CERTIFICATION TEST REPORT

Manufacturer: Libra Industries, Inc.

7770 Division Drive

Mentor, Ohio 44060 USA

Applicant: 7signal Solutions, Inc.

526 South Main Street, Suite 601G

Akron, Ohio 44311 USA

Product Description: 802.11ac Dual Band Module

Product Host: Sapphire Eye 2100, model 2100

Modular Radio Model: WLE900VX-7S

Radio Module FCC ID: YLFSE2100WL

Testing Commenced: May 22, 2015

Testing Ended: July 14, 2015

Summary of Test Results: In Compliance

The EUT complies with the EMC requirements when manufactured identically as the unit tested in this report, including any required modifications. Any changes to the design or build of this unit subsequent to this testing may deem it non-compliant.

Standards:

FCC Part 15 Subpart C, Section 15.247

• FCC15.207 - Conducted Limits

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Client: 7signal Solutions, Inc.

FCC ID: YLFSE2100WL

Evaluation Conducted by:

Joe Knepper, EMC Proj. Eng.

Joe Knepper

7 7 MA

Report Reviewed by:

Ken Littell, EMC Tech. Mgr.

F2 Labs 26501 Ridge Road Damascus, MD 20872 Ph 301.253.4500 Fax 301.253.5179 F2 Labs 16740 Peters Road Middlefield, OH 44062 Ph 440.632.5541 Fax 440.632.5542

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Client: 7signal Solutions, Inc.

FCC ID: YLFSE2100WL

1 **ADMINISTRATIVE INFORMATION**

1.1 **Measurement Location:**

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

1.2 **Measurement Procedure:**

All measurements were performed according to the 2009 version of ANSI C63.4 and recommended FCC procedure of measurement of DTS operating under Section 15.247 and in KDB558074. A list of the measurement equipment can be found in Section 6.

1.3 **Uncertainty Budget:**

Radiated Emission

- Combined Uncertainty (+ or -) 2.24 dB
- Expanded Uncertainty (+ or -) 4.48 dB

Conducted Emissions

- Combined Uncertainty (+ or -) 1.88 dB
- Expanded Uncertainty (+ or -) 3.75 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.4 **Document History**

| Document Number | Description | Issue Date | Approved By |
|-----------------|-------------|---------------|----------------|
| F2LQ7176-01E | First Issue | Aug. 25, 2015 | K. Littell |
| | | | |
| | | | |

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Client: 7signal Solutions, Inc. FCC ID: YLFSE2100WL Order Number: F2LQ7176

SUMMARY OF TEST RESULTS

| Test Name | Standard(s) | Results |
|--|---|----------|
| Radiated Spurious Emissions with 6dBi Integral Antenna | CFR 47 Part 15.247(d) / Part 15.209 / KDB558074 | Complies |
| Conducted Emissions | CFR 47 Part 15.207(a) | Complies |

| Modifications Made to the Equipment |
|-------------------------------------|
| None |

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Client: 7signal Solutions, Inc.

FCC ID: YLFSE2100WL

3 ENGINEERING STATEMENT

This report has been prepared on behalf of 7signal Solutions, Inc. to provide documentation for the testing described herein. This equipment has been tested and found to comply with Part 15.247 of the FCC Rules using ANSI C63.4 2009 and KDB558074 standards. The test results found in this test report relate only to the items tested.

The client has declared that no adjustments were made to the power of the unit as provided by the radio manufacturer. This test report is for a Class II permissive change and the power setting is identical to the power setting used for original filling.

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Order Number: F2LQ7176 Client: 7signal Solutions, Inc.

FCC ID: YLFSE2100WL

4 EUT INFORMATION AND DATA

4.1 Equipment Under Test:

802.11ac Dual Band Module

Modular Radio Model: WLE900VX-7S Radio Module FCC ID: YLFSE2100WL

Product Host: Sapphire Eye 2100, model 2100, Serial No.: 121400029

4.2 Trade Name:

7signal Solutions, Inc.

4.3 Power Supply:

AC/DC Adapter Shenzen Zhen Huan Electric Co. ZF120A-1201500

4.4 Applicable Rules:

CFR 47, Part 15.247, subpart C

4.5 Equipment Category:

Radio Transmitter-DTS

4.6 Antenna:

6dBi Integral Antenna

4.7 Accessories:

| Equipment Type | Manufacturer | Model | Serial Number |
|----------------|--------------|------------|---------------|
| Router | Asus | RT-AC1900 | E3IA0H005750 |
| PoE Injector | TP-Link | TL-POE150S | None Spec. |

4.8 Test Item Condition:

The equipment to be tested was received in good condition.

4.9 Testing Algorithm:

The EUT was set up in a test mode to continuous transmit at high (2462 MHz), mid (2437 MHz) and low (2412 MHz) frequencies of the 2.4GHz spectrum. EUT was powered at 120V, 60 Hz. The highest emissions were recorded in the data tables.

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Client: 7signal Solutions, Inc. FCC ID: YLFSE2100WL Order Number: F2LQ7176

LIST OF MEASUREMENT INSTRUMENTATION

| Equipment Type | Asset Number | Manufacturer | Model | Serial Number | Calibration Due Date | |
|---------------------------------------|-----------------|---------------------|---------------------------------|---------------|-------------------------|--|
| Shielded Chamber | CL166 | AlbatrossProjects | B83117-DF435- T261 | US140023 | Jan. 1, 2016 | |
| Shield Room | 0175 | Ray Proof | N/A | 11645 | Verified | |
| Temp/Hum. Recorder | CL137 | Extech | RH520 | CH16992 | May 7, 2016 | |
| Receiver | CL151 | Rohde & Schwarz | ESU40 | 100319 | Nov. 12, 2015 | |
| Antenna 1- Chamber | 0142 | ETS/EMCO | 3142B | 9811-1330 | Verified | |
| Horn Antenna | CL098 | Emco | 3115 | 9809-5580 | Dec. 3, 2015 | |
| Pre-Amplifier | CL045 | Hewlett-Packard | 8447D | 2944A08445 | Nov. 15, 2015 | |
| Amplifier w/Monopole & 18" Loop | CL163 | A.H. Systems, Inc. | EHA-52B | 100 | Apr. 20, 2016 | |
| Software: | ٦ | Γile Version 1.0 | Software Verified: June 1, 2015 | | | |
| Software: | EMC | 32, Version 5.20.2 | Software Verified: June 1, 2015 | | | |
| Antenna, JB3 Combination | CL175 | Sunol Sciences | JB3 | A030315 | Mar. 12, 2016 | |
| Antenna, Horn | CL114 | A. H. Systems, Inc. | SAS-572 | 237 | Oct. 16, 2016 | |
| Spectrum Analyzer | 0141 | Hewlett Packard | 8591E | 3520A04145 | Sept. 2, 2015 | |
| Transient Limiter | CL102 | Hewlett Packard | 11947A | 3107A03325 | Feb. 9, 2016 | |
| LISN 1 | 0149 | Solar | 8028-50-TS-24- BNC | 1130 | Jan. 8, 2017 | |
| LISN 3 | 0148 | Solar | 8028-50-TS-24- BNC | 1129 | Jan. 8, 2017 | |

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6 RADIATED SPURIOUS EMISSION

The EUT antenna port was fitted with its integral/internal chip antenna. Radiated emissions were measured in a Semi-Anechoic Chamber. All emissions generated that fall in the restricted bands per FCC Part 15.205 were examined.

6.1 Requirements:

All emissions that fall in the restricted bands defined in FCC Part 15.205 shall not exceed the maximum field strength listed in FCC Part 15.209(a).

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FCC ID: YLFSE2100WL

6.2 Radiated Spurious Emission Test Data

| Test Date(s): | June 3, 2015 | Test Engineer: | J. Knepper |
|---------------|-------------------------|--------------------|------------|
| Standards: | CFR 47 Part 15.247(d); | Air Temperature: | 22.4°C |
| | Part 15.209 / KDB558074 | Relative Humidity: | 46% |

Notes: Plots are peak, max hold prescan data included only to determine what frequencies to investigate and measure. The EUT was initially placed in a semi-anechoic chamber, and rotated in all three orthogonal positions to maximize the emissions. The orthogonal position that showed the highest emissions was used. Characterization measurements were then performed to determine at which frequencies significant emissions occurred. These graphs are shown below.

The equipment was fully exercised with all cabling attached to the EUT and was positioned in a semi-anechoic chamber for maximum emissions. While the equipment was energized, the receiving antenna was scanned from 1.0 meter to 4.0 meters in both vertical and horizontal polarities while the turntable was adjusted 360 degrees to determine the maximum field strength. The tables of measured results can be found below.

Some of the frequencies did not change with the EUT on or off. At those frequencies, the test distance was shortened to 1 meter and still no emissions from the EUT were visible or over the ambient or limit.

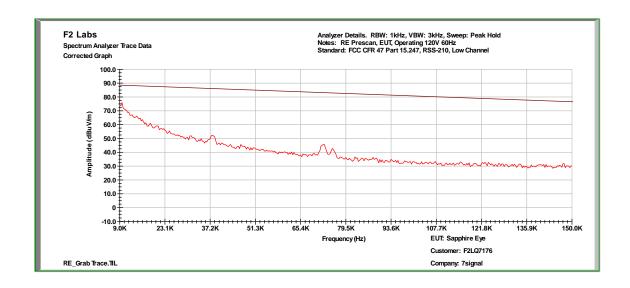
In the following plots, emissions to be found by the EUT were measured and listed in tables. The plots are for reference only and the limit lines are not actual limit lines but merely a guide.

The 20 MHz 802.11n bandwidth was found to be the worst case emissions.

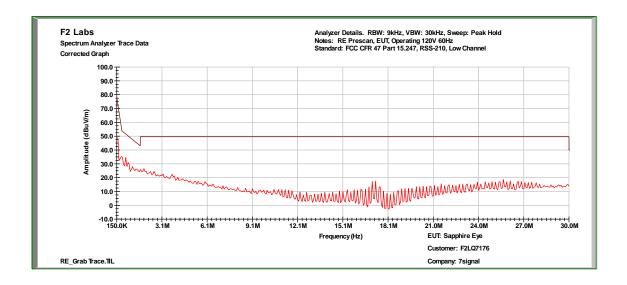
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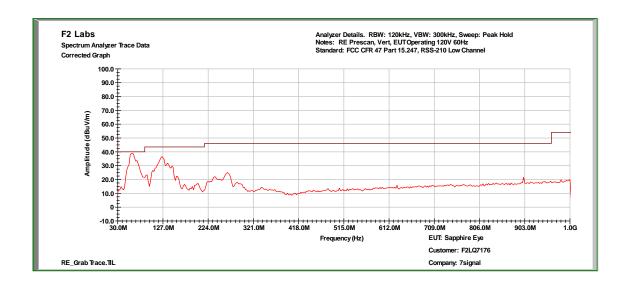
20M, Radiated Spurious Emissions: Low Channel, 9k to 150k



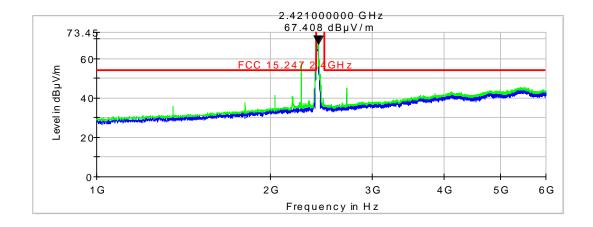
20M, Radiated Spurious Emissions: Low Channel, 150k to 30 MHz



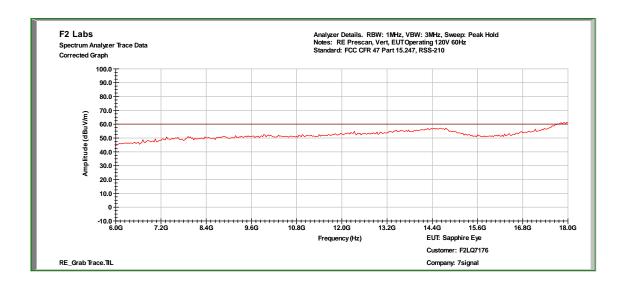
20M, Radiated Spurious Emissions: Low Channel, 30 MHz to 1 GHz, Vertical



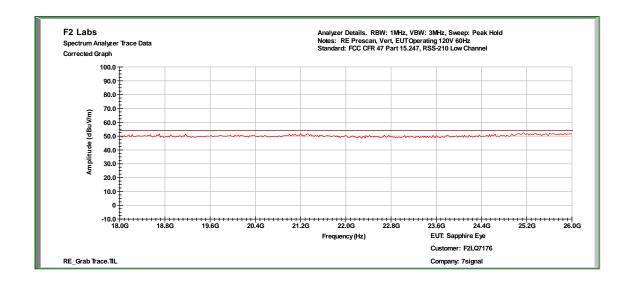
20M, Radiated Spurious Emissions: Low Channel, 1 GHz to 6 GHz, Vertical



20M, Radiated Spurious Emissions: Low Channel, 6 GHz to 18 GHz, Vertical



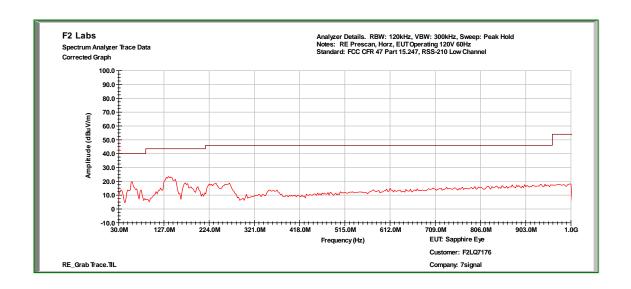
20M, Radiated Spurious Emissions: Low Channel, 18 GHz to 20 GHz, Vertical



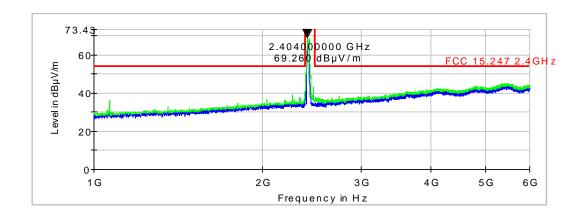


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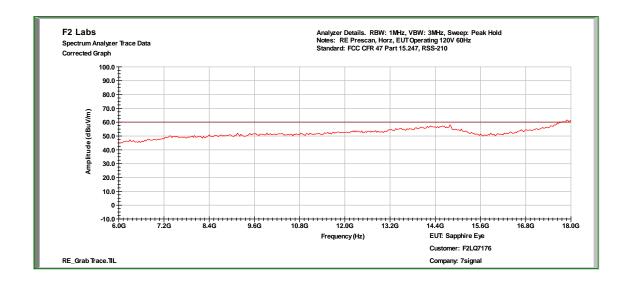
20M, Radiated Spurious Emissions: Low Channel, 30 MHz to 1 GHz, Horizontal



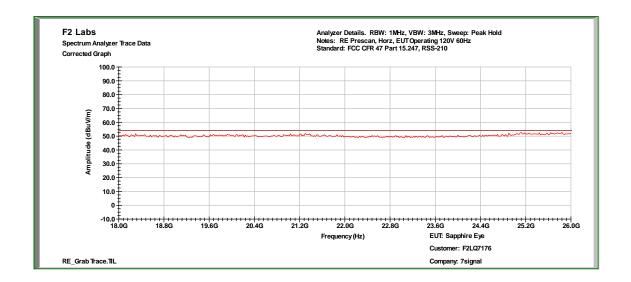
20M, Radiated Spurious Emissions: Low Channel, 1 GHz to 6 GHz, Horizontal



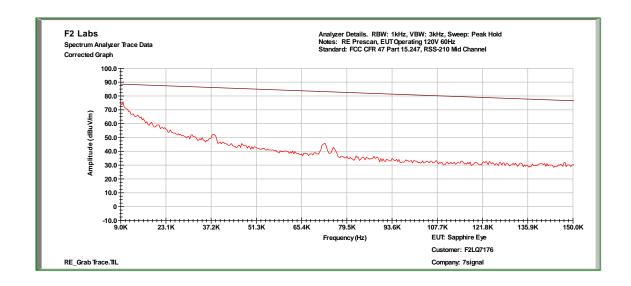
20M, Radiated Spurious Emissions: Low Channel, 6 GHz to 18 GHz, Horizontal



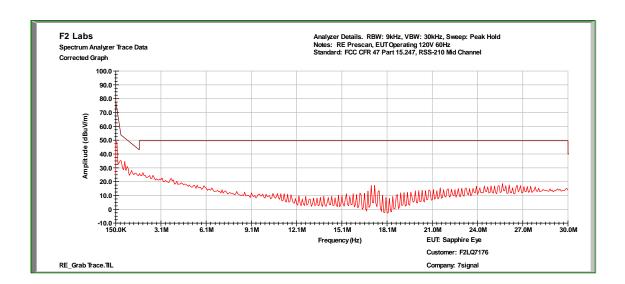
20M, Radiated Spurious Emissions: Low Channel, 18 GHz to 20 GHz, Horizontal



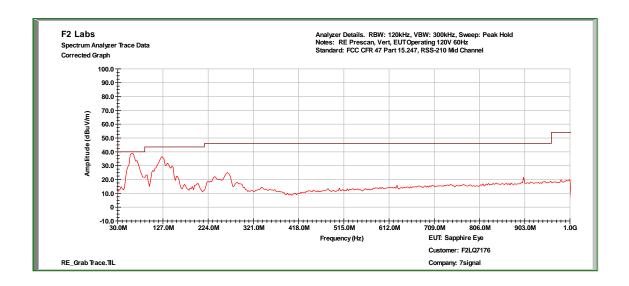
20M, Radiated Spurious Emissions: Mid Channel, 9k to 150k



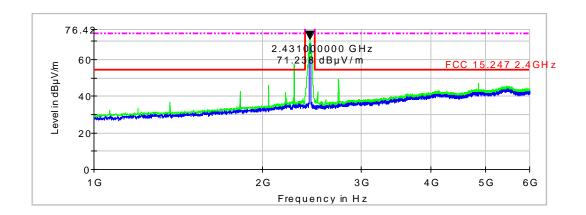
20M, Radiated Spurious Emissions: Mid Channel, 150k to 30 MHz



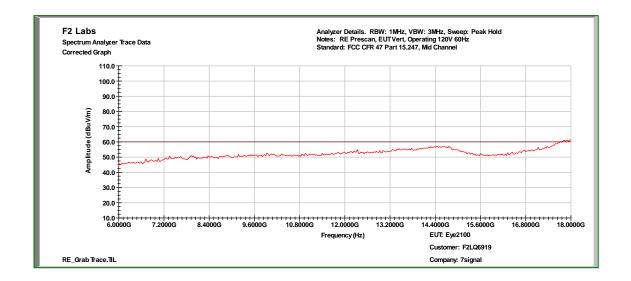
20M, Radiated Spurious Emissions: Mid Channel, 30 MHz to 1 GHz, Vertical



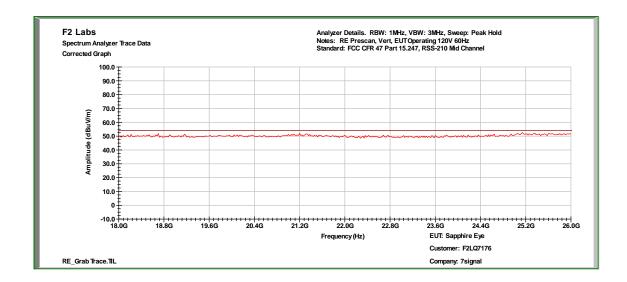
20M, Radiated Spurious Emissions: Mid Channel, 1 GHz to 6 GHz, Vertical



20M, Radiated Spurious Emissions: Mid Channel, 6 GHz to 18 GHz, Vertical



20M, Radiated Spurious Emissions: Mid Channel, 18 GHz to 20 GHz, Vertical

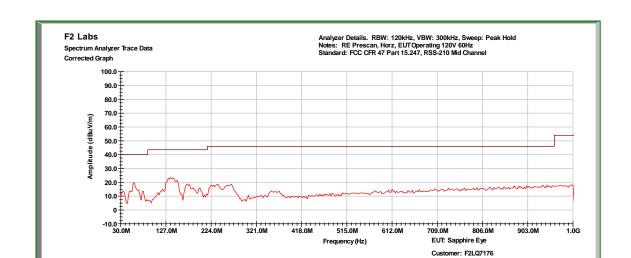


Company: 7signal

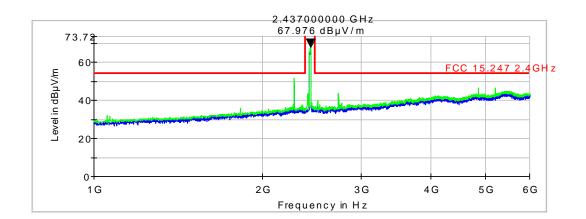
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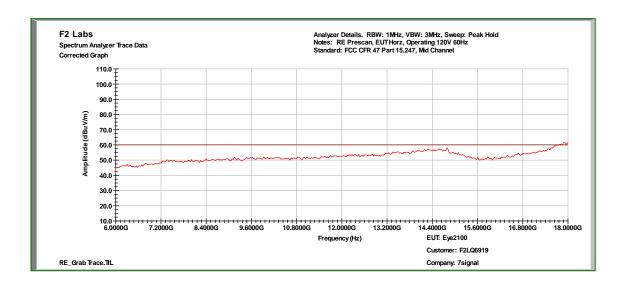
20M, Radiated Spurious Emissions: Mid Channel, 30 MHz to 1 GHz, Horizontal



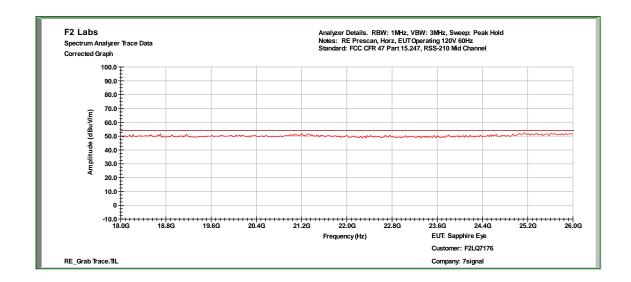
20M, Radiated Spurious Emissions: Mid Channel, 1 GHz to 6 GHz, Horizontal



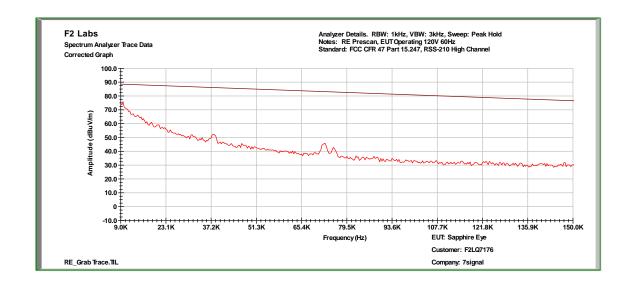
20M, Radiated Spurious Emissions: Mid Channel, 6 GHz to 18 GHz, Horizontal



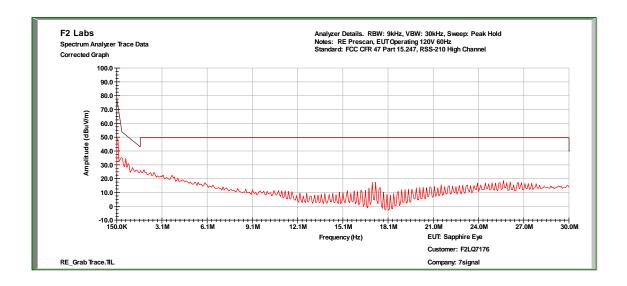
20M, Radiated Spurious Emissions: Mid Channel, 18 GHz to 20 GHz, Horizontal



20M, Radiated Spurious Emissions: High Channel, 9k to 150k

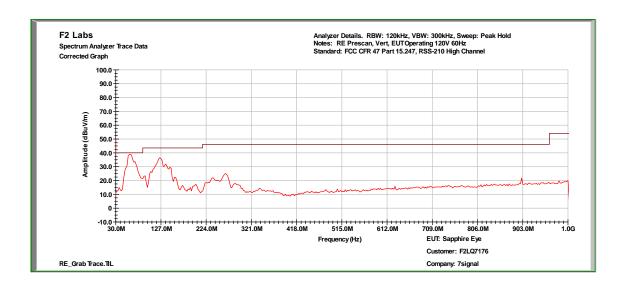


20M, Radiated Spurious Emissions: High Channel, 150k to 30 MHz

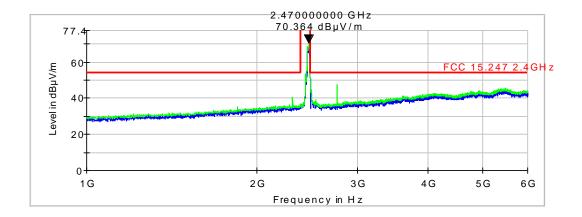


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20M, Radiated Spurious Emissions: HighChannel, 30 MHz to 1 GHz, Vertical



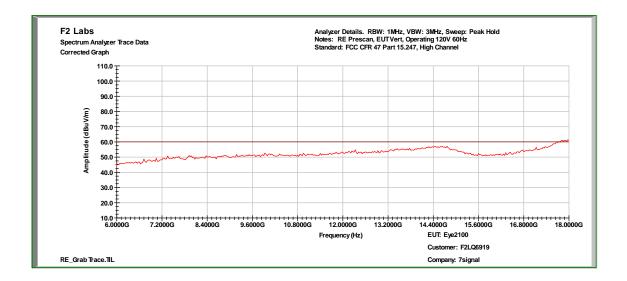
20M, Radiated Spurious Emissions: High Channel, 1 GHz to 6 GHz, Vertical



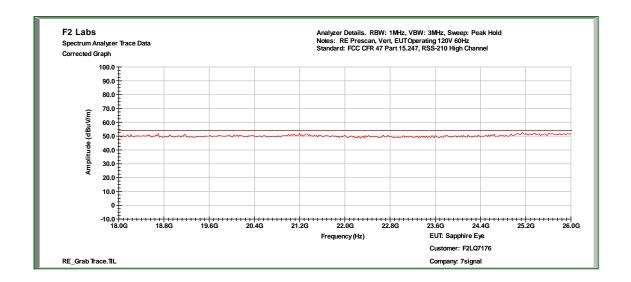
Client: 7signal Solutions, Inc.

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20M, Radiated Spurious Emissions: High Channel, 6 GHz to 18 GHz, Vertical



20M, Radiated Spurious Emissions: High Channel, 18 GHz to 26 GHz, Vertical

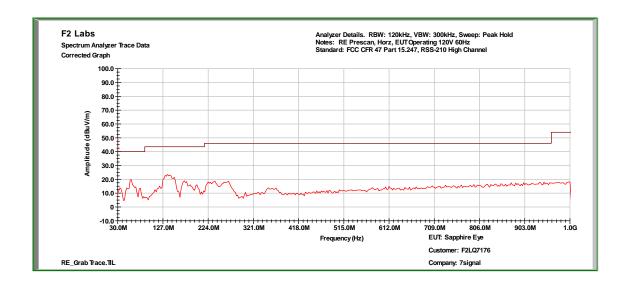


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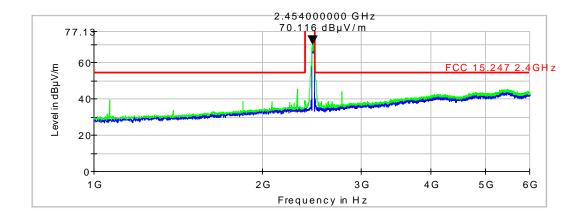


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20M, Radiated Spurious Emissions: High Channel, 30 MHz to 1 GHz, Horizontal

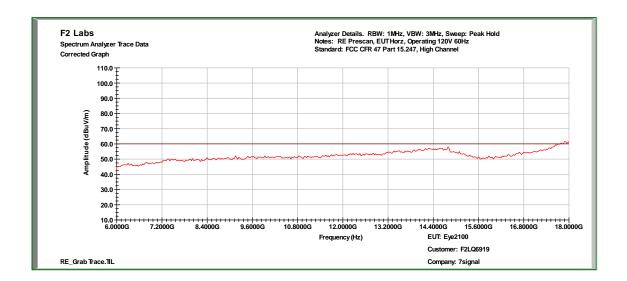


20M, Radiated Spurious Emissions: High Channel, 1 GHz to 6 GHz, Horizontal

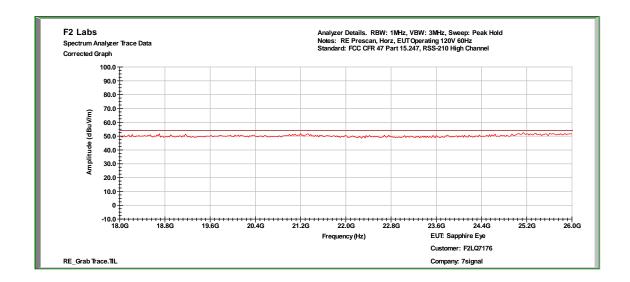


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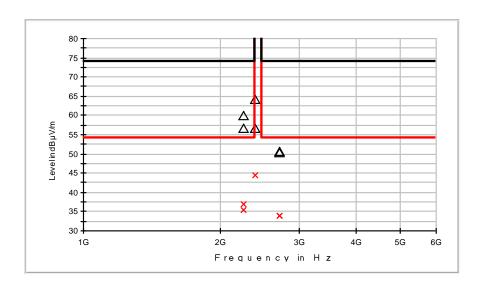
20M, Radiated Spurious Emissions: High Channel, 6 GHz to 18 GHz, Horizontal



20M, Radiated Spurious Emissions: High Channel, 18 GHz to 26 GHz, Horizontal



Measurements



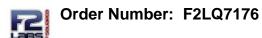
20M, Low Channel - MaxPeak

| Frequency (MHz) | Antenna Polarization | Reading (dBµV) | Cable Loss & Antenna Factor (dB) | Emission (dBµV/m) | Limit (dBµV/m) | Margin (dB) |
|--------------------|----------------------|-------------------|--|----------------------|-------------------|----------------|
| 2261.192000 | V | 49.4 | 10.8 | 60.20 | 74.0 | -13.8 |
| 2261.282000 | Н | 45.9 | 10.8 | 56.70 | 74.0 | -17.3 |
| 2389.467000 | V | 53.0 | 11.2 | 64.20 | 74.0 | -9.8 |
| 2389.585000 | Н | 45.7 | 11.2 | 56.90 | 74.0 | -17.1 |
| 2713.502000 | V | 38.2 | 12.2 | 50.40 | 74.0 | -23.6 |

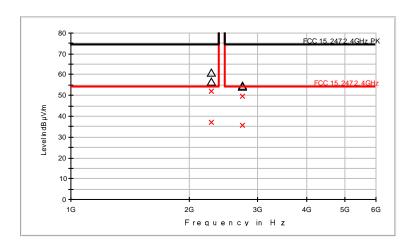
20M, Low Channel - Average

| Frequency (MHz) | Antenna Polarization | Reading (dBµV) | Cable Loss & Antenna Factor (dB) | Emission (dBµV/m) | Limit (dBµV/m) | Margin (dB) |
|--------------------|----------------------|-------------------|--|----------------------|-------------------|----------------|
| 2261.192000 | V | 26.2 | 10.8 | 37.00 | 54.0 | -17.0 |
| 2261.282000 | Н | 24.7 | 10.8 | 35.50 | 54.0 | -18.5 |
| 2389.467000 | V | 33.2 | 11.2 | 44.40 | 54.0 | -9.6 |
| 2389.585000 | Н | 29.0 | 11.2 | 40.20 | 54.0 | -13.8 |
| 2713.502000 | V | 21.9 | 12.2 | 34.10 | 54.0 | -19.9 |

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20M, Mid Channel



20M, Mid Channel - MaxPeak

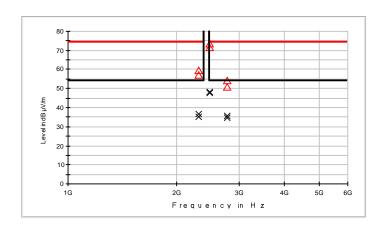
| Frequency (MHz) | Antenna Polarization | Reading (dBµV) | Cable Loss & Antenna Factor (dB) | Emission (dBµV/m) | Limit (dBµV/m) | Margin (dB) |
|--------------------|----------------------|-------------------|--|----------------------|-------------------|----------------|
| 2280.000000 | Н | 46.3 | 10.8 | 57.10 | 74.0 | -16.9 |
| 2280.000000 | V | 50.4 | 10.8 | 61.20 | 74.0 | -12.8 |
| 2736.000000 | Н | 42.4 | 12.3 | 54.70 | 74.0 | -19.3 |
| 2736.000000 | V | 42.2 | 12.3 | 54.50 | 74.0 | -19.5 |

20M, Mid Channel - Average

| Frequency (MHz) | Antenna Polarization | Reading (dBµV) | Cable Loss & Antenna Factor (dB) | Emission (dBµV/m) | Limit (dBµV/m) | Margin (dB) |
|--------------------|----------------------|-------------------|--|----------------------|-------------------|----------------|
| 2280.000000 | Н | 41.1 | 10.8 | 51.90 | 54.0 | -2.1 |
| 2280.000000 | V | 26.4 | 10.8 | 37.20 | 54.0 | -16.8 |
| 2736.000000 | Н | 37.2 | 12.3 | 49.50 | 54.0 | -4.5 |
| 2736.000000 | V | 23.2 | 12.3 | 35.50 | 54.0 | -18.5 |

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20M, High Channel



20M, High Channel - MaxPeak

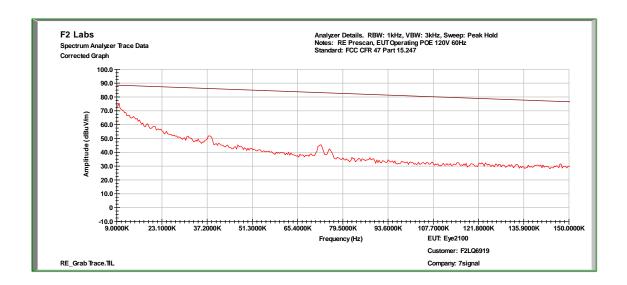
| Frequency (MHz) | Antenna Polarization | Reading (dBµV) | Cable Loss & Antenna Factor (dB) | Emission (dBµV/m) | Limit (dBµV/m) | Margin (dB) |
|--------------------|----------------------|-------------------|--|----------------------|-------------------|----------------|
| 2308.000000 | Н | 46.7 | 10.9 | 57.60 | 74.0 | -16.4 |
| 2308.000000 | V | 48.8 | 10.9 | 59.70 | 74.0 | -14.3 |
| 2483.500000 | V | 60.1 | 11.5 | 71.59 | 74.0 | -2.4 |
| 2483.500000 | Н | 61.9 | 11.5 | 73.37 | 74.0 | -0.6 |
| 2483.688000 | Н | 60.3 | 11.5 | 71.80 | 74.0 | -2.2 |
| 2483.688000 | V | 62.3 | 11.5 | 73.80 | 74.0 | -0.2 |
| 2769.680000 | V | 38.8 | 12.4 | 51.20 | 74.0 | -22.8 |
| 2769.680000 | Н | 42.1 | 12.4 | 54.50 | 74.0 | -19.5 |

20M, High Channel - Average

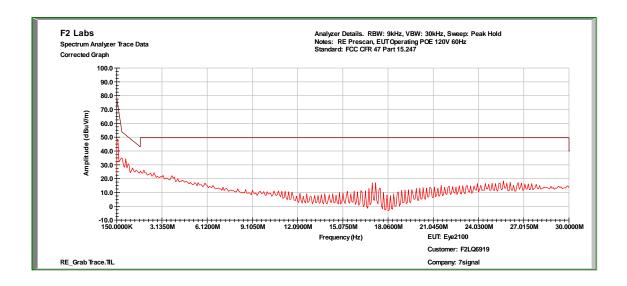
| Frequency (MHz) | Antenna Polarization | Reading (dBµV) | Cable Loss & Antenna Factor (dB) | Emission (dBµV/m) | Limit (dBµV/m) | Margin (dB) |
|--------------------|----------------------|-------------------|--|----------------------|-------------------|----------------|
| 2308.000000 | Н | 24.1 | 10.9 | 35.00 | 54.0 | -19.0 |
| 2308.000000 | V | 25.8 | 10.9 | 36.70 | 54.0 | -17.3 |
| 2483.500000 | V | 37.3 | 11.5 | 48.83 | 54.0 | -5.2 |
| 2483.500000 | Н | 39.7 | 11.5 | 51.19 | 54.0 | -2.8 |
| 2483.688000 | Н | 36.4 | 11.5 | 47.90 | 54.0 | -6.1 |
| 2483.688000 | V | 36.5 | 11.5 | 48.00 | 54.0 | -6.0 |
| 2769.680000 | V | 22.4 | 12.4 | 34.80 | 54.0 | -19.2 |
| 2769.680000 | Н | 23.4 | 12.4 | 35.80 | 54.0 | -18.2 |

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POE, Radiated Spurious Emissions: 9k to 150k

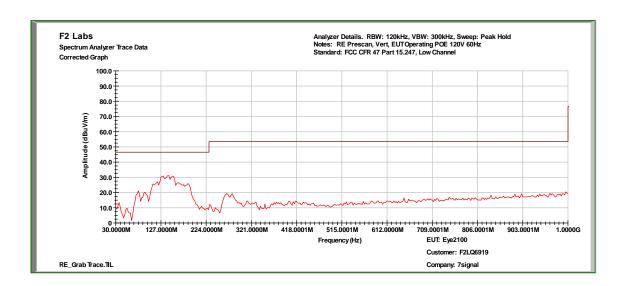


POE, Radiated Spurious Emissions: 150k to 30 MHz

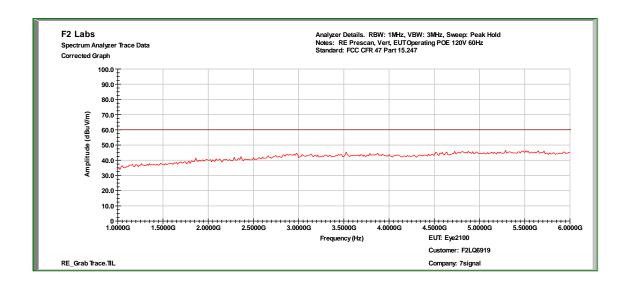


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POE, Radiated Spurious Emissions: 30 MHz to 1 GHz, Vertical

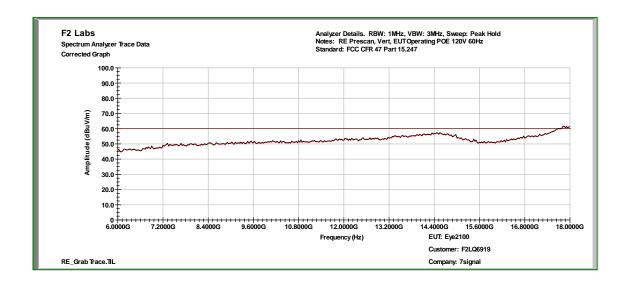


POE Radiated Spurious Emissions: 1 GHz to 6 GHz, Vertical

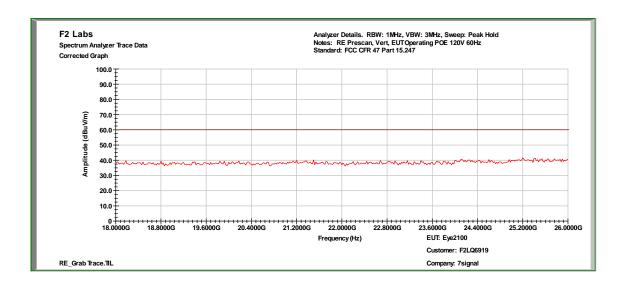


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POE, Radiated Spurious Emissions: 6 GHz to 18 GHz, Vertical

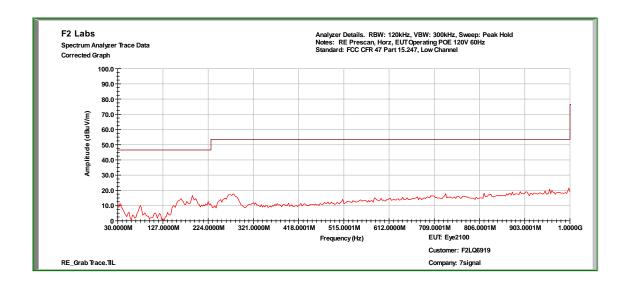


POE, Radiated Spurious Emissions: 18 GHz to 26 GHz, Vertical

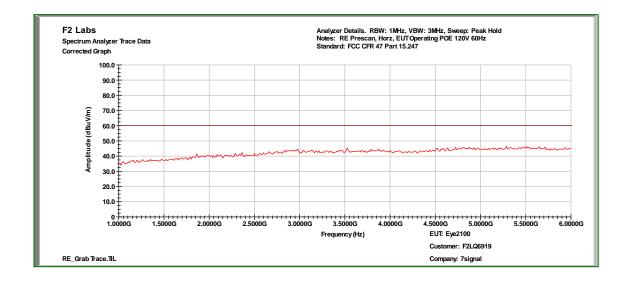


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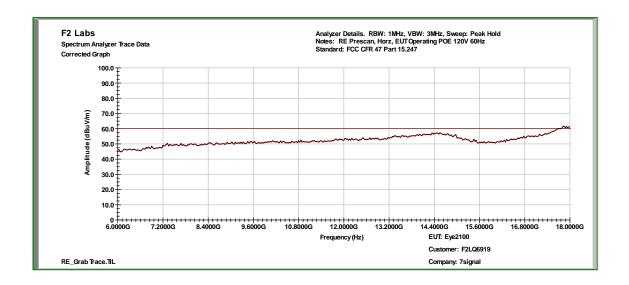
POE, Radiated Spurious Emissions: 30 MHz to 1 GHz, Horizontal



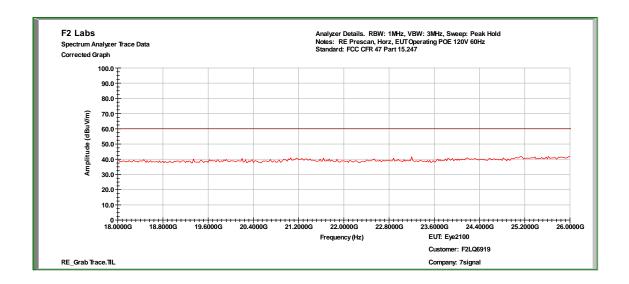
POE, Radiated Spurious Emissions: 1 GHz to 6 GHz, Horizontal



POE, Radiated Spurious Emissions: GHz to 18 GHz, Horizontal



POE, Radiated Spurious Emissions: 18 GHz to 26 GHz, Horizontal



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Client: 7signal Solutions, Inc.

FCC ID: YLFSE2100WL

7 CONDUCTED EMISSIONS

7.1 Requirements

In accordance with FCC CFR 47 Part 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 50 μ H/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 boundary between the frequency ranges.

| | Conducted Limit (dBμV) | | | | | |
|-----------------------------|------------------------|-----------|--|--|--|--|
| Frequency of Emission (MHz) | Quasi-peak | Average | | | | |
| 0.15-0.5 | 66 to 56* | 56 to 46* | | | | |
| 0.5-5 | 56 | 46 | | | | |
| 5-30 | 60 | 50 | | | | |

^{*}Decreases with the logarithm of the frequency.

7.2 Procedure

The EUT was placed on a 1.0 x 1.5 meter non-conductive table, 0.8 meter above a horizontal ground plane and 0.4 meter from a vertical ground plane. Power was provided to the EUT through a LISN bonded to a 3 x 2 meter ground plane. The LISN and peripherals were supplied power through a filtered AC power source. The output of the LISN was connected to the input of the receiver via a transient limiter, and emissions in the range 150 kHz to 30 MHz were measured. The measurements were recorded using the quasi-peak and average detectors as directed by the standard, and the resolution bandwidth during testing was 9 kHz. The raw measurements were corrected to allow for attenuation from the LISN, transient limiter and cables.

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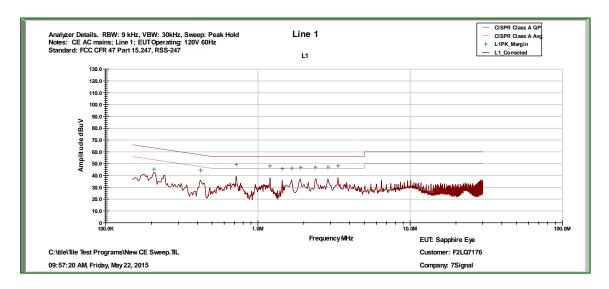
Order Number: F2LQ7176

Client: 7signal Solutions, Inc. FCC ID: YLFSE2100WL

7.3 Conducted Emissions Test Data

| Test Date(s): | May 22, 2015; July 14, 2015 | Test Engineer: | J. Knepper |
|---------------|-----------------------------|--------------------|------------|
| Rule: | 15.207 | Air Temperature: | 21.0° C |
| Test Results: | Pass | Relative Humidity: | 46% |

Loaded, Conducted Test - Line 1: 0.15 MHz to 30.0 MHz



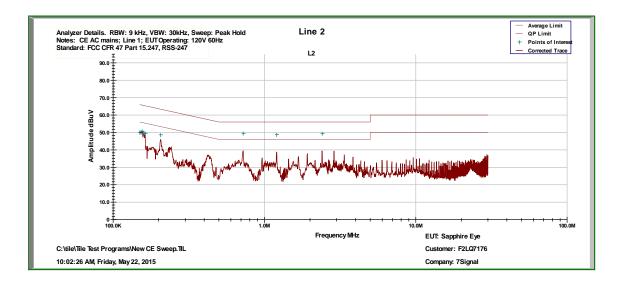
| | Top Discrete Measurements | | | | | | | | | | |
|-----|---------------------------|--------------------|------------|-----------------|-----------------|-------------------|-----------------|----------------|--|--|--|
| No. | Conductor | Frequency (MHz) | Detector | Level (dBµV) | Adjustment (dB) | Results (dBµV) | Limit (dBµV) | Margin (dB) | | | |
| 1 | Line 1 | 0.718934 | Quasi-Peak | 29.140 | 10.441 | 39.581 | 56.0 | -16.419 | | | |
| ' | Lille | 0.718934 | Average | 26.315 | 10.441 | 36.756 | 46.0 | -9.244 | | | |
| 2 | Line 1 | 1.1981 | Quasi-Peak | 27.730 | 10.400 | 38.130 | 56.0 | -17.87 | | | |
| | Lille | 1.1981 | Average | 25.108 | 10.400 | 35.508 | 46.0 | -10.492 | | | |
| 3 | Line 1 | 1.43913 | Quasi-Peak | 24.500 | 10.384 | 34.884 | 56.0 | -21.116 | | | |
| 3 | Lille | 1.43913 | Average | 20.737 | 10.384 | 31.121 | 46.0 | -14.879 | | | |
| 4 | Line 1 | 1.67664 | Quasi-Peak | 26.250 | 10.380 | 36.630 | 56.0 | -19.37 | | | |
| 4 | Lille | 1.67664 | Average | 22.618 | 10.380 | 32.998 | 46.0 | -13.002 | | | |
| 5 | Line 1 | 1.91458 | Quasi-Peak | 25.360 | 10.371 | 35.731 | 56.0 | -20.269 | | | |
| 3 | | 1.91458 | Average | 22.048 | 10.371 | 32.419 | 46.0 | -13.581 | | | |
| 6 | Line 1 | 2.39456 | Quasi-Peak | 26.540 | 10.364 | 36.904 | 56.0 | -19.096 | | | |
| O | Line | 2.39456 | Average | 23.365 | 10.364 | 33.729 | 46.0 | -12.271 | | | |
| 7 | Line 1 | 2.87596 | Quasi-Peak | 26.770 | 10.360 | 37.130 | 56.0 | -18.870 | | | |
| , | Lille | 2.87596 | Average | 23.063 | 10.360 | 33.423 | 46.0 | -12.577 | | | |
| 8 | Line 1 | 3.35181 | Quasi-Peak | 25.480 | 10.353 | 35.833 | 56.0 | -20.167 | | | |
| | Line | 3.35181 | Average | 21.950 | 10.353 | 32.303 | 46.0 | -13.697 | | | |

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Loaded, Conducted Test - Line 2: 0.15 MHz to 30.0 MHz

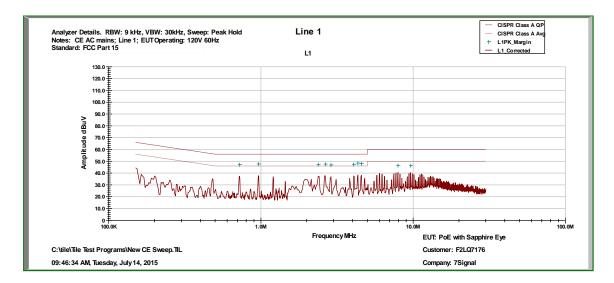


| | Top Discrete Measurements | | | | | | | | | |
|-----|---------------------------|-----------|------------|--------|------------|---------|--------|---------|--|--|
| No. | Conductor | Frequency | Detector | Level | Adjustment | Results | Limit | Margin | | |
| NO. | | (MHz) | Detector | (dBµV) | (dB) | (dBµV) | (dBµV) | (dB) | | |
| 1 | Line 2 | 0.15047 | Quasi-Peak | 36.820 | 11.498 | 48.318 | 65.974 | -17.656 | | |
| | | 0.15047 | Average | 21.743 | 11.498 | 33.241 | 55.974 | -22.733 | | |
| 2 | Line 2 | 0.151161 | Quasi-Peak | 36.520 | 11.494 | 48.014 | 65.937 | -17.923 | | |
| | | 0.151161 | Average | 23.615 | 11.494 | 35.109 | 55.937 | -20.828 | | |
| 3 | Line 2 | 0.155316 | Quasi-Peak | 35.330 | 11.473 | 46.803 | 65.711 | -18.908 | | |
| 3 | Lille 2 | 0.155316 | Average | 22.280 | 11.473 | 33.753 | 55.711 | -21.958 | | |
| 4 | Line 2 | 0.155494 | Quasi-Peak | 35.930 | 11.473 | 47.403 | 65.702 | -18.299 | | |
| 4 | | 0.155494 | Average | 21.878 | 11.473 | 33.351 | 55.702 | -22.351 | | |
| 5 | Line 2 | 0.159814 | Quasi-Peak | 33.200 | 11.451 | 44.651 | 65.474 | -20.82 | | |
| | | 0.159814 | Average | 18.422 | 11.451 | 29.873 | 55.474 | -25.601 | | |
| 6 | Line 2 | 0.162702 | Quasi-Peak | 30.290 | 11.407 | 41.697 | 65.326 | -23.629 | | |
| ٥ | Line 2 | 0.162702 | Average | 13.097 | 11.407 | 24.504 | 55.326 | -30.822 | | |
| 7 | Line 2 | 0.203327 | Quasi-Peak | 32.300 | 11.053 | 43.353 | 63.475 | -20.122 | | |
| ′ | Line 2 | 0.203327 | Average | 21.660 | 11.053 | 32.713 | 53.475 | -20.762 | | |
| 8 | Line 2 | 0.717225 | Quasi-Peak | 28.260 | 10.441 | 38.701 | 56.0 | -17.299 | | |
| ٥ | | 0.717225 | Average | 24.813 | 10.441 | 35.254 | 46.0 | -10.746 | | |
| 9 | Line 2 | 1.19702 | Quasi-Peak | 27.640 | 10.400 | 38.040 | 56.0 | -17.960 | | |
| 9 | Line 2 | 1.19702 | Average | 24.568 | 10.400 | 34.968 | 46.0 | -11.032 | | |
| 10 | Line 2 | 2.39485 | Quasi-Peak | 26.380 | 10.364 | 36.744 | 56.0 | -19.256 | | |
| 10 | Line 2 | 2.39485 | Average | 23.397 | 10.364 | 33.761 | 46.0 | -12.239 | | |

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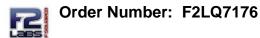


POE, Conducted Test - Line 1: 0.15 MHz to 30.0 MHz

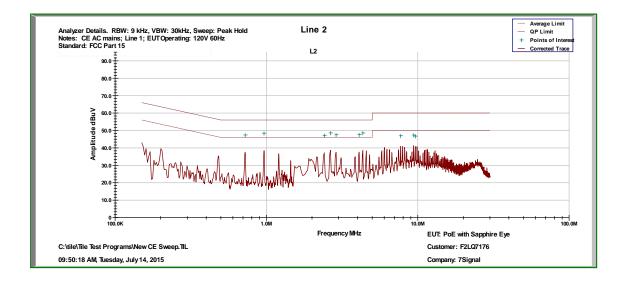


| | Top Discrete Measurements | | | | | | | | | |
|-----|---------------------------|--------------------|------------|-----------------|-----------------|-------------------|-----------------|----------------|--|--|
| No. | Conductor | Frequency (MHz) | Detector | Level (dBµV) | Adjustment (dB) | Results (dBµV) | Limit (dBµV) | Margin (dB) | | |
| 1 | Line 1 | 0.720586 | Quasi-Peak | 26.090 | 10.440 | 36.530 | 56.0 | -19.470 | | |
| ' | Line | 0.720586 | Average | 25.198 | 10.440 | 35.638 | 46.0 | -10.362 | | |
| 2 | Line 1 | 0.958628 | Quasi-Peak | 27.340 | 10.412 | 37.752 | 56.0 | -18.25 | | |
| _ | Lille | 0.958628 | Average | 25.462 | 10.412 | 35.874 | 46.0 | -10.126 | | |
| 3 | Line 1 | 2.36193 | Quasi-Peak | 17.250 | 10.366 | 27.616 | 56.0 | -28.384 | | |
| 3 | Lille | 2.36193 | Average | 5.548 | 10.366 | 15.914 | 46.0 | -30.086 | | |
| 4 | Line 1 | 2.63803 | Quasi-Peak | 26.970 | 10.360 | 37.330 | 56.0 | -18.67 | | |
| 4 | Line | 2.63803 | Average | 25.732 | 10.360 | 36.092 | 46.0 | -9.908 | | |
| 5 | Line 1 | 2.87655 | Quasi-Peak | 25.330 | 10.360 | 35.690 | 56.0 | -20.310 | | |
| 5 | Line | 2.87655 | Average | 23.670 | 10.360 | 34.030 | 46.0 | -11.970 | | |
| 6 | Line 1 | 4.07699 | Quasi-Peak | 26.370 | 10.342 | 36.712 | 56.0 | -19.288 | | |
| O | Line i | 4.07699 | Average | 25.300 | 10.342 | 35.642 | 46.0 | -10.358 | | |
| 7 | Line 1 | 4.31777 | Quasi-Peak | 27.560 | 10.318 | 37.878 | 56.0 | -18.122 | | |
| ′ | Line | 4.31777 | Average | 26.368 | 10.318 | 36.686 | 46.0 | -9.314 | | |
| 8 | Line 1 | 4.558 | Quasi-Peak | 26.750 | 10.301 | 37.051 | 56.0 | -18.949 | | |
| 0 | Lille | 4.558 | Average | 25.517 | 10.301 | 35.818 | 46.0 | -10.182 | | |
| 9 | Line 1 | 7.91467 | Quasi-Peak | 29.930 | 10.059 | 39.989 | 60.0 | -20.011 | | |
| | Line | 7.91467 | Average | 28.603 | 10.059 | 38.662 | 50.0 | -11.338 | | |
| 10 | Line 1 | 9.59425 | Quasi-Peak | 30.110 | 10.124 | 40.234 | 60.0 | -19.766 | | |
| 10 | Line | 9.59425 | Average | 28.695 | 10.124 | 38.819 | 50.0 | -11.181 | | |

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POE, Conducted Test - Line 2: 0.15 MHz to 30.0 MHz



| Top Discrete Measurements | | | | | | | | | |
|---------------------------|-----------|--------------------|------------|-----------------|-----------------|-------------------|-----------------|----------------|--|
| No. | Conductor | Frequency (MHz) | Detector | Level (dBµV) | Adjustment (dB) | Results (dBµV) | Limit (dBµV) | Margin (dB) | |
| 1 | Line 2 | 0.720238 | Quasi-Peak | 26.320 | 10.440 | 36.760 | 56.000 | -19.240 | |
| ' | Line 2 | 0.720238 | Average | 25.545 | 10.440 | 35.985 | 46.000 | -10.015 | |
| 2 | Line 2 | 0.959618 | Quasi-Peak | 28.080 | 10.412 | 38.492 | 56.000 | -17.508 | |
| | Lille | 0.959618 | Average | 26.045 | 10.412 | 36.457 | 46.000 | -9.543 | |
| 3 | Line 2 | 2.40076 | Quasi-Peak | 25.270 | 10.364 | 35.634 | 56.000 | -20.366 | |
| 3 | Lille | 2.40076 | Average | 24.090 | 10.364 | 34.454 | 46.000 | -11.546 | |
| 4 | Line 2 | 2.63844 | Quasi-Peak | 27.120 | 10.360 | 37.480 | 56.000 | -18.520 | |
| 4 | Line 2 | 2.63844 | Average | 25.938 | 10.360 | 36.298 | 46.000 | -9.702 | |
| 5 | Line 2 | 2.87979 | Quasi-Peak | 25.850 | 10.360 | 36.210 | 56.000 | -19.79 | |
| | Line 2 | 2.87979 | Average | 24.360 | 10.360 | 34.720 | 46.000 | -11.280 | |
| 6 | Line 2 | 4.07734 | Quasi-Peak | 26.500 | 10.342 | 36.842 | 56.000 | -19.158 | |
| ٥ | Lille | 4.07734 | Average | 25.295 | 10.342 | 35.637 | 46.000 | -10.363 | |
| 7 | Line 2 | 4.31767 | Quasi-Peak | 27.560 | 10.318 | 37.878 | 56.000 | -18.122 | |
| _ ′ | Lille 2 | 4.31767 | Average | 26.533 | 10.318 | 36.851 | 46.000 | -9.149 | |
| 8 | Line 2 | 7.67395 | Quasi-Peak | 28.870 | 10.086 | 38.956 | 60.0 | -21.044 | |
| ٥ | Lille 2 | 7.67395 | Average | 27.365 | 10.086 | 37.451 | 50.0 | -12.549 | |
| 9 | Line 2 | 9.35379 | Quasi-Peak | 29.570 | 10.114 | 39.684 | 60.0 | -20.316 | |
| 9 | Line 2 | 9.35379 | Average | 27.880 | 10.114 | 37.994 | 50.0 | -12.006 | |
| 10 | Line 2 | 9.59569 | Quasi-Peak | 30.270 | 10.124 | 40.394 | 60.0 | -19.606 | |
| 10 | Line Z | 9.59569 | Average | 28.108 | 10.124 | 38.232 | 50.0 | -11.768 | |

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PHOTOGRAPHS/EXHIBITS - PRODUCT PHOTOS, TEST SETUPS 8

Radiated Spurious Emission



Conducted Emissions

