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Report On

Radio Testing of the
Stahl- und Apparatebau Hans Leffer GmbH & Co. KG
E2016/5 Remote Control Transmitter / Transceiver

FCC Part 15 Subpart C §15.249

Report No. SD72119117-0816A

August 2016



America

TÜV SÜD America Inc., 10040 Mesa Rim Road, San Diego, CA 92121
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REPORT ON Radio Testing of the
Stahl- und Apparatebau Hans Leffer GmbH & Co. KG
E2016/5 Remote Control Transmitter / Transceiver

TEST REPORT NUMBER SD72119117-0816A

PREPARED FOR Stahl- und Apparatebau Hans Leffer GmbH & Co. KG
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DATED August 08, 2016



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Revision History

| SD72119117-0816A | | | | | |
|------------------------------------------------------------------------------------------------------|-----------------|--------------|--------|-------------------|-----------------|
| Stahl- und Apparatebau Hans Leffer GmbH & Co. KG E2016/5 Remote Control Transmitter / Transceiver | | | | | |
| DATE | OLD REVISION | NEW REVISION | REASON | PAGES AFFECTED | APPROVED BY |
| 08/05/2016 | Initial Release | | | | Juan M Gonzalez |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



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SECTION 1

1REPORT SUMMARY

Radio Testing of the
Stahl- und Apparatebau Hans Leffer GmbH & Co. KG
E2016/5 Remote Control Transmitter / Transceiver



1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Stahl- und Apparatebau Hans Leffer GmbH & Co. KG E2016/5 Remote Control Transmitter / Transceiver to the requirements of FCC Part 15 Subpart C §15.249.

| | |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Objective | To perform Radio Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out. |
| Manufacturer | Stahl- und Apparatebau Hans Leffer GmbH & Co. KG |
| Model Name | E2016/5 |
| FCC ID Number | 2AHMMSHT12LEFFER |
| IC Number | 21190-SHT12LEFFER |
| Serial Number(s) | Engineering Sample |
| Number of Samples Tested | 1 |
| Test Specification/Issue/Date | <ul style="list-style-type: none">FCC Part 15 Subpart C §15.249 (October 1, 2015). |
| Start of Test | August 1, 2016 |
| Finish of Test | August 2, 2016 |
| Name of Engineer(s) | Juan M. Gonzalez |
| Related Document(s) | None. Supporting documents for EUT certification are separate exhibits. |

1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC Part 15 Subpart C §15.249 standard is shown below:

| Section | Spec Clause | Test Description | Result | Comments/Base Standard |
|---------|-------------|-----------------------------------------------------|------------------|------------------------|
| - | §15.107 | Conducted Limits | N/A ¹ | See Note |
| 2.1 | §15.215(c) | 20 dB Bandwidth | Compliant | |
| 2.2 | §15.249(a) | Field Strength Limits for Fundamental and Harmonics | Compliant | |
| 2.3 | §15.249(d) | Radiated Spurious Emissions | Compliant | |

Note: N/A¹: *Not applicable, EUT is battery powered.*

1.3 PRODUCT INFORMATION

1.3.1 Technical Description

The Equipment Under Test (EUT) was a Stahl- und Apparatebau Hans Leffer GmbH & Co. KG E2016/5 Remote Control Transmitter / Transceiver as shown in the photograph below.



Equipment Under Test



1.3.2 EUT General Description

| | |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT Description | Remote Control Transmitter / Transceiver |
| Model Name | E2016/5 |
| Rated Voltage | 4.5 VDC (3 x AAA batteries) |
| Output Power | 93.90 dBμV/m @ 3 meters |
| Frequency Range | 910.0MHz to 910.9MHz in the 902 MHz to 928 MHz Band |
| Number of Operating Frequencies | 4 |
| Modulation | FSK |
| Channels Verified | Mid Channel 910.3MHz * *Per FCC §15.31(m): When the frequency range over which device operates ≤ 1MHz the measurements can be limited to the middle channel. |
| Antenna Type | Integral |

1.3.3 Antenna Details

| | |
|---------------------|-------------------------|
| Antenna Type | Integrated coil antenna |
| Antenna Size/length | 0.5cm x 4.5 cm |

1.4 EUT TEST CONFIGURATION

1.4.1 Test Configuration Description

| Test Configuration | Description |
|--------------------|-----------------------------------------------------------------|
| Default | The EUT was configured to transmit continuously at Mid Channel. |

1.4.2 EUT Exercise Software

EUT is loaded with a test firmware allowing continuous transmission (test mode) at test frequencies.

1.4.3 Support Equipment and I/O cables

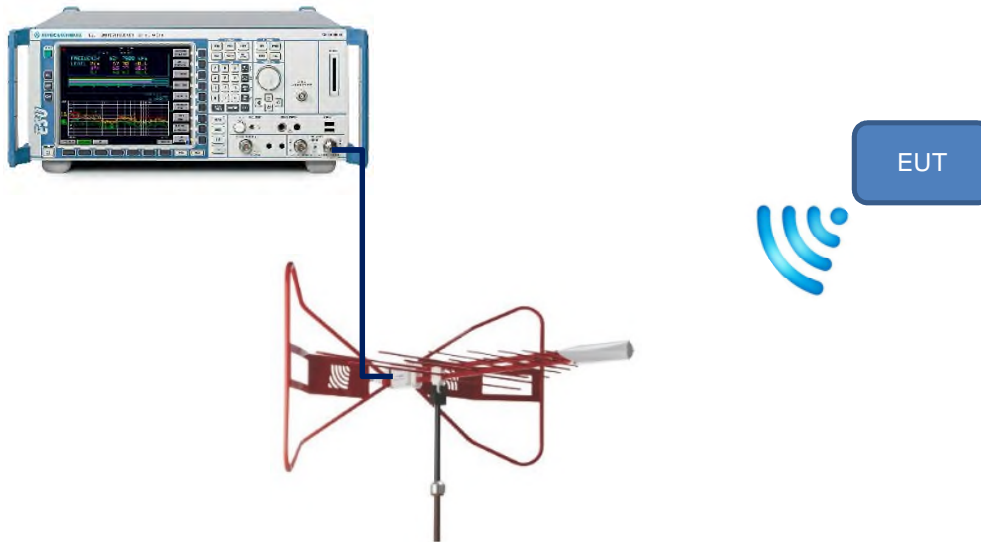
| Manufacturer | Equipment/Cable | Model | Description |
|--------------|-----------------|-------|-------------|
| | | | |
| | | | |

1.4.4 Worst Case Configuration

For radiated measurements X, and Y orientations were verified. Final measurements were performed using Y orientation (worst case).

| | | |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |
| "X" Configuration | "Y" Configuration | "Z" Configuration |

1.4.5 Simplified Test Configuration Diagram





1.5 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standards or test plan were made during testing.

1.6 MODIFICATION RECORD

| Description of Modification | Modification Fitted By | Date Modification Fitted |
|----------------------------------|------------------------|--------------------------|
| Serial Number Engineering Sample | | |
| N/A | | |

The table above details modifications made to the EUT during the test programme. The modifications incorporated during each test (if relevant) are recorded on the appropriate test pages.

1.7 TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

1.8 TEST FACILITY LOCATION

1.8.1 TÜV SÜD America Inc. (Mira Mesa)

10040 Mesa Rim Road, San Diego, CA 92121-2912 (32.901268,-117.177681). Phone: 858 678 1400 FAX: 858-546 0364

1.8.2 TÜV SÜD America Inc. (Rancho Bernardo)

Sony Electronics Inc., Building #8 16530 Via Esprillo, San Diego, CA 92127-1708 (33.018644,-117.092409). Phone: 858 942 5542 FAX: 858-546 0364

1.9 TEST FACILITY REGISTRATION

1.9.1 FCC – Registration No.: US1146

TUV SUD America Inc. (San Diego), is an accredited test facility with the site description report on file and has met all the requirements specified in §2.948 of the FCC rules. The acceptance letter from the FCC is maintained in our files and the Registration is US1146.

1.9.2 Industry Canada (IC) Registration No.: 3067A

The 10m Semi-anechoic chamber of TUV SUD America Inc. (San Diego) has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No. 3067A.



SECTION 2

2TEST DETAILS

Radio Testing of the
Stahl- und Apparatebau Hans Leffer GmbH & Co. KG
E2016/5 Remote Control Transmitter / Transceiver



2.1 20 dB BANDWIDTH

2.1.1 Specification Reference

FCC 47 CFR Part 15, Clause 15.215(c)

2.1.2 Standard Applicable

(c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

2.1.3 Equipment Under Test and Modification State

Serial No: Engineering Sample / Default Test Configuration

2.1.4 Date of Test/Initial of test personnel who performed the test

August 01, 2016/JMG

2.1.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Mira Mesa facility

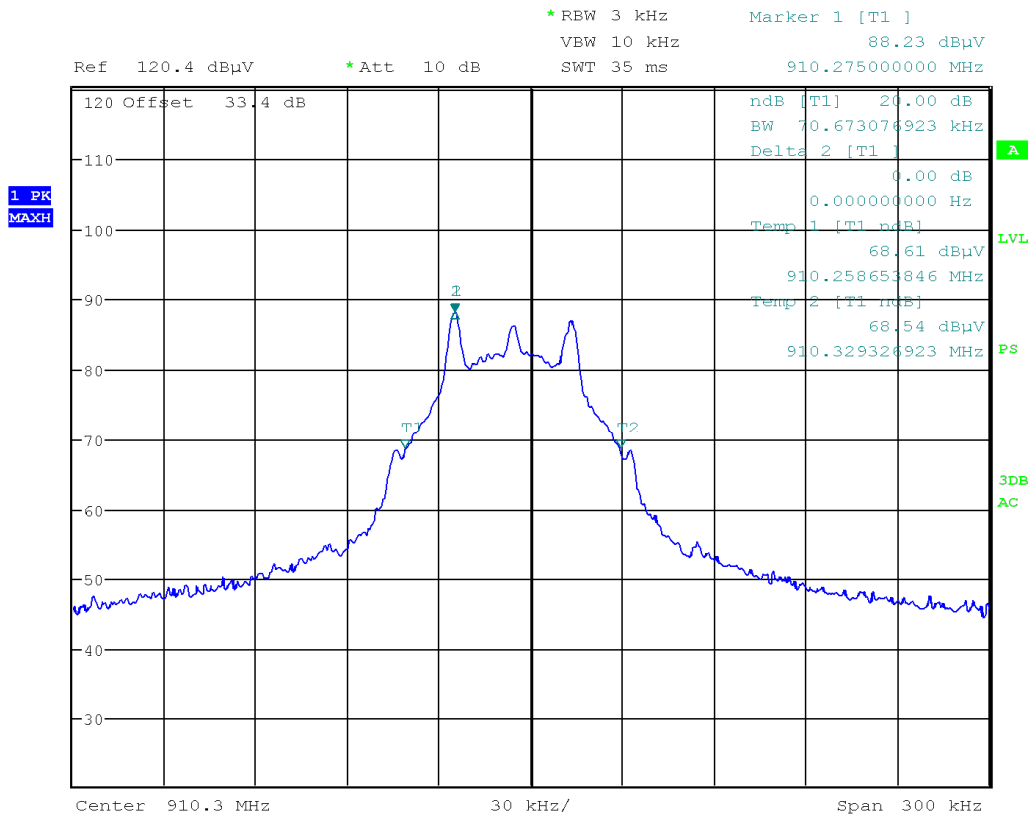
| | |
|---------------------|----------|
| Ambient Temperature | 24.1°C |
| Relative Humidity | 51.2% |
| ATM Pressure | 98.9 kPa |

2.1.7 Additional Observations

- This is a radiated test.
- “n dB down” marker function of the Spectrum Analyzer used.
- Span is wide enough to capture the channel transmission.
- RBW is 1% of the Span, VBW is 3XRBW.
- An offset of 33.4 dB was added to compensate antenna CF and cable losses.
- Sweep is auto.
- Detector is peak.
- Trace is max hold.

2.1.8 Test Results

| Channel | Frequency (MHz) | 20dB Bandwidth (kHz) |
|-------------|-----------------|----------------------|
| MID Channel | 910.3 | 70.67 |



Mid Channel (910.3 MHz)

2.1.9 Test set up pictures





2.2 FIELD STRENGTH LIMITS FOR FUNDAMENTAL AND HARMONICS

2.2.1 Specification Reference

FCC 47 CFR Part 15, Clause 15.249(a)

2.2.2 Standard Applicable

(a) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

| Fundamental frequency | Field strength of fundamental (millivolts/meter) | Field strength of fundamental (dBμV/m) | Field strength of harmonics (microvolts/meter) | Field strength of harmonics (dBμV/m) |
|-----------------------|--------------------------------------------------|----------------------------------------|------------------------------------------------|--------------------------------------|
| 902–928 MHz | 50 | 93.98 | 500 | 53.98 |
| 2400–2483.5 MHz | 50 | 93.98 | 500 | 53.98 |
| 5725–5875 MHz | 50 | 93.98 | 500 | 53.98 |
| 24.0–24.25 GHz | 250 | 107.96 | 2500 | 67.96 |

The field strength limits in paragraphs (a) of this section are based on average limits.

2.2.3 Equipment Under Test and Modification State

Serial No: Engineering Sample / Default Test Configuration

2.2.4 Date of Test/Initial of test personnel who performed the test

August 01-02, 2016/JMG

2.2.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.2.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Mira Mesa facility

| | | |
|---------------------|----------|----------|
| Ambient Temperature | 24.1°C | 23.5°C |
| Relative Humidity | 51.2% | 53.2% |
| ATM Pressure | 98.9 kPa | 99.1 kPa |

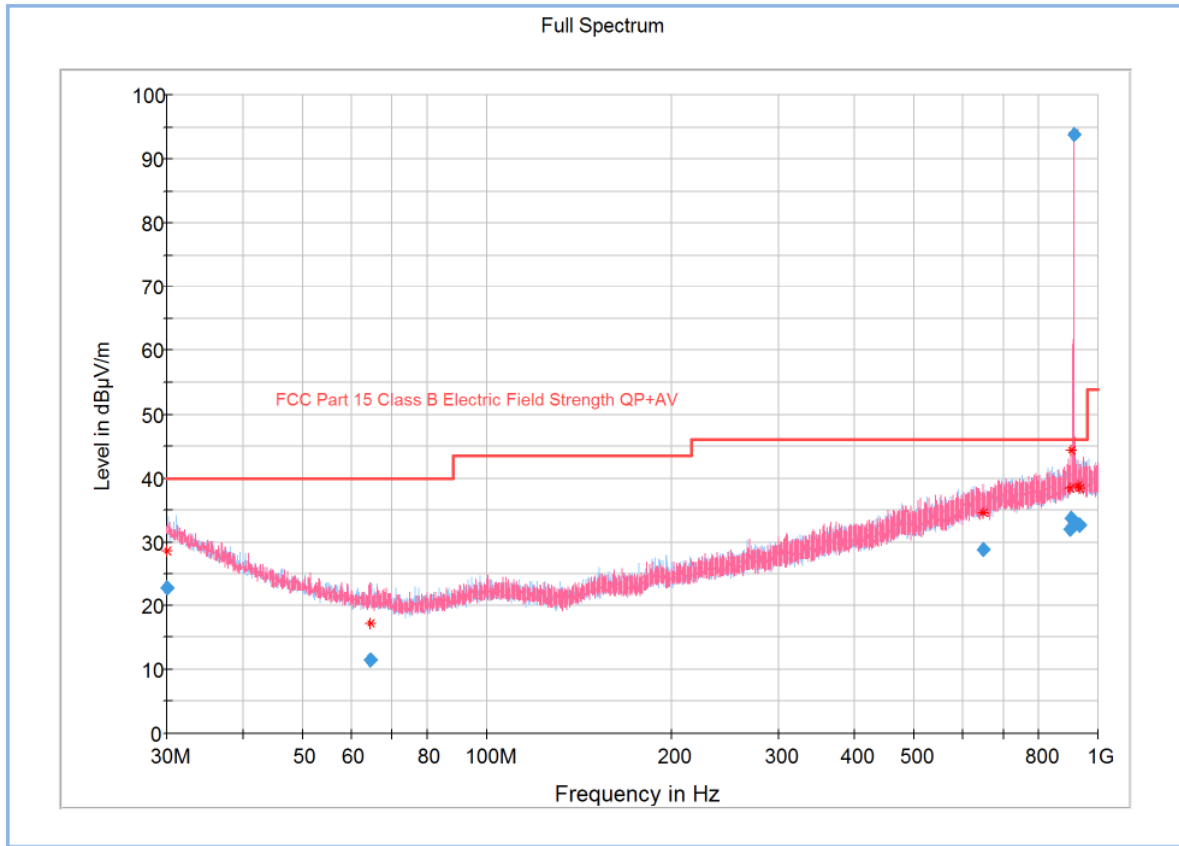
2.2.7 Additional Observations

- This is a radiated test. The spectrum was searched from 1GHz to at least the 10th harmonic (10GHz).
- Measurement was done using EMC32 V9.26.0 automated software. Reported level is the actual level with all the correction factors factored in. Correction Factor column is for informational purposes only. See Section 2.2.8 for sample computation.

2.2.8 Sample Computation (Radiated Emission)

| | | | |
|-------------------------------------------------------|----------------------------|-------|-------|
| Measuring equipment raw measurement (dbμV) @ 30 MHz | | | 24.4 |
| Correction Factor (dB) | Asset# 1066 (cable) | 0.3 | -12.6 |
| | Asset# 1172 (cable) | 0.3 | |
| | Asset# 1016 (preamplifier) | -30.7 | |
| | Asset# 1175(cable) | 0.3 | |
| | Asset# 1033 (antenna) | 17.2 | |
| Reported QuasiPeak Final Measurement (dbμV/m) @ 30MHz | | | 11.8 |

2.2.9 Test Results for Mid Channel 910.3MHz below 1GHz (Fundamental, Band Edges and Immediate Restricted Bands)

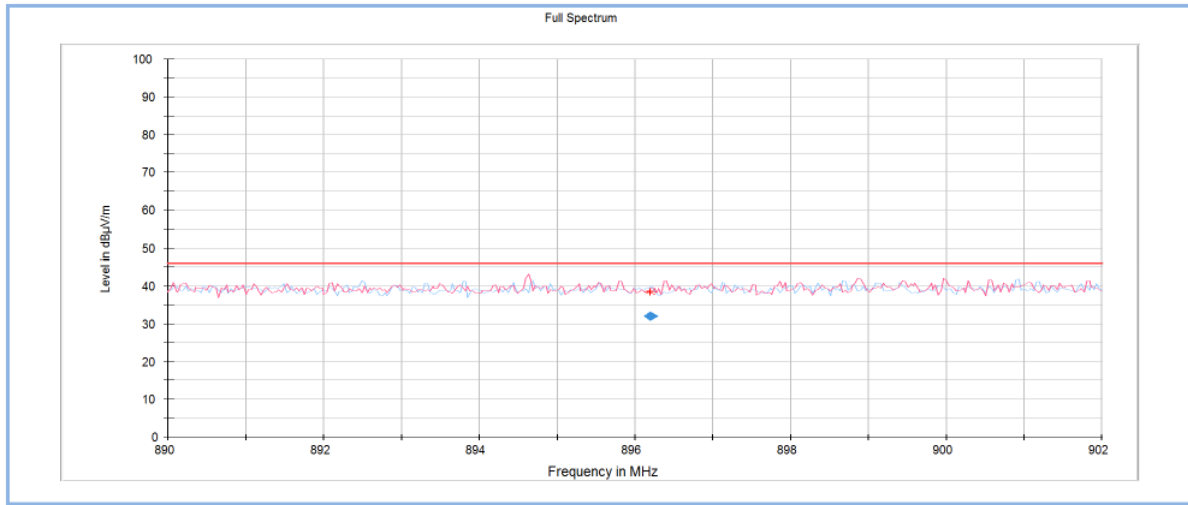


Final Result

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-------------------|--------------------|----------------|-------------|-----------------|-----------------|--------------|----------|---------------|-------------|--------------------|
| 30.000000 | 22.80 | 40.00 | 17.20 | 1000.0 | 120.000 | 140.4 | H | 181.0 | 25.0 | |
| 64.470667 | 11.48 | 40.00 | 28.52 | 1000.0 | 120.000 | 150.0 | H | 187.0 | 14.0 | |
| 649.646333 | 28.89 | 46.00 | 17.11 | 1000.0 | 120.000 | 204.8 | V | 249.0 | 29.4 | |
| 896.185667 | 32.10 | 46.00 | 13.90 | 1000.0 | 120.000 | 324.4 | V | 128.0 | 32.9 | |
| 903.116000 | 33.72 | 46.00 | 12.28 | 1000.0 | 120.000 | 106.1 | V | 46.0 | 33.2 | |
| 910.299667 | 93.90 | 94.00 | 0.10 | 1000.0 | 120.000 | 106.6 | V | 237.0 | 33.4 | Fundamental |
| 929.793333 | 32.79 | 46.00 | 13.21 | 1000.0 | 120.000 | 167.1 | H | 303.0 | 33.5 | |
| 929.793333 | 32.79 | 46.00 | 13.21 | 1000.0 | 120.000 | 167.1 | H | 303.0 | 33.5 | |

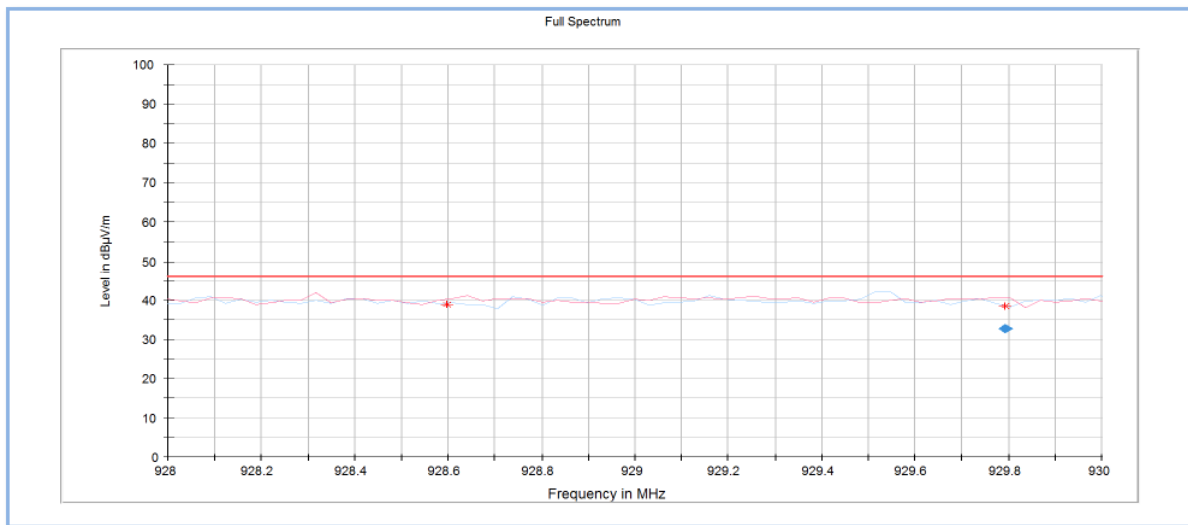
Test Notes: All spurious emissions complies with the general requirement of 15.209 and 15.249. The fundamental complies with 15.249.

Test Results Mid Channel 910.3 MHz (Band Edges)



Low Band Edge

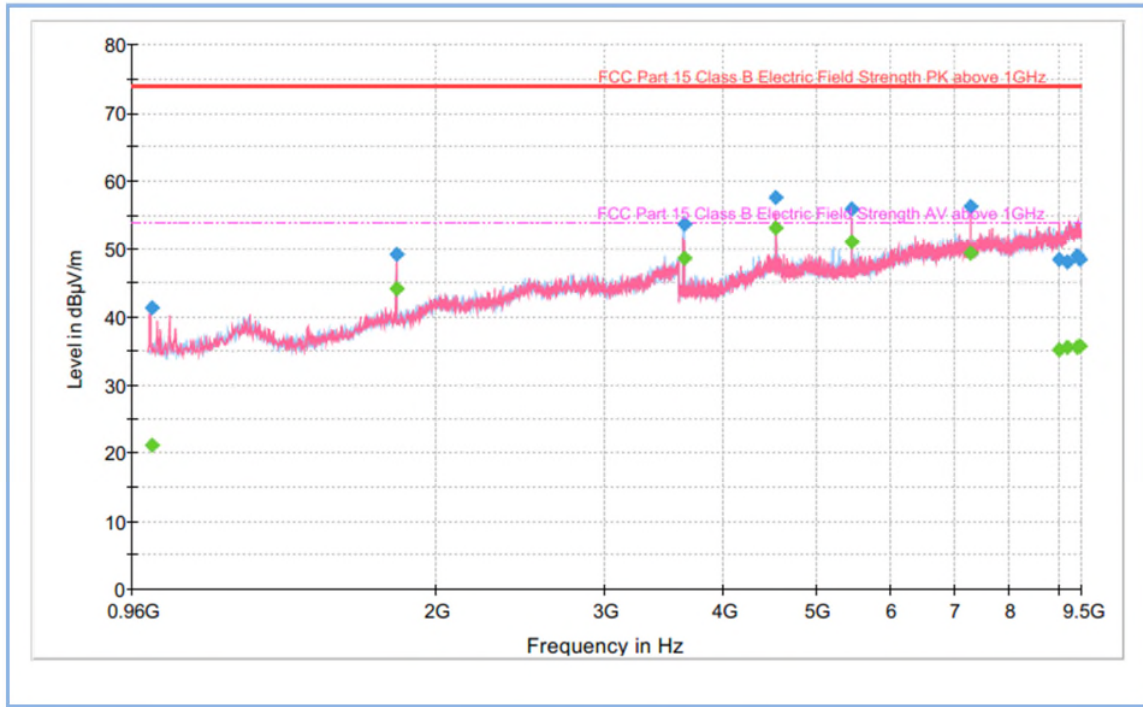
| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| 896.185667 | 32.10 | 46.00 | 13.90 | 1000.0 | 120.000 | 324.4 | V | 128.0 | 32.9 | |



High Band Edge

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| 929.793333 | 32.79 | 46.00 | 13.21 | 1000.0 | 120.000 | 167.1 | H | 303.0 | 33.5 | |

Test Results for mid Channel 910.3 MHz above 1GHz (Harmonics)



Final Result PK+

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| 1008.600000 | 41.25 | 73.90 | 32.65 | 1000.0 | 1000.000 | 215.4 | V | 90.0 | -1.9 | |
| 1820.400000 | 49.10 | 73.90 | 24.80 | 1000.0 | 1000.000 | 301.9 | V | 233.0 | 2.2 | |
| 3641.100000 | 53.67 | 73.90 | 20.23 | 1000.0 | 1000.000 | 189.8 | H | 331.0 | 7.0 | |
| 4551.500000 | 57.66 | 73.90 | 16.24 | 1000.0 | 1000.000 | 150.3 | V | 263.0 | 10.9 | |
| 5461.800000 | 55.98 | 73.90 | 17.92 | 1000.0 | 1000.000 | 135.7 | H | 350.0 | 11.4 | |
| 7282.100000 | 56.31 | 73.90 | 17.59 | 1000.0 | 1000.000 | 122.4 | V | 3.0 | 14.6 | |
| 9016.500000 | 48.48 | 73.90 | 25.42 | 1000.0 | 1000.000 | 150.2 | V | 268.0 | 16.6 | |
| 9202.600000 | 48.08 | 73.90 | 25.82 | 1000.0 | 1000.000 | 405.9 | V | 12.0 | 17.1 | |
| 9390.500000 | 48.93 | 73.90 | 24.97 | 1000.0 | 1000.000 | 311.5 | H | 143.0 | 17.5 | |
| 9483.300000 | 48.46 | 73.90 | 25.44 | 1000.0 | 1000.000 | 154.3 | H | 72.0 | 17.6 | |
| 11105.900000 | 51.53 | 73.90 | 22.37 | 1000.0 | 1000.000 | 410.2 | H | 332.0 | 20.6 | |
| 16582.000000 | 57.90 | 73.90 | 16.00 | 1000.0 | 1000.000 | 250.0 | H | 266.0 | 26.8 | |

Final Result AVG

| Frequency (MHz) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| 1008.600000 | 21.12 | 53.90 | 32.78 | 1000.0 | 1000.000 | 215.4 | V | 90.0 | -1.9 | |
| 1820.400000 | 44.11 | 53.90 | 9.79 | 1000.0 | 1000.000 | 301.9 | V | 233.0 | 2.2 | |
| 3641.100000 | 48.68 | 53.90 | 5.22 | 1000.0 | 1000.000 | 189.8 | H | 331.0 | 7.0 | |
| 4551.500000 | 53.12 | 53.90 | 0.78 | 1000.0 | 1000.000 | 150.3 | V | 263.0 | 10.9 | |
| 5461.800000 | 51.00 | 53.90 | 2.90 | 1000.0 | 1000.000 | 135.7 | H | 350.0 | 11.4 | |
| 7282.100000 | 49.42 | 53.90 | 4.48 | 1000.0 | 1000.000 | 122.4 | V | 3.0 | 14.6 | |
| 9016.500000 | 35.23 | 53.90 | 18.67 | 1000.0 | 1000.000 | 150.2 | V | 268.0 | 16.6 | |
| 9202.600000 | 35.51 | 53.90 | 18.39 | 1000.0 | 1000.000 | 405.9 | V | 12.0 | 17.1 | |
| 9390.500000 | 35.59 | 53.90 | 18.31 | 1000.0 | 1000.000 | 311.5 | H | 143.0 | 17.5 | |
| 9483.300000 | 35.68 | 53.90 | 18.22 | 1000.0 | 1000.000 | 154.3 | H | 72.0 | 17.6 | |
| 11105.900000 | 38.59 | 53.90 | 15.31 | 1000.0 | 1000.000 | 410.2 | H | 332.0 | 20.6 | |
| 16582.000000 | 45.09 | 53.90 | 8.81 | 1000.0 | 1000.000 | 250.0 | H | 266.0 | 26.8 | |

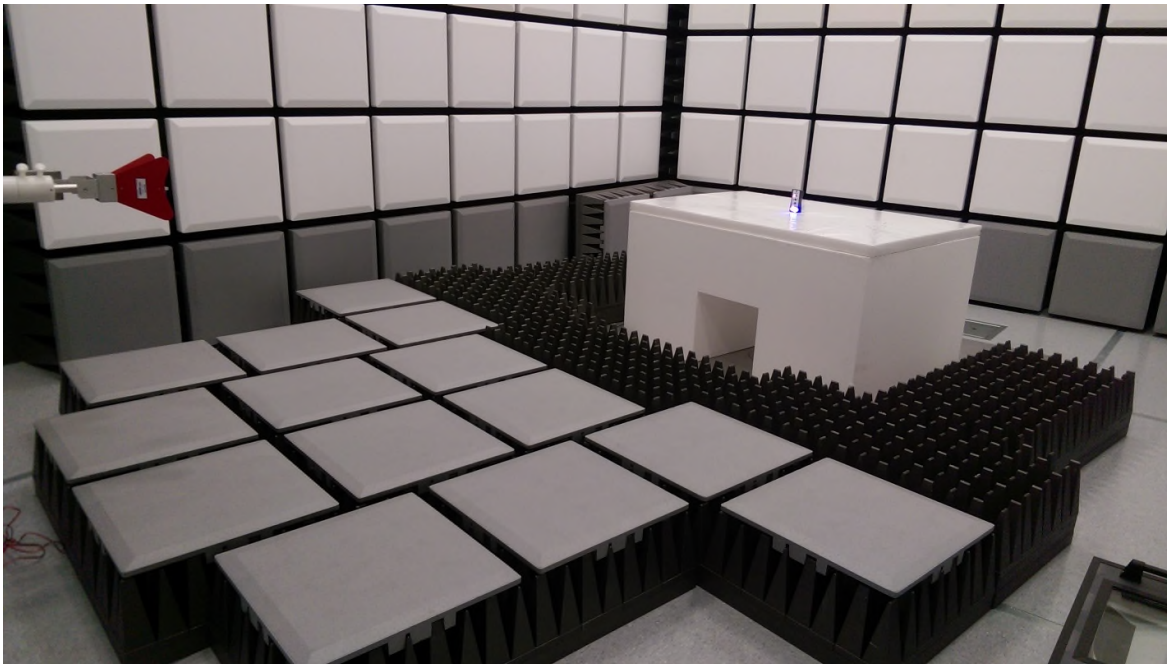
Test Notes: All harmonics complies with the general requirement of 15.209.

2.2.10 Test set up pictures

Below 1 GHZ



Above 1 GHz





2.3 RADIATED SPURIOUS EMISSIONS

2.3.1 Specification Reference

FCC 47 CFR Part 15, Clause 15.249(d)

2.3.2 Standard Applicable

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

2.3.3 Equipment Under Test and Modification State

Serial No: Engineering Sample / Default Test Configuration

2.3.4 Date of Test/Initial of test personnel who performed the test

August 01, 2016/JMG

2.3.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.3.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Mira Mesa facility

| | |
|---------------------|----------|
| Ambient Temperature | 24.1°C |
| Relative Humidity | 51.2% |
| ATM Pressure | 98.9 kPa |

2.3.7 Additional Observations

- This is a radiated test. The spectrum was searched from 30MHz to at least the 10th harmonic (10GHz).
- The measurement results are identical to test results presented under Section 2.2.9 of this test report. No other significant spurious emissions observed other than harmonics of the fundamental frequency.



SECTION 3

3 TEST EQUIPMENT USED

3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

| ID Number (SDGE/SDRB) | Test Equipment | Type | Serial Number | Manufacturer | Cal Date | Cal Due Date |
|--------------------------|--------------------------------------|-----------|---------------|-----------------|----------|--------------|
| Radiated Test Setup | | | | | | |
| 1002 | Bilog Antenna | 3142C | 00058717 | ETS-Lindgren | 11/06/15 | 11/06/17 |
| 7631 | Double-ridged waveguide horn antenna | 3117 | 00205418 | EMCO | 02/04/16 | 07/05/16 |
| 08891 | Pre-amplifier 1-18GHz | PE15A3262 | 1012 | Pasternack | 04/29/16 | 04/29/16 |
| 7620 | EMI Test Receiver | ESU | 100399 | Rhode & Schwarz | 08/24/15 | 08/24/15 |
| Miscellaneous | | | | | | |
| | Test Software | EMC32 | V9.26.0 | Rhode & Schwarz | N/A | |

3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:

3.2.1 Radiated Emission Measurements (Below 1GHz)

| Contribution | | Probability Distribution Type | Probability Distribution x_i | Standard Uncertainty $u(x_i)$ | $[u(x_i)]^2$ |
|---------------------------------|----------------------------|-------------------------------|--------------------------------|-------------------------------|--------------|
| 1 | Receiver/Spectrum Analyzer | Rectangular | 0.45 | 0.26 | 0.07 |
| 2 | Cables | Rectangular | 0.50 | 0.29 | 0.08 |
| 3 | Preamp | Rectangular | 0.50 | 0.29 | 0.08 |
| 4 | Antenna | Rectangular | 0.75 | 0.43 | 0.19 |
| 5 | Site | Rectangular | 3.55 | 2.05 | 4.20 |
| 6 | EUT Setup | Rectangular | 1.00 | 0.58 | 0.33 |
| Combined Uncertainty (u_c): | | | | | 2.23 |
| Coverage Factor (k): | | | | | 2 |
| Expanded Uncertainty: | | | | | 4.45 |

3.2.2 Radiated Emission Measurements (Above 1GHz)

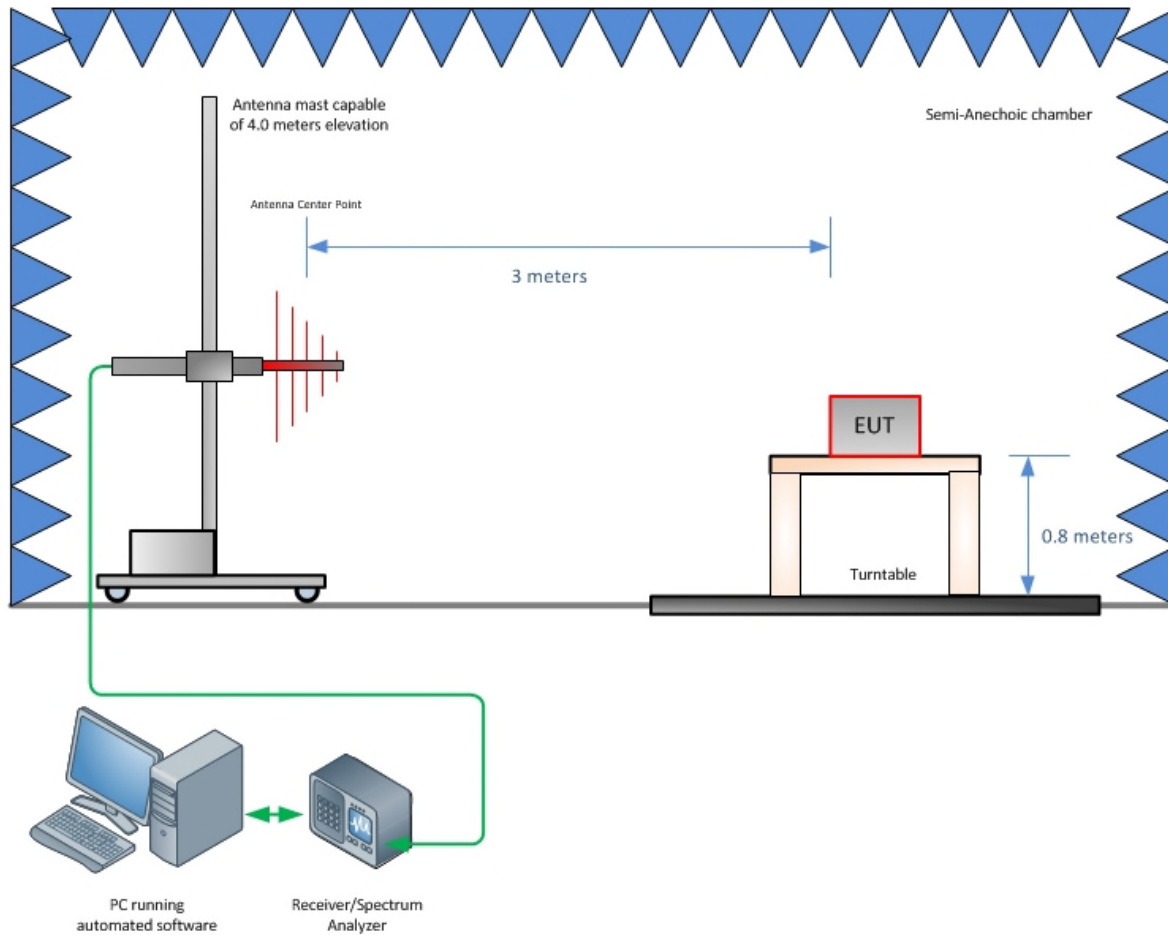
| Contribution | | Probability Distribution Type | Probability Distribution x_i | Standard Uncertainty $u(x_i)$ | $[u(x_i)]^2$ |
|---------------------------------|----------------------------|-------------------------------|--------------------------------|-------------------------------|--------------|
| 1 | Receiver/Spectrum Analyzer | Rectangular | 0.57 | 0.33 | 0.11 |
| 2 | Cables | Rectangular | 0.70 | 0.40 | 0.16 |
| 3 | Preamp | Rectangular | 0.50 | 0.29 | 0.08 |
| 4 | Antenna | Rectangular | 0.37 | 0.21 | 0.05 |
| 5 | Site | Rectangular | 3.55 | 2.05 | 4.20 |
| 6 | EUT Setup | Rectangular | 1.00 | 0.58 | 0.33 |
| Combined Uncertainty (u_c): | | | | | 2.22 |
| Coverage Factor (k): | | | | | 2 |
| Expanded Uncertainty: | | | | | 4.44 |



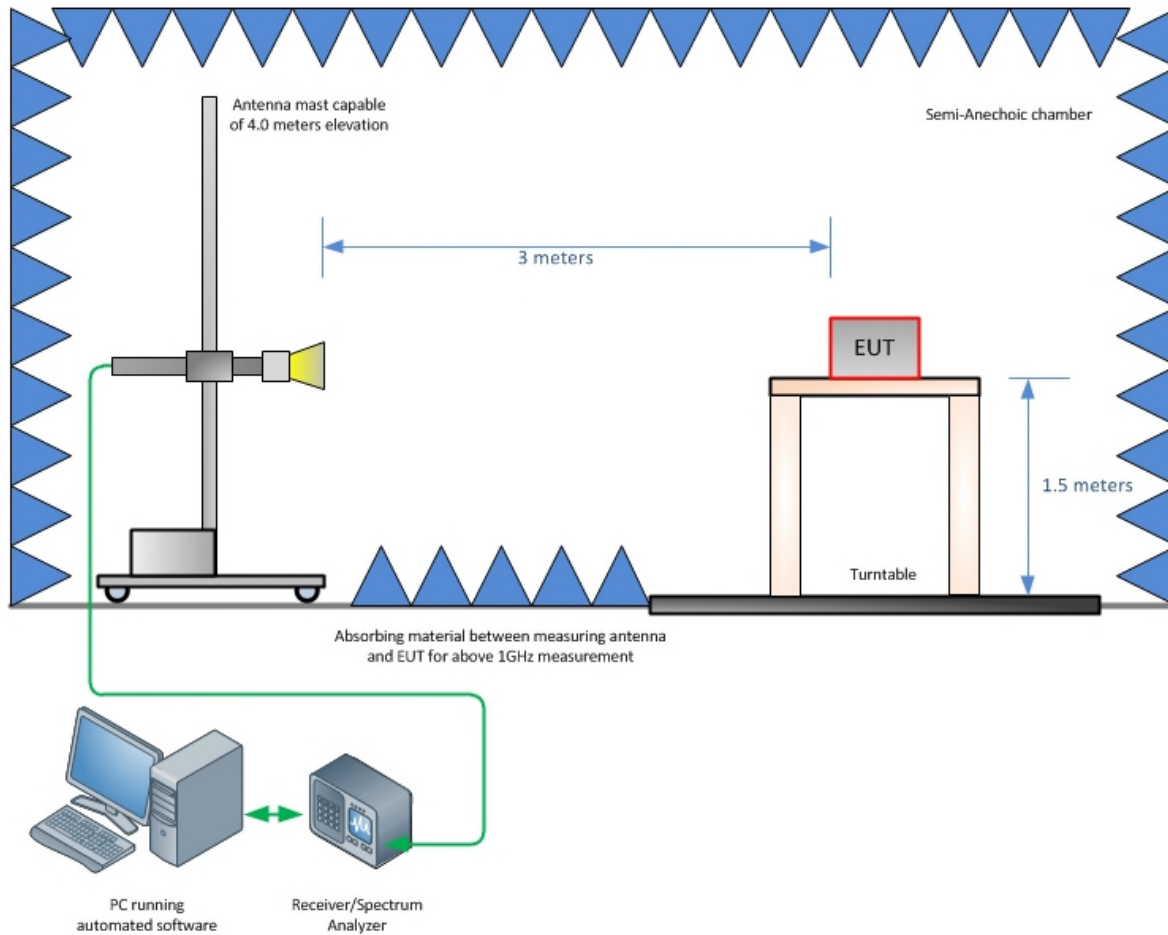
SECTION 4

4DIAGRAM OF TEST SETUP

4.1 RADIATED EMISSION TEST SETUP (BELOW 1GHZ)



4.2 RADIATED EMISSION TEST SETUP (ABOVE 1GHZ)





SECTION 5

5ACCREDITATION, DISCLAIMERS AND COPYRIGHT



5.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

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