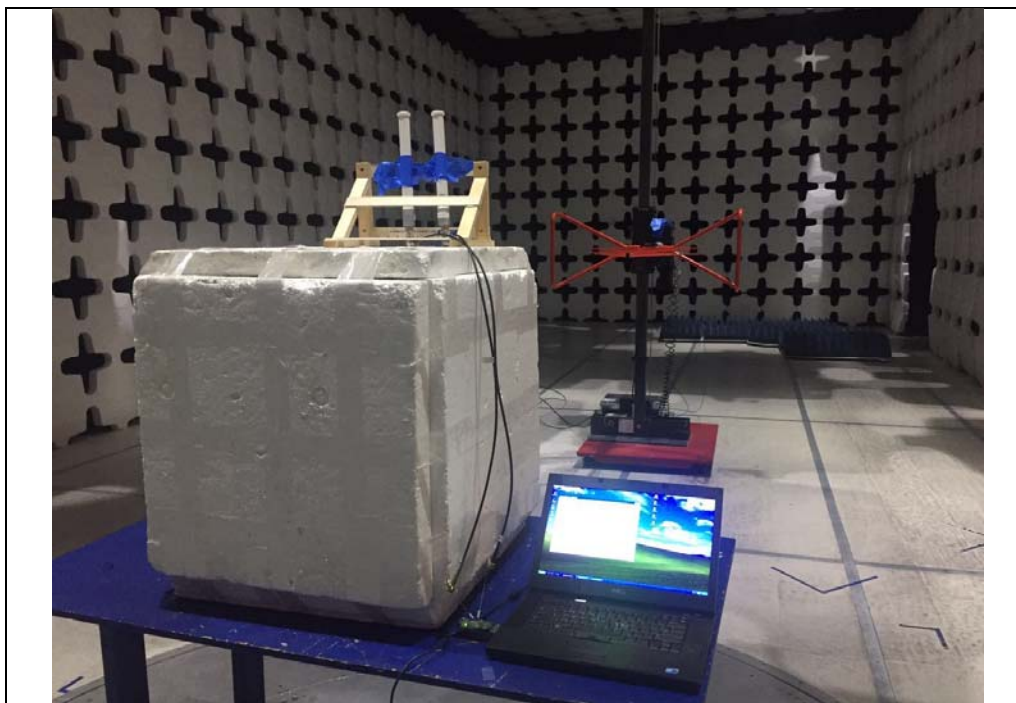


Laird OC24528 antenna

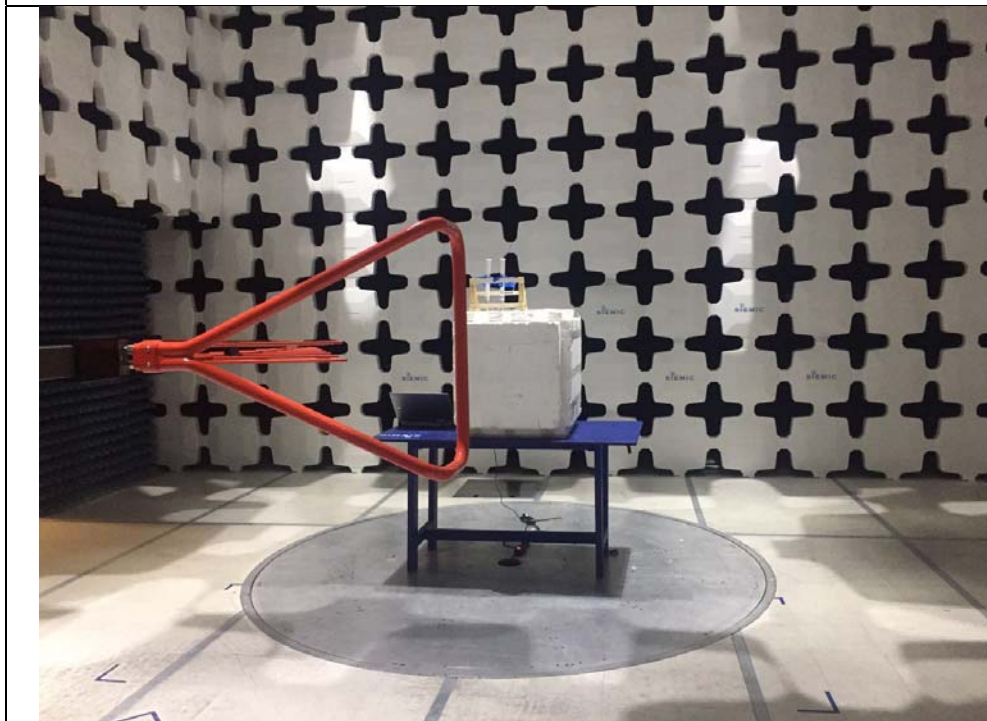


Trendnet TEW-AO57 antenna

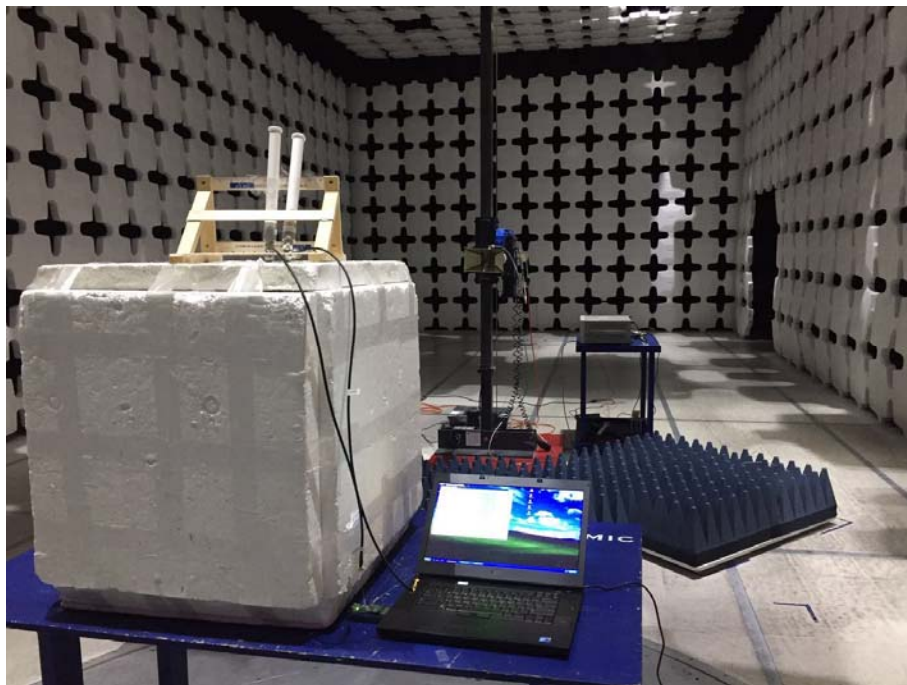
6.4 EUT Test Setup Photos



Radiated Emissions (<1GHz) – Front View



Radiated Emissions (<1GHz) – Rear View



Radiated Emissions (>1GHz) – Front View



Radiated Emissions (>1GHz) – Rear View

7 Supporting Equipment/Software and cabling Description

7.1 Supporting Equipment

| Item | Supporting Equipment Description | Model | Serial Number | Manufacturer | Note |
|------|----------------------------------|-------------|---------------|--------------|------|
| 1 | Laptop | DELL/E56510 | N/A | Dell | - |
| | | | | | |
| | | | | | |

7.2 Cabling Description

| Name | Connection Start | | Connection Stop | | Length / shielding Info | | Note |
|------|------------------|----------|-----------------|----------|-------------------------|------------|------|
| | From | I/O Port | To | I/O Port | Length (m) | Shielding | |
| EC | EUT | EC | Laptop | EC | 0 | Unshielded | - |
| | | | | | | | |

7.3 Test Software Description

| Test Item | Software | Description |
|------------|-------------------------|--|
| RF Testing | Command Line in windows | Set the EUT to transmit continuously in diferent test mode |
| | | |
| | | |

8 Test Summary

| Test Item | Test standard | | Test Method/Procedure | Pass / Fail |
|---|--|----------------------------|---|---|
| 26 & 6 dB Emission Bandwidth | FCC/IC | 15.407 (a) (2) | 789033 D02 General UNII Test Procedures New Rules v01r03 | <input checked="" type="checkbox"/> Pass* <input type="checkbox"/> N/A |
| 99% Bandwidth | IC | RSS 247 (A9.2) (2) | RSS Gen (6.6) | <input checked="" type="checkbox"/> Pass* <input type="checkbox"/> N/A |
| Maximum conducted Output Power | FCC/IC | 15.407 (a) (2) | 789033 D02 General UNII Test Procedures New Rules v01r03 | <input checked="" type="checkbox"/> Pass* <input type="checkbox"/> N/A |
| Power reduction (Antenna Gain > 6 dBi) | FCC/IC | 15.407 (a) (2) | - | <input checked="" type="checkbox"/> Pass* <input type="checkbox"/> N/A |
| Band Edge and Radiated Spurious Emissions | FCC/IC | 15.407(b)(2), 15.407(b)(6) | ANSI C63.4 – 2014 789033 D02 General UNII Test Procedures New Rules v01r03 | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> N/A |
| Power Spectral Density | FCC/IC | 15.407 (a) (2) | 789033 D02 General UNII Test Procedures New Rules v01r03 | <input checked="" type="checkbox"/> Pass* <input type="checkbox"/> N/A |
| Frequency Stability | FCC/IC | 15.407 (g) | - | <input checked="" type="checkbox"/> Pass* <input type="checkbox"/> N/A |
| Transmit Power Control (TPC) | FCC/IC | 15.407 (h)(1) | - | <input checked="" type="checkbox"/> Pass* <input type="checkbox"/> N/A |
| User Manual | FCC/IC | - | - | <input checked="" type="checkbox"/> Pass* <input type="checkbox"/> N/A |
| Remark | <ol style="list-style-type: none"> All measurement uncertainties are not taken into consideration for all presented test result. The applicant shall ensure frequency stability by showing that an emission is maintained within the band of operation under all normal operating conditions as specified in the user's manual. Note:* for 5GHz please refer 10604551H-B-R1 | | | |

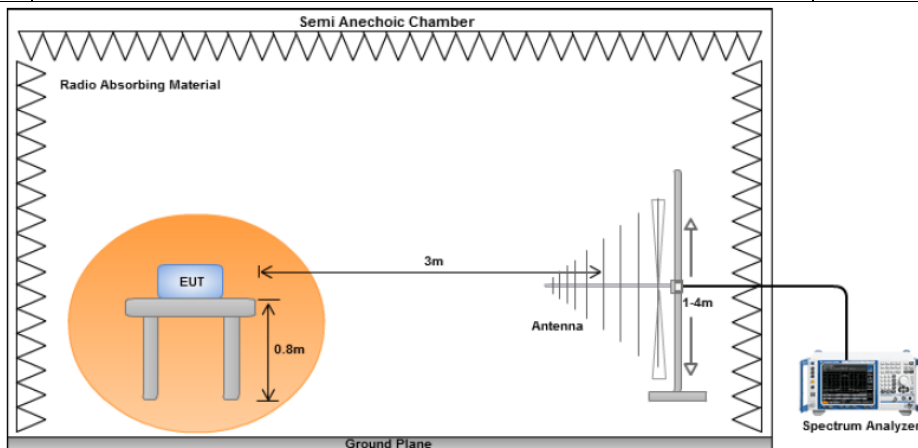
9 Measurement Uncertainty

| Emissions | | | |
|---|-----------------|---|---------------|
| Test Item | Frequency Range | Description | Uncertainty |
| Band Edge and Radiated Spurious Emissions | 30MHz – 1GHz | Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m) | +5.6dB/-4.5dB |
| Band Edge and Radiated Spurious Emissions | 1GHz – 40GHz | Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m) | +4.3dB/-4.1dB |

10 Measurements, Examination and Derived Results

10.1 Radiated Spurious Emissions below 1GHz

Requirement(s):

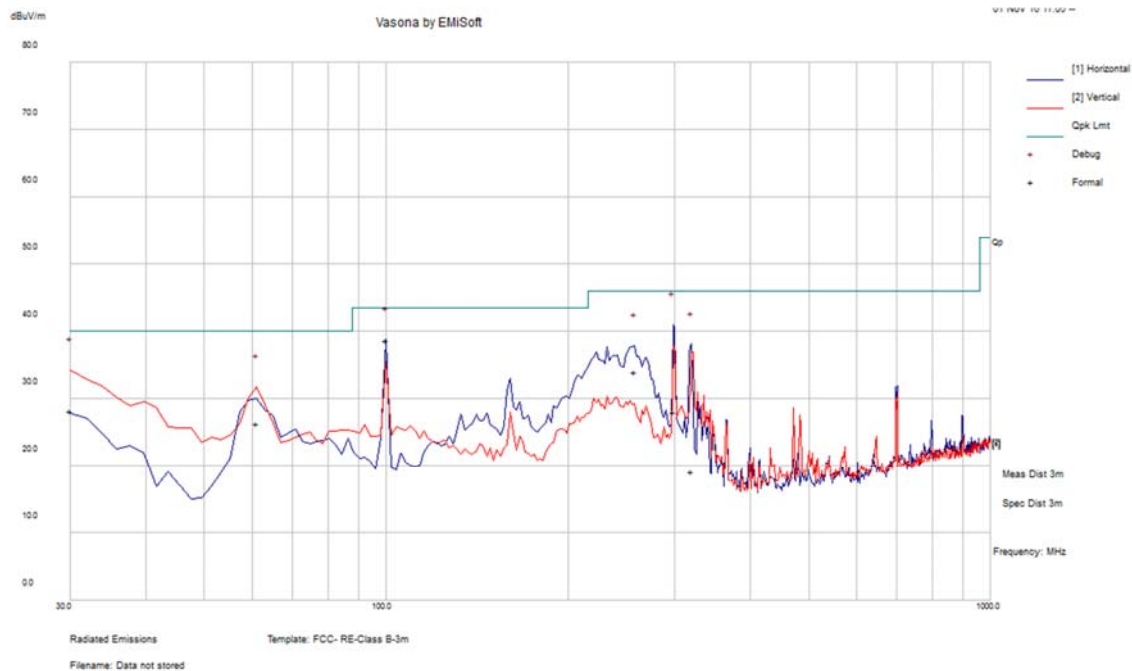
| Spec | Item | Requirement | Applicable | | | | | | | | | | |
|----------------------------------|--|--|-----------------------|-----------------------|---------|-----|----------|-----|---------|-----|-----------|-----|-------------------------------------|
| 47CFR§15.209(d) RSS-GEN (5.5) | a) | <p>Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges</p> <table><tr><th>Frequency range (MHz)</th><th>Field Strength (uV/m)</th></tr><tr><td>30 – 88</td><td>100</td></tr><tr><td>88 – 216</td><td>150</td></tr><tr><td>216 960</td><td>200</td></tr><tr><td>Above 960</td><td>500</td></tr></table> | Frequency range (MHz) | Field Strength (uV/m) | 30 – 88 | 100 | 88 – 216 | 150 | 216 960 | 200 | Above 960 | 500 | <input checked="" type="checkbox"/> |
| Frequency range (MHz) | Field Strength (uV/m) | | | | | | | | | | | | |
| 30 – 88 | 100 | | | | | | | | | | | | |
| 88 – 216 | 150 | | | | | | | | | | | | |
| 216 960 | 200 | | | | | | | | | | | | |
| Above 960 | 500 | | | | | | | | | | | | |
| Test Setup | <div></div> | | | | | | | | | | | | |
| Procedure | <div><div><div>1.</div><div>2.</div><div>3.</div><div>4.</div></div><div><p>The EUT was switched on and allowed to warm up to its normal operating condition.</p><p>The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:</p><div><div>a.</div><div>b.</div><div>c.</div></div><p>A Quasi-peak measurement was then made for that frequency point.</p><p>Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.</p></div></div> | | | | | | | | | | | | |
| Remark | The EUT was scanned up to 1GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case. | | | | | | | | | | | | |
| Result | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail | | | | | | | | | | | | |

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Shuo Zhang at 10m chamber.

Radiated Emission Test Results (Below 1GHz)

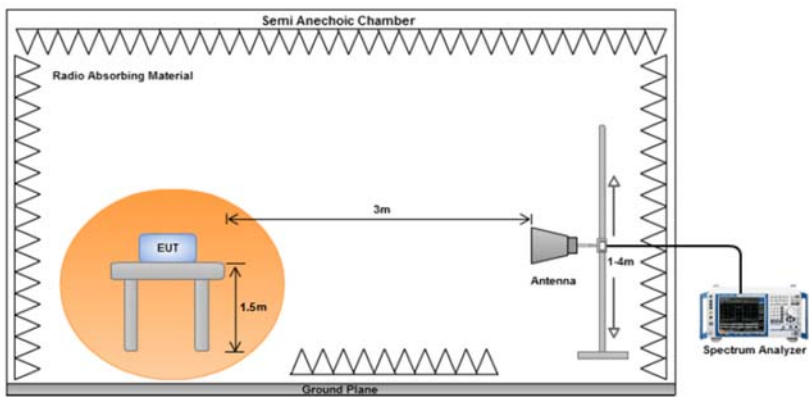


| Frequency MHz | Raw dBuV/m | CL dB | AF dB | Level dBuV/m | Measurement Type | Po l | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|------------|-------|--------|--------------|------------------|------|--------|---------|--------------|-----------|------------|
| 99.89 | 66.55 | 1.65 | -29.47 | 38.73 | Quasi Max | H | 297 | 297 | 43.52 | -4.79 | Pass |
| 298.51 | 51.43 | 2.89 | -26.31 | 28.01 | Quasi Max | H | 102 | 12 | 46.02 | -18.01 | Pass |
| 30.00 | 43.48 | 0.99 | -16.29 | 28.18 | Quasi Max | V | 175 | 323 | 40 | -11.82 | Pass |
| 319.49 | 41.97 | 2.95 | -25.87 | 19.05 | Quasi Max | H | 171 | 335 | 46.02 | -26.97 | Pass |
| 257.58 | 58.85 | 2.79 | -27.63 | 34.02 | Quasi Max | H | 131 | 313 | 46.02 | -12 | Pass |
| 60.99 | 56.41 | 1.43 | -31.58 | 26.26 | Quasi Max | V | 102 | 269 | 40 | -13.74 | Pass |

Note: Both horizontal and vertical polarities were investigated. The results above show only the worst case.

10.2 Radiated Spurious Emissions between 1GHz – 40GHz

Requirement(s):

| Spec | Item | Requirement | Applicable |
|---|--|--|-------------------------------------|
| 47CFR§ 15.407(b)(2), 15.407(b)(6) | (1) | For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. | <input checked="" type="checkbox"/> |
| | (2) | For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band. | <input type="checkbox"/> |
| | (3) | For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz. | <input type="checkbox"/> |
| | (4) | For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz. | <input checked="" type="checkbox"/> |
| | (5) | Restricted band, emission must also comply with the radiated emission limits specified in 15.209 | <input checked="" type="checkbox"/> |
| Test Setup |  | | |
| Procedure | <ol style="list-style-type: none"> The EUT was switched on and allowed to warm up to its normal operating condition. The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: <ol style="list-style-type: none"> Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen. The EUT was then rotated to the direction that gave the maximum emission. Finally, the antenna height was adjusted to the height that gave the maximum emission. An average measurement was then made for that frequency point. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured. | | |
| Remark | The EUT was scanned up to 40GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case. | | |
| Result | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail | | |

Test Data ☒ Yes (See below) ☐ N/A
Test Plot ☐ Yes (See below) ☒ N/A

Test was done by Shuo Zhang at 10m chamber.

Radiated Emission Test Results (Above 1GHz)

W52:

Above 1GHz-40GHz – 802.11a – 5180MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17947.35 | 39.33 | 9.14 | 8.36 | 56.83 | Peak Max | H | 192 | 70 | 74 | -17.17 | Pass |
| 7013.31 | 47.63 | 5.79 | -0.27 | 53.15 | Peak Max | V | 105 | 10 | 74 | -20.85 | Pass |
| 1596.43 | 53.03 | 2.82 | -15.06 | 40.78 | Peak Max | V | 111 | 202 | 74 | -33.22 | Pass |
| 17947.35 | 27.41 | 9.14 | 8.36 | 44.91 | Average Max | H | 192 | 70 | 54 | -9.09 | Pass |
| 7013.31 | 42.45 | 5.79 | -0.27 | 47.97 | Average Max | V | 105 | 10 | 54 | -6.03 | Pass |
| 1596.43 | 38.07 | 2.82 | -15.06 | 25.82 | Average Max | V | 111 | 202 | 54 | -28.18 | Pass |

Above 1GHz-40GHz – 802.11a – 5200MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17914.23 | 39.63 | 9.13 | 8.54 | 57.3 | Peak Max | H | 261 | 112 | 74 | -16.71 | Pass |
| 7033.81 | 42.64 | 5.8 | -0.37 | 48.07 | Peak Max | V | 360 | 208 | 74 | -25.93 | Pass |
| 1596.27 | 55.09 | 2.82 | -15.06 | 42.85 | Peak Max | V | 108 | 182 | 74 | -31.15 | Pass |
| 17914.23 | 27.3 | 9.13 | 8.54 | 44.97 | Average Max | H | 261 | 112 | 54 | -9.04 | Pass |
| 7033.81 | 29.63 | 5.8 | -0.37 | 35.06 | Average Max | V | 360 | 208 | 54 | -18.94 | Pass |
| 1596.27 | 39.3 | 2.82 | -15.06 | 27.06 | Average Max | V | 108 | 182 | 54 | -26.94 | Pass |

Above 1GHz-40GHz – 802.11a – 5240MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17925.10 | 39.84 | 9.13 | 8.48 | 57.46 | Peak Max | V | 256 | 168 | 74 | -16.54 | Pass |
| 10562.15 | 41.26 | 7.33 | 0.26 | 48.85 | Peak Max | H | 180 | 161 | 74 | -25.15 | Pass |
| 1595.98 | 52.35 | 2.82 | -15.06 | 40.11 | Peak Max | V | 107 | 213 | 74 | -33.89 | Pass |
| 17925.10 | 27.67 | 9.13 | 8.48 | 45.28 | Average Max | V | 256 | 168 | 54 | -8.72 | Pass |
| 10562.15 | 29.12 | 7.33 | 0.26 | 36.71 | Average Max | H | 180 | 161 | 54 | -17.29 | Pass |
| 1595.98 | 38.15 | 2.82 | -15.06 | 25.9 | Average Max | V | 107 | 213 | 54 | -28.1 | Pass |

Above 1GHz-40GHz – 802.11n-20M – 5180MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17947.35 | 39.33 | 9.14 | 8.36 | 56.83 | Peak Max | H | 192 | 70 | 74 | -17.17 | Pass |
| 7013.31 | 47.63 | 5.79 | -0.27 | 53.15 | Peak Max | V | 105 | 10 | 74 | -20.85 | Pass |
| 1596.43 | 53.03 | 2.82 | -15.06 | 40.78 | Peak Max | V | 111 | 202 | 74 | -33.22 | Pass |
| 17947.35 | 27.41 | 9.14 | 8.36 | 44.91 | Average Max | H | 192 | 70 | 54 | -9.09 | Pass |
| 7013.31 | 42.45 | 5.79 | -0.27 | 47.97 | Average Max | V | 105 | 10 | 54 | -6.03 | Pass |
| 1596.43 | 38.07 | 2.82 | -15.06 | 25.82 | Average Max | V | 111 | 202 | 54 | -28.18 | Pass |

Above 1GHz-40GHz – 802.11n-20M – 5200MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17934.94 | 39.54 | 9.14 | 8.43 | 57.11 | Peak Max | H | 131 | 23 | 74 | -16.9 | Pass |
| 7013.56 | 44.44 | 5.79 | -0.27 | 49.96 | Peak Max | V | 105 | 12 | 74 | -24.04 | Pass |
| 1596.03 | 54.53 | 2.82 | -15.06 | 42.29 | Peak Max | V | 276 | 136 | 74 | -31.71 | Pass |
| 17934.94 | 27.62 | 9.14 | 8.43 | 45.18 | Average Max | H | 131 | 23 | 54 | -8.82 | Pass |
| 7013.56 | 36.39 | 5.79 | -0.27 | 41.91 | Average Max | V | 105 | 12 | 54 | -12.09 | Pass |
| 1596.03 | 39.44 | 2.82 | -15.06 | 27.19 | Average Max | V | 276 | 136 | 54 | -26.81 | Pass |

Above 1GHz-40GHz – 802.11n-20M – 5240MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17372.98 | 39.46 | 9.01 | 7.65 | 56.11 | Peak Max | H | 345 | 52 | 74 | -17.89 | Pass |
| 7011.92 | 42.51 | 5.79 | -0.26 | 48.04 | Peak Max | H | 323 | 293 | 74 | -25.96 | Pass |
| 1596.67 | 46.63 | 2.82 | -15.06 | 34.39 | Peak Max | H | 320 | 61 | 74 | -39.61 | Pass |
| 17372.98 | 27.06 | 9.01 | 7.65 | 43.72 | Average Max | H | 345 | 52 | 54 | -10.29 | Pass |
| 7011.92 | 29.6 | 5.79 | -0.26 | 35.13 | Average Max | H | 323 | 293 | 54 | -18.87 | Pass |
| 1596.67 | 34.11 | 2.82 | -15.06 | 21.87 | Average Max | V | 118 | 82 | 54 | -32.13 | Pass |

Above 1GHz-40GHz – 802.11n-40M – 5190MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|-------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17862.93 | 38.77 | 9.12 | 8.23 | 56.12 | Peak Max | H | 120 | 270 | 74 | -17.88 | Pass |
| 10620.13 | 41.23 | 7.43 | 0.27 | 48.93 | Peak Max | H | 222 | 35 | 74 | -25.07 | Pass |
| 6999.65 | 41.92 | 5.78 | -0.2 | 47.5 | Peak Max | V | 228 | 145 | 74 | -26.5 | Pass |
| 17862.93 | 27.43 | 9.12 | 8.23 | 44.78 | Average Max | H | 120 | 270 | 54 | -9.22 | Pass |
| 10620.13 | 29.54 | 7.43 | 0.27 | 37.24 | Average Max | V | 324 | 204 | 54 | -16.76 | Pass |
| 6999.65 | 29.71 | 5.78 | -0.2 | 35.29 | Average Max | V | 228 | 145 | 54 | -18.71 | Pass |

Above 1GHz-40GHz – 802.11n-40M – 5230MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|-------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17734.20 | 38.67 | 9.09 | 8.17 | 55.93 | Peak Max | V | 288 | 141 | 74 | -18.07 | Pass |
| 10543.95 | 40.42 | 7.3 | 0.3 | 48.02 | Peak Max | V | 125 | 68 | 74 | -25.98 | Pass |
| 6999.42 | 41.96 | 5.78 | -0.2 | 47.54 | Peak Max | V | 286 | 229 | 74 | -26.46 | Pass |
| 17734.20 | 27.14 | 9.09 | 8.17 | 44.4 | Average Max | V | 288 | 141 | 54 | -9.6 | Pass |
| 10543.95 | 28.66 | 7.3 | 0.3 | 36.26 | Average Max | V | 125 | 68 | 54 | -17.74 | Pass |
| 6999.42 | 29.74 | 5.78 | -0.2 | 35.32 | Average Max | V | 286 | 229 | 54 | -18.68 | Pass |

W58:

Above 1GHz-40GHz – 802.11a – 5745MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17702.93 | 39.21 | 9.08 | 8.46 | 56.75 | Peak Max | V | 139 | 38 | 74 | -17.25 | Pass |
| 11489.10 | 41.51 | 7.61 | 1.86 | 50.98 | Peak Max | V | 349 | 98 | 74 | -23.02 | Pass |
| 1596.71 | 55.05 | 2.82 | -15.06 | 42.81 | Peak Max | V | 134 | 194 | 74 | -31.2 | Pass |
| 17702.93 | 27.21 | 9.08 | 8.46 | 44.75 | Average Max | V | 139 | 38 | 54 | -9.25 | Pass |
| 11489.10 | 29.03 | 7.61 | 1.86 | 38.5 | Average Max | V | 349 | 98 | 54 | -15.5 | Pass |
| 1596.71 | 39.78 | 2.82 | -15.06 | 27.54 | Average Max | V | 134 | 194 | 54 | -26.46 | Pass |

Above 1GHz-40GHz – 802.11a – 5785MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17659.37 | 38.78 | 9.07 | 8.32 | 56.17 | Peak Max | V | 314 | 243 | 74 | -17.83 | Pass |
| 11569.05 | 40.87 | 7.56 | 1.97 | 50.4 | Peak Max | V | 388 | 197 | 74 | -23.6 | Pass |
| 1596.98 | 56.07 | 2.82 | -15.06 | 43.83 | Peak Max | V | 145 | 186 | 74 | -30.17 | Pass |
| 17659.37 | 26.82 | 9.07 | 8.32 | 44.21 | Average Max | V | 314 | 243 | 54 | -9.79 | Pass |
| 11569.05 | 29.01 | 7.56 | 1.97 | 38.54 | Average Max | V | 388 | 197 | 54 | -15.46 | Pass |
| 1596.98 | 40.79 | 2.82 | -15.06 | 28.55 | Average Max | V | 145 | 186 | 54 | -25.45 | Pass |

Above 1GHz-40GHz – 802.11a – 5825MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17979.74 | 39.56 | 9.15 | 8.19 | 56.89 | Peak Max | H | 255 | 15 | 74 | -17.11 | Pass |
| 11653.54 | 39.88 | 7.51 | 1.87 | 49.27 | Peak Max | V | 205 | 114 | 74 | -24.73 | Pass |
| 1596.42 | 55.88 | 2.82 | -15.06 | 43.64 | Peak Max | V | 144 | 192 | 74 | -30.36 | Pass |
| 17979.74 | 27.44 | 9.15 | 8.19 | 44.78 | Average Max | H | 255 | 15 | 54 | -9.22 | Pass |
| 11653.54 | 27.95 | 7.51 | 1.87 | 37.34 | Average Max | V | 205 | 114 | 54 | -16.67 | Pass |
| 1596.42 | 40.9 | 2.82 | -15.06 | 28.65 | Average Max | V | 144 | 192 | 54 | -25.35 | Pass |

Above 1GHz-40GHz – 802.11n-20M – 5745MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 11488.51 | 41.1 | 7.61 | 1.86 | 50.57 | Peak Max | H | 368 | 296 | 74 | -23.43 | Pass |
| 17232.87 | 39.82 | 8.99 | 5.7 | 54.52 | Peak Max | H | 223 | 186 | 74 | -19.49 | Pass |
| 1595.74 | 55.33 | 2.82 | -15.06 | 43.09 | Peak Max | V | 105 | 274 | 74 | -30.91 | Pass |
| 11488.51 | 29.47 | 7.61 | 1.86 | 38.94 | Average Max | H | 368 | 296 | 54 | -15.06 | Pass |
| 17232.87 | 27.54 | 8.99 | 5.7 | 42.24 | Average Max | V | 105 | 3 | 54 | -11.76 | Pass |
| 1595.74 | 40.67 | 2.82 | -15.06 | 28.43 | Average Max | V | 105 | 274 | 54 | -25.57 | Pass |

Above 1GHz-40GHz – 802.11n-20M – 5785MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17924.91 | 39.33 | 9.13 | 8.48 | 56.94 | Peak Max | H | 246 | 346 | 74 | -17.06 | Pass |
| 11569.77 | 41.68 | 7.56 | 1.98 | 51.21 | Peak Max | H | 117 | 279 | 74 | -22.79 | Pass |
| 1595.20 | 56.23 | 2.82 | -15.06 | 43.98 | Peak Max | V | 154 | 141 | 74 | -30.02 | Pass |
| 17924.91 | 27.16 | 9.13 | 8.48 | 44.77 | Average Max | H | 246 | 346 | 54 | -9.23 | Pass |
| 11569.77 | 29.16 | 7.56 | 1.98 | 38.7 | Average Max | V | 137 | 267 | 54 | -15.3 | Pass |
| 1595.20 | 40.09 | 2.82 | -15.06 | 27.85 | Average Max | V | 154 | 141 | 54 | -26.15 | Pass |

Above 1GHz-40GHz – 802.11n-20M – 5825MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17976.93 | 39.13 | 9.15 | 8.2 | 56.48 | Peak Max | V | 214 | 206 | 74 | -17.52 | Pass |
| 11647.53 | 40.15 | 7.52 | 1.89 | 49.56 | Peak Max | V | 267 | 91 | 74 | -24.44 | Pass |
| 1596.64 | 55.04 | 2.82 | -15.06 | 42.8 | Peak Max | V | 107 | 276 | 74 | -31.2 | Pass |
| 17976.93 | 27.47 | 9.15 | 8.2 | 44.82 | Average Max | V | 214 | 206 | 54 | -9.18 | Pass |
| 11647.53 | 28.11 | 7.52 | 1.89 | 37.52 | Average Max | V | 267 | 91 | 54 | -16.48 | Pass |
| 1596.64 | 40.3 | 2.82 | -15.06 | 28.06 | Average Max | V | 107 | 276 | 54 | -25.95 | Pass |

Above 1GHz-40GHz – 802.11n-40M – 5755MHz

| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17405.27 | 38.64 | 9.01 | 7.88 | 55.53 | Peak Max | V | 204 | 76 | 74 | -18.47 | Pass |
| 11530.30 | 41.39 | 7.58 | 1.88 | 50.85 | Peak Max | V | 244 | 133 | 74 | -23.15 | Pass |
| 1595.58 | 54.17 | 2.82 | -15.06 | 41.93 | Peak Max | V | 105 | 279 | 74 | -32.07 | Pass |
| 17405.27 | 26.74 | 9.01 | 7.88 | 43.63 | Average Max | V | 204 | 76 | 54 | -10.37 | Pass |
| 11530.30 | 28.91 | 7.58 | 1.88 | 38.37 | Average Max | V | 244 | 133 | 54 | -15.63 | Pass |
| 1595.58 | 39.69 | 2.82 | -15.06 | 27.45 | Average Max | V | 105 | 279 | 54 | -26.56 | Pass |
















Above 1GHz-40GHz – 802.11n-40M – 5795MHz







| Frequency MHz | Raw dBuV | Cable Loss | AF dB | Level dBuV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBuV/m | Margin dB | Pass /Fail |
|---------------|----------|------------|--------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| 17712.19 | 38.84 | 9.08 | 8.38 | 56.3 | Peak Max | V | 103 | 131 | 74 | -17.7 | Pass |
| 11592.22 | 42.06 | 7.55 | 2.03 | 51.64 | Peak Max | V | 138 | 58 | 74 | -22.36 | Pass |
| 1596.65 | 55.45 | 2.82 | -15.06 | 43.2 | Peak Max | V | 106 | 274 | 74 | -30.8 | Pass |
| 17712.19 | 27.18 | 9.08 | 8.38 | 44.63 | Average Max | V | 103 | 131 | 54 | -9.37 | Pass |
| 11592.22 | 28.74 | 7.55 | 2.03 | 38.32 | Average Max | V | 138 | 58 | 54 | -15.68 | Pass |
| 1596.65 | 40.7 | 2.82 | -15.06 | 28.45 | Average Max | V | 106 | 274 | 54 | -25.55 | Pass |

Annex A. TEST INSTRUMENT

| Instrument | Model | Serial # | Cal Date | Cal Cycle | Cal Due | In use |
|------------------------------------|----------|----------|------------|-----------|------------|-------------------------------------|
| Conducted Emissions | | | | | | |
| R & S Receiver | ESIB 40 | 100179 | 06/08/2016 | 1 Year | 06/08/2017 | <input checked="" type="checkbox"/> |
| CHASE LISN | MN2050B | 1018 | 08/07/2016 | 1 Year | 08/07/2017 | <input checked="" type="checkbox"/> |
| Radiated Emissions | | | | | | |
| R & S Receiver | ESIB 40 | 1018 | 08/07/2016 | 1 Year | 08/07/2017 | <input checked="" type="checkbox"/> |
| Bi-Log antenna (30MHz~2GHz) | JB1 | A030702 | 08/12/2016 | 1 Year | 08/12/2017 | <input checked="" type="checkbox"/> |
| Horn Antenna (1GHz~26GHz) | 3115 | 100059 | 08/25/2016 | 1 Year | 08/25/2017 | <input checked="" type="checkbox"/> |
| 3 Meters SAC | 3M | N/A | 08/08/2016 | 1 Year | 08/08/2017 | <input checked="" type="checkbox"/> |
| 10 Meters SAC | 10M | N/A | 09/05/2016 | 1 Year | 09/05/2017 | <input checked="" type="checkbox"/> |
| RF Conducted Measurement | | | | | | |
| Spectrum Analyzer | N9010A | 10SL0219 | 08/20/2016 | 1 Year | 08/20/2017 | <input checked="" type="checkbox"/> |
| R & S Receiver | ESIB 40 | 100179 | 06/08/2016 | 1 Year | 06/08/2017 | <input checked="" type="checkbox"/> |
| ETS-Lingren USB RF Power Sensor | 7002-006 | 10SL0190 | 09/03/2016 | 1 Year | 09/03/2017 | <input checked="" type="checkbox"/> |

Annex B. SIEMIC Accreditation

| Accreditations | Document | Scope / Remark |
|---|---|---|
| ISO 17025 (A2LA) |  | Please see the documents for the detailed scope |
| ISO Guide 65 (A2LA) |  | Please see the documents for the detailed scope |
| TCB Designation | | A1 , A2 , A3 , A4 , B1 , B2 , B3 , B4 , C |
| FCC DoC Accreditation |  | FCC Declaration of Conformity Accreditation |
| FCC Site Registration |  | 3 meter site |
| FCC Site Registration |  | 10 meter site |
| IC Site Registration |  | 3 meter site |
| IC Site Registration |  | 10 meter site |
| EU NB |  | Radio & Telecommunications Terminal Equipment: EN45001 – EN ISO/IEC 17025 |
| |  | Electromagnetic Compatibility: EN45001 – EN ISO/IEC 17025 |
| Singapore iDA CB(Certification Body) |  | Phase I , Phase II |
| Vietnam MIC CAB Accreditation |  | Please see the document for the detailed scope |
| Hong Kong OFCA |  | (Phase II) OFCA Foreign Certification Body for Radio and Telecom |
| |  | (Phase I) Conformity Assessment Body for Radio and Telecom |
| Industry Canada CAB |  | Radio: Scope A – All Radio Standard Specification in Category I |
| |  | Telecom: CS-03 Part I, II, V, VI, VII, VIII |

| | | |
|--|---|---|
| Japan Recognized Certification Body Designation |  | Radio: A1. Terminal equipment for purpose of calling Telecom: B1. Specified radio equipment specified in Article 38-2, Paragraph 1, Item 1 of the Radio Law |
| Korea CAB Accreditation |  | EMI: KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI KN22: Test Method for EMI EMS: KCC Notice 2008-38, RRL Notice 2008-4: CA Procedures for EMS KN24, KN61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11: Test Method for EMS Radio: RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10, RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-21, RRL Notice 2007-80, RRL Notice 2004-68 Telecom: President Notice 20664, RRL Notice 2007-30, RRL Notice 2008-7 with attachments 1, 3, 5, 6; President Notice 20664, RRL Notice 2008-7 with attachment 4 |
| Taiwan NCC CAB Recognition |  | LP0002, PSTN01, ADSL01, ID0002, IS6100, CNS14336, PLMN07, PLMN01, PLMN08 |
| Taiwan BSMI CAB Recognition |  | CNS 13438 |
| Japan VCCI |  | R-3083: Radiation 3 meter site C-3421: Main Ports Conducted Interference Measurement T-1597: Telecommunication Ports Conducted Interference Measurement |
| Australia CAB Recognition |  | EMC: AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR22, AS/NZS 61000.6.3, AS/NZS 61000.6.4 Radio communications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771 Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06, AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/ACIF S60950.1 |
| Australia NATA Recognition |  | AS/ACIF S002, AS/ACIF S003, AS/ACIF S004, AS/ACIF S006, AS/ACIF S016, AS/ACIF S031, AS/ACIF S038, AS/ACIF S040, AS/ACIF S041, AS/ACIF S043.2 |