

# Test report

## FCC-15.247 and RSS-247 DTS ESTeem 217ES #320137

Date of issue: February 7, 2017

Applicant: Electronic Systems Technology, Inc.

Product: Wireless Modem (902-928 MHz)

Model: 217ES

FCC ID: ENPEDG217ES

IC Registration number: 2163A-217ES

### Specifications:

#### ◆ FCC 47 CFR Part 15 Subpart C, §15.247

Operation in the 902–928 MHz, 2400–2483.5 MHz, 5725–5850 MHz

#### ◆ RSS-247, Issue 1, May 2015

Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

#### Test location

|              |                             |
|--------------|-----------------------------|
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| Province     | California                  |
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| Country      | USA                         |
| Telephone    | +1 760 444 3500             |
| Website      | www.nemko.com               |
| Site number  | FCC: US5058; IC: 2040B      |

|                    |                                 |
|--------------------|---------------------------------|
| Tested by          | Feng You, Sr. Wireless Engineer |
| Reviewed by        | James Morris                    |
| Review date        | February 7, 2017                |
| Reviewer signature | <i>James E Morris</i>           |

#### Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko USA's ISO/IEC 17025 accreditation.

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## Section 1. Report summary

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### 1.1 Applicant and manufacturer

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|                 |                                     |
|-----------------|-------------------------------------|
| Company name    | Electronic Systems Technology, Inc. |
| Address         | 415 N. Quay Street, Bldg. B-1       |
| City            | Kennewick                           |
| Province/State  | WA                                  |
| Postal/Zip code | 99336                               |
| Country         | U.S.A.                              |

### 1.2 Test specifications

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|                                              |                                                                                                                              |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| FCC 47 CFR Part 15, Subpart C, Clause 15.247 | Operation in the 902–928 MHz, 2400–2483.5 MHz, 5725–5850 MHz                                                                 |
| RSS-247, Issue 1                             | Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices |

### 1.3 Test methods

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|                  |                                                                                                                                                                      |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANSI C64.3-2014  | American National Standard for Methods of Measurement of Radio- Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz |
| ANSI C63.10-2013 | American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices                                                                       |

### 1.4 Statement of compliance

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In the configuration tested, the EUT was found compliant.

Testing was completed against all relevant requirements of the test standard. Results obtained indicate that the product under test complies in full with the requirements tested. The test results relate only to the items tested.

See “Summary of test results” for full details.

### 1.5 Exclusions

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None

### 1.6 Test report revision history

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| Revision # | Details of changes made to test report |
|------------|----------------------------------------|
| 1          | Original report issued                 |

## Section 2. Summary of test results

### 2.1 FCC Part 15 Subpart C, general requirements test results

| Part       | Test description              | Verdict           |
|------------|-------------------------------|-------------------|
| §15.207(a) | Conducted limits              | Pass              |
| §15.31(e)  | Variation of power source     | Pass              |
| §15.203    | Antenna requirement           | Pass <sup>1</sup> |
| §15.205    | Restricted bands of operation | Pass              |

Notes: <sup>1</sup> The EUT uses a unique antenna coupling: R-TNC.

### 2.2 FCC Part 15 Subpart C, intentional radiators test results

| Part               | Test description                                                                                                           | Verdict        |
|--------------------|----------------------------------------------------------------------------------------------------------------------------|----------------|
| §15.247(a)(1)      | 20 dB bandwidth of the hopping channel                                                                                     | Not applicable |
| §15.247(a)(1)(i)   | Frequency hopping systems operating in the 902–928 MHz band                                                                | Not applicable |
| §15.247(a)(1)(ii)  | Frequency hopping systems operating in the 5725–5850 MHz band                                                              | Not applicable |
| §15.247(a)(1)(iii) | Frequency hopping systems operating in the 2400–2483.5 MHz band                                                            | Not applicable |
| §15.247(a)(2)      | Minimum 6 dB bandwidth for systems using digital modulation techniques                                                     | Pass           |
| §15.247(b)(1)      | Maximum peak output power of frequency hopping systems operating in the 2400–2483.5 MHz band and 5725–5850 MHz band        | Not applicable |
| §15.247(b)(2)      | Maximum peak output power of Frequency hopping systems operating in the 902–928 MHz band                                   | Not applicable |
| §15.247(b)(3)      | Maximum peak output power of systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands | Pass           |
| §15.247(c)(1)      | Fixed point-to-point operation with directional antenna gains greater than 6 dBi                                           | Not applicable |
| §15.247(c)(2)      | Transmitters operating in the 2400–2483.5 MHz band that emit multiple directional beams                                    | Not applicable |
| §15.247(d)         | Spurious emissions                                                                                                         | Pass           |
| §15.247(e)         | Power spectral density for digitally modulated devices                                                                     | Pass           |
| §15.247(f)         | Time of occupancy for hybrid systems                                                                                       | Not applicable |

### 2.3 IC RSS-GEN, Issue 4, test results

| Part  | Test description                                                         | Verdict        |
|-------|--------------------------------------------------------------------------|----------------|
| 7.1.2 | Receiver radiated emission limits                                        | Not applicable |
| 7.1.3 | Receiver conducted emission limits                                       | Not applicable |
| 8.8   | Power Line Conducted Emissions Limits for Licence-Exempt Radio Apparatus | Pass           |
| 8.10  | Restricted Frequency Bands                                               | Pass           |

Notes: <sup>1</sup> According to sections 5.2 and 5.3 of RSS-Gen, Issue 4 the EUT does not have a stand-alone receiver neither scanner receiver, therefore exempt from receiver requirements.

## 2.4 IC RSS-247, Issue 1, test results

| Part    | Test description                                                                       | Verdict        |
|---------|----------------------------------------------------------------------------------------|----------------|
| 5.1     | Frequency hopping systems (FHSs)                                                       |                |
| 5.1 (1) | Bandwidth of a frequency hopping channel                                               | Not applicable |
| 5.1 (2) | Minimum channel spacing for frequency hopping systems                                  | Not applicable |
| 5.1 (3) | Frequency hopping systems operating in the 902–928 MHz band                            | Not applicable |
| 5.1 (4) | Frequency hopping systems operating in the 2400–2483.5 MHz band                        | Not applicable |
| 5.1 (5) | Frequency hopping systems operating in the 5725–5850 MHz band                          | Not applicable |
| 5.2     | Digital modulation systems                                                             |                |
| 5.2 (1) | Minimum 6 dB bandwidth                                                                 | Pass           |
| 5.2 (2) | Maximum power spectral density                                                         | Pass           |
| 5.3     | Hybrid systems                                                                         |                |
| 5.3 (1) | Digital modulation turned off                                                          | Not applicable |
| 5.3 (2) | Frequency hopping turned off                                                           | Not applicable |
| 5.4     | Transmitter output power and e.i.r.p. requirements                                     |                |
| 5.4 (1) | Frequency hopping systems operating in the 902–928 MHz band                            | Not applicable |
| 5.4 (2) | Frequency hopping systems operating in the 2400–2483.5 MHz band                        | Not applicable |
| 5.4 (3) | Frequency hopping systems operating in the 5725–5850 MHz                               | Not applicable |
| 5.4 (4) | Systems employing digital modulation techniques                                        | Pass           |
| 5.4 (5) | Point-to-point systems in 2400–2483.5 MHz and 5725–5850 MHz band                       | Not applicable |
| 5.4 (6) | Transmitters which operate in the 2400–2483.5 MHz band with multiple directional beams | Not applicable |
| 5.5     | Unwanted Emissions                                                                     | Pass           |

## Section 3. Equipment under test (EUT) details

### 3.1 Sample information

|                        |                   |
|------------------------|-------------------|
| Receipt date           | December 19, 2016 |
| Nemko sample ID number | 320137-1          |

### 3.2 EUT information

|                        |                              |
|------------------------|------------------------------|
| Product name           | Wireless Modem (902-928 MHz) |
| Model                  | Edge 900 217ES               |
| Model variant          | N/A                          |
| Serial number          | D-25120                      |
| FCC ID                 | ENPEDG217ES                  |
| IC Registration Number | 2163A-217ES                  |

### 3.3 Technical information

|                                                      |                                                                                                                        |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Applicant IC company number                          | 2163A                                                                                                                  |
| IC UPN number                                        | 217ES                                                                                                                  |
| All used IC test site(s) Reg. number                 | 2040B                                                                                                                  |
| RSS number and Issue number                          | RSS-247, Issue 1, May 2015                                                                                             |
| Frequency band                                       | 902-928 MHz                                                                                                            |
| Frequency Min (MHz)                                  | 904.1                                                                                                                  |
| Frequency Max (MHz)                                  | 925.7                                                                                                                  |
| RF power Min (W), <a href="#">Conducted/ERP/EIRP</a> | N/A                                                                                                                    |
| RF power Max (W), <a href="#">Conducted/ERP/EIRP</a> | 0.1079 (Conducted)                                                                                                     |
| Field strength, Units @ distance                     | N/A                                                                                                                    |
| Measured BW (kHz) ( <a href="#">6 dB</a> )           | 1420.3                                                                                                                 |
| Calculated BW (kHz), as per TRC-43                   | N/A                                                                                                                    |
| Type of modulation                                   | FSK-4                                                                                                                  |
| Emission classification (F1D, G1D, D1D)              | W7D                                                                                                                    |
| Transmitter spurious, Units @ distance               | 46.44 dBµV/m @ 3m Peak                                                                                                 |
| Power requirements                                   | AC power Supply through PoE, 100-250V 50-60Hz to 48V DC PoE                                                            |
| Antenna information                                  | See antenna list below.<br>The EUT uses a unique antenna coupling/ non-detachable antenna to the intentional radiator. |

| AntennaType | Model                 | ESTeemPart# | Gain (dBi) |
|-------------|-----------------------|-------------|------------|
| Yagi        | Astron Wireless 918-3 | AA203Es     | 7.15       |
| Omni        | PCTEL MFB9155         | AA20ES900   | 7.15       |
| Whip        | ESTeem AA20DMEs       | AA20DMEs    | 2          |

Same power level for all 3 antenna types.

### 3.4 Product description and theory of operation

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EUT is 900MHz DTS wireless modem.

### 3.5 EUT exercise details

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A test software was used that allows the change of different RF modes/channels. EUT is set to fixed channel test mode with modulation.

TX Power Low, Power Offset -6

### 3.6 EUT setup diagram

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*Setup Photo in separate exhibit for confidentiality reason*

**Figure 3.6-1: Radiated Emissions Test Setup – below 1GHz**

*Setup Photo in separate exhibit for confidentiality reason*

**Figure 3.6-2: Radiated Emissions Test Setup – above 1GHz**

*Setup Photo in separate exhibit for confidentiality reason*

**Figure 3.6-3: AC Powerline Conducted Emissions Setup**

### 3.7 EUT sub assemblies

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**Table 3.7-1: EUT sub assemblies**

| Description    | Brand name            | Model/Part number   | Serial number |
|----------------|-----------------------|---------------------|---------------|
| EUT            | ESTeem                | Edge 900MHz / 217ES | D-25120       |
| PoE Supply     | SL Power Electronics  | PW183RB4800F01      | N/A           |
| Ethernet Cable | ESTEEM                | 7ft AA09.2          | N/A           |
| Yagi Antenna   | Astron Wireless 918-3 | AA203Es             | N/A           |
| Omni Antenna   | PCTEL MFB9155         | AA20ES900           | N/A           |
| Whip Antenna   | ESTeem AA20DMEs       | AA20DMEs            | N/A           |

## Section 4. Engineering considerations

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### 4.1 Modifications incorporated in the EUT

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There were no modifications performed to the EUT during this assessment.

### 4.2 Technical judgment

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None.

### 4.3 Deviations from laboratory tests procedures

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No deviations were made from laboratory procedures.

## Section 5. Test conditions

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### 5.1 Atmospheric conditions

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|                   |               |
|-------------------|---------------|
| Temperature       | 15–30 °C      |
| Relative humidity | 20–75 %       |
| Air pressure      | 860–1060 mbar |

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

### 5.2 Power supply range

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The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages  $\pm 5\%$ , for which the equipment was designed.  
120VAC 60Hz

## Section 6. Measurement uncertainty

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### 6.1 Uncertainty of measurement

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Measurement uncertainty budgets for the tests are detailed below. Measurement uncertainty calculations assume a coverage factor of  $K = 2$  with 95% certainty.

| Test name                         | Measurement uncertainty, dB |
|-----------------------------------|-----------------------------|
| All antenna port measurements     | 0.55                        |
| Conducted spurious emissions      | 1.13                        |
| Radiated spurious emissions       | 3.78                        |
| AC power line conducted emissions | 3.55                        |

## Section 7. Test equipment

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### 7.1 Test equipment list

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*Table 7.1-1: Equipment list*

| Asset Tag | Description                        | Manufacturer    | Model    | Serial # | Next Cal    |
|-----------|------------------------------------|-----------------|----------|----------|-------------|
| 529       | Antenna, DRWG                      | EMCO            | 3115     | 2505     | 01-Feb-2017 |
| 815       | Multimeter                         | Fluke           | 111      | 78130066 | 02-Feb-2017 |
| E1019     | Two Line V-Network                 | Rohde & Schwarz | ENV216   | 101045   | 15-Jun-2017 |
| E1035     | Variac (Variable Transformer) 3KVA | Shanghai China  | TDGC     | N/A      | VOU         |
| 1480      | Antenna, Bilog                     | Schaffner-Chase | CBL6111C | 2572     | 21-Jul-2017 |
| E1120     | Signal and Spectrum Analyzer       | Rohde & Schwarz | FSV40    | 101395   | 25-May-2017 |
| E1121     | EMI Test Receiver                  | Rohde & Schwarz | ESU 40   | 100064   | 28-Apr-2017 |
| E1026     | EMI Test Receiver 9kHz to 7GHz     | Rohde & Schwarz | ESCI 7   | 100800   | 17-Mar-2017 |

Note: NCR - no calibration required, VOU - verify on use

## Section 8. Test Data

### 8.1 FCC 15.247(a) (2) and RSS-247 5.2(1) Minimum 6 dB bandwidth

#### 8.1.1 Definitions and limits

**FCC 15.247:**

- (a) (2) Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

**IC RSS-247**

5.2 (1) The minimum 6 dB bandwidth shall be 500 kHz.

#### 8.1.2 Test summary

|               |                   |                   |           |
|---------------|-------------------|-------------------|-----------|
| Test date     | December 21, 2016 | Temperature       | 21 °C     |
| Test engineer | Feng You          | Air pressure      | 1003 mbar |
| Verdict       | Pass              | Relative humidity | 54 %      |

#### 8.1.3 Observations, settings and special notes

Spectrum analyser settings:

|                      |                                             |
|----------------------|---------------------------------------------|
| Resolution bandwidth | 1–5 % of Channel BW (no wider than 100 kHz) |
| Video bandwidth      | $\geq 3 \times \text{RBW}$                  |
| Frequency span       | 1.5 MHz                                     |
| Detector mode        | Peak                                        |
| Trace mode           | Max Hold                                    |

#### 8.1.4 Test data

**Table 8.1-1: 6 dB bandwidth results**

| Modulation | Frequency, MHz | 6dB bandwidth, kHz | Limit, kHz | Margin, kHz |
|------------|----------------|--------------------|------------|-------------|
| FSK-4      | 904.1          | 1420.3             | 500        | 920.3       |
|            | 914.9          | 1419.2             | 500        | 919.2       |
|            | 925.7          | 1381.8             | 500        | 881.8       |

Section 8  
Test name  
Specification

Testing data  
FCC 15.247(a) (2) and RSS-247 5.2(1) Minimum 6 dB bandwidth  
FCC 15 Subpart C and RSS-247, Issue 1

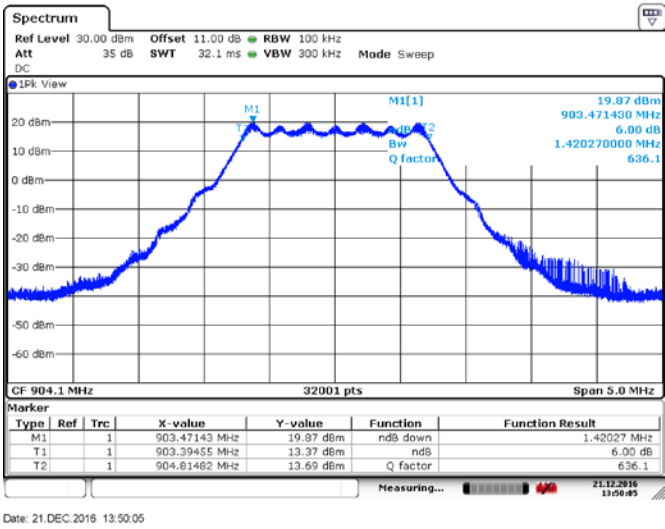


Figure 8.1-1: 6 dB bandwidth, Low CH

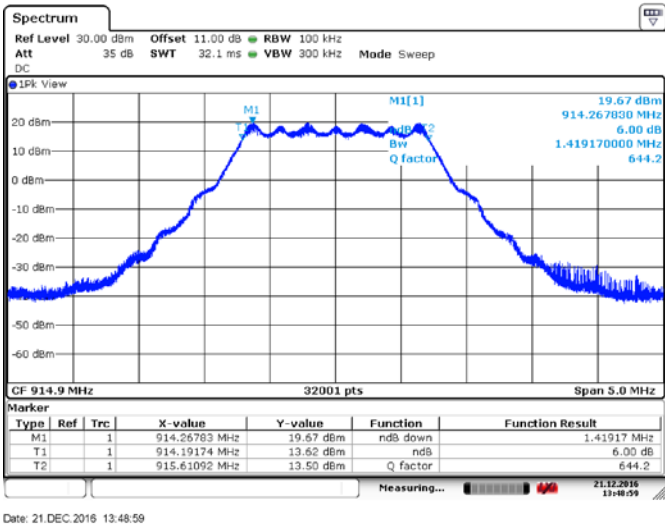


Figure 8.1-2: 6 dB bandwidth, Mid CH

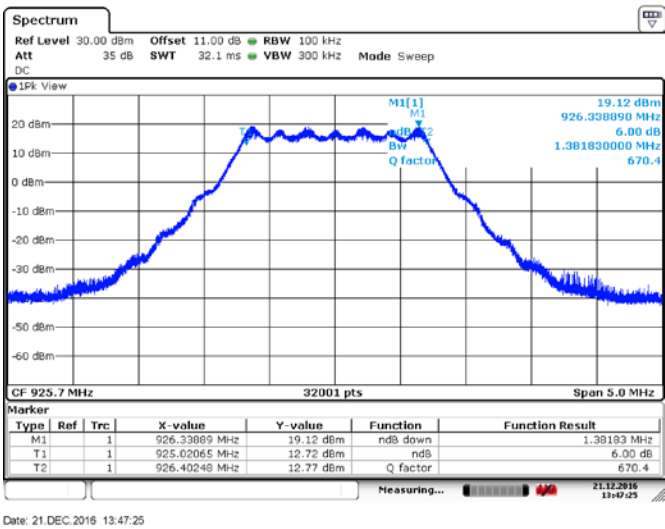


Figure 8.1-3: 6 dB bandwidth, High CH

## 8.2 FCC 15.247(b) and RSS-247 5.4 (4) Transmitter output power and e.i.r.p. requirements

### 8.2.1 Definitions and limits

**FCC:**

- (b) The maximum peak conducted output power of the intentional radiator shall not exceed the following:
- (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
  - (4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**IC:**

5.4 Transmitter Output Power and Equivalent Isotropically Radiated Power (E.I.R.P.) Requirements

- (4) For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W. Except as provided in Section 5.4(5), the e.i.r.p. shall not exceed 4 W.

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power. The maximum conducted output power is the total transmit power delivered to all antennas and antenna elements, averaged across all symbols in the signalling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or transmitting at a reduced power level. If multiple modes of operation are implemented, the maximum conducted output power is the highest total transmit power occurring in any mode.

### 8.2.2 Test summary

|               |                   |                   |           |
|---------------|-------------------|-------------------|-----------|
| Test date     | December 21, 2016 | Temperature       | 21 °C     |
| Test engineer | Feng You          | Air pressure      | 1003 mbar |
| Verdict       | Pass              | Relative humidity | 54 %      |

### 8.2.3 Observations, settings and special notes

Peak Conducted Power Measured

Spectrum analyser settings:

|                      |                     |
|----------------------|---------------------|
| Resolution bandwidth | ≥ Channel BW (3MHz) |
| Video bandwidth      | ≥ 3 × RBW (10MHz)   |
| Frequency span       | ≥ 3 × RBW (10MHz)   |
| Detector mode        | Peak                |
| Trace mode           | Max Hold            |

### 8.2.4 Test data

**Table 8.2-1: Output power measurements results**

| Power Source | Frequency, MHz | Conducted output power, dBm |       | Margin, dB | Max Antenna gain, dBi | EIRP, dBm | EIRP limit, dBm | EIRP margin, dB |
|--------------|----------------|-----------------------------|-------|------------|-----------------------|-----------|-----------------|-----------------|
|              |                | Measured                    | Limit |            |                       |           |                 |                 |
| 120V AC      | 904.1          | 20.32                       | 30    | 9.68       | 7.15                  | 27.47     | 36              | 8.53            |
|              | 914.9          | 20.28                       | 30    | 9.72       | 7.15                  | 27.43     | 36              | 8.57            |
|              | 925.7          | 19.54                       | 30    | 10.46      | 7.15                  | 26.69     | 36              | 9.31            |
| 85V AC       | 904.1          | 20.33                       | 30    | 9.67       | 7.15                  | 27.48     | 36              | 8.52            |
|              | 914.9          | 20.13                       | 30    | 9.87       | 7.15                  | 27.28     | 36              | 8.72            |
|              | 925.7          | 19.54                       | 30    | 10.46      | 7.15                  | 26.69     | 36              | 9.31            |
| 287.5V AC    | 904.1          | 20.3                        | 30    | 9.7        | 7.15                  | 27.45     | 36              | 8.55            |
|              | 914.9          | 20.15                       | 30    | 9.85       | 7.15                  | 27.3      | 36              | 8.7             |
|              | 925.7          | 19.54                       | 30    | 10.46      | 7.15                  | 26.69     | 36              | 9.31            |

## 8.3 FCC 15.247(d) and RSS-247 5.5 Spurious (out-of-band) emissions

### 8.3.1 Definitions and limits

#### FCC:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

#### IC:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

(a) Fundamental components of modulation of licence-exempt radio apparatus shall not fall within the restricted bands of Table 8.4-1 except for apparatus complying under RSS-287;

(b) Unwanted emissions that fall into restricted bands of Table 6 shall comply with the limits specified in RSS-Gen; and

(c) Unwanted emissions that do not fall within the restricted frequency bands of Table 8.4-1 shall comply either with the limits specified in the applicable RSS or with those specified in this RSS-Gen.

**Table 8.3-1: FCC §15.209 and RSS-Gen – Radiated emission limits**

| Frequency,<br>MHz | Field strength of emissions |                                 | Measurement distance, m |
|-------------------|-----------------------------|---------------------------------|-------------------------|
|                   | µV/m                        | dBµV/m                          |                         |
| 0.009–0.490       | 2400/F                      | $67.6 - 20 \times \log_{10}(F)$ | 300                     |
| 0.490–1.705       | 24000/F                     | $87.6 - 20 \times \log_{10}(F)$ | 30                      |
| 1.705–30.0        | 30                          | 29.5                            | 30                      |
| 30–88             | 100                         | 40.0                            | 3                       |
| 88–216            | 150                         | 43.5                            | 3                       |
| 216–960           | 200                         | 46.0                            | 3                       |
| above 960         | 500                         | 54.0                            | 3                       |

Notes: In the emission table above, the tighter limit applies at the band edges.

For frequencies above 1 GHz the limit on peak RF emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test

**Table 8.3-2: IC restricted frequency bands**

| MHz             | MHz                 | MHz           | GHz         |
|-----------------|---------------------|---------------|-------------|
| 0.090–0.110     | 12.51975–12.52025   | 399.9–410     | 5.35–5.46   |
| 2.1735–2.1905   | 12.57675–12.57725   | 608–614       | 7.25–7.75   |
| 3.020–3.026     | 13.36–13.41         | 960–1427      | 8.025–8.5   |
| 4.125–4.128     | 16.42–16.423        | 1435–1626.5   | 9.0–9.2     |
| 4.17725–4.17775 | 16.69475–16.69525   | 1645.5–1646.5 | 9.3–9.5     |
| 4.20725–4.20775 | 16.80425–16.80475   | 1660–1710     | 10.6–12.7   |
| 5.677–5.683     | 25.5–25.67          | 1718.8–1722.2 | 13.25–13.4  |
| 6.215–6.218     | 37.5–38.25          | 2200–2300     | 14.47–14.5  |
| 6.26775–6.26825 | 73–74.6             | 2310–2390     | 15.35–16.2  |
| 6.31175–6.31225 | 74.8–75.2           | 2655–2900     | 17.7–21.4   |
| 8.291–8.294     | 108–138             | 3260–3267     | 22.01–23.12 |
| 8.362–8.366     | 156.52475–156.52525 | 3332–3339     | 23.6–24.0   |
| 8.37625–8.38675 | 156.7–156.9         | 3345.8–3358   | 31.2–31.8   |
| 8.41425–8.41475 | 240–285             | 3500–4400     | 36.43–36.5  |
| 12.29–12.293    | 322–335.4           | 4500–5150     | Above 38.6  |

Note: Certain frequency bands listed in Table 8.3-2 and above 38.6 GHz are designated for low-power licence-exempt applications. These frequency bands and the requirements that apply to the devices are set out in this Standard

**Table 8.3-3: FCC restricted frequency bands**

| MHz               | MHz                 | MHz           | GHz         |
|-------------------|---------------------|---------------|-------------|
| 0.090–0.110       | 16.42–16.423        | 399.9–410     | 4.5–5.15    |
| 0.495–0.505       | 16.69475–16.69525   | 608–614       | 5.35–5.46   |
| 2.1735–2.1905     | 16.80425–16.80475   | 960–1240      | 7.25–7.75   |
| 4.125–4.128       | 25.5–25.67          | 1300–1427     | 8.025–8.5   |
| 4.17725–4.17775   | 37.5–38.25          | 1435–1626.5   | 9.0–9.2     |
| 4.20725–4.20775   | 73–74.6             | 1645.5–1646.5 | 9.3–9.5     |
| 6.215–6.218       | 74.8–75.2           | 1660–1710     | 10.6–12.7   |
| 6.26775–6.26825   | 108–121.94          | 1718.8–1722.2 | 13.25–13.4  |
| 6.31175–6.31225   | 123–138             | 2200–2300     | 14.47–14.5  |
| 8.291–8.294       | 149.9–150.05        | 2310–2390     | 15.35–16.2  |
| 8.362–8.366       | 156.52475–156.52525 | 2483.5–2500   | 17.7–21.4   |
| 8.37625–8.38675   | 156.7–156.9         | 2690–2900     | 22.01–23.12 |
| 8.41425–8.41475   | 162.0125–167.17     | 3260–3267     | 23.6–24.0   |
| 12.29–12.293      | 167.72–173.2        | 3332–3339     | 31.2–31.8   |
| 12.51975–12.52025 | 240–285             | 3345.8–3358   | 36.43–36.5  |
| 12.57675–12.57725 | 322–335.4           | 3600–4400     | Above 38.6  |
| 13.36–13.41       |                     |               |             |

### 8.3.2 Test summary

|               |                   |                   |           |
|---------------|-------------------|-------------------|-----------|
| Test date     | December 22, 2016 | Temperature       | 21 °C     |
| Test engineer | Feng You          | Air pressure      | 1001 mbar |
| Verdict       | Pass              | Relative humidity | 58 %      |

### 8.3.3 Observations, settings and special notes

The spectrum was searched from 30 MHz to the 10<sup>th</sup> harmonic.  
EUT was set to transmit with 100 % duty cycle.

ANSI 63.10-2013 Sec. 11.12.2 Antenna-port conducted measured method was used with maximum antenna gain, and in combination with radiated test with antenna port terminated (Sec 11.12.2.7).

Spectrum analyser settings for conducted spurious emissions measurements:

|                       |          |
|-----------------------|----------|
| Resolution bandwidth: | 100 kHz  |
| Video bandwidth:      | 300 kHz  |
| Detector mode:        | Peak     |
| Trace mode:           | Max Hold |

Spectrum analyser settings for radiated measurements within restricted bands below 1 GHz:

|                       |          |
|-----------------------|----------|
| Resolution bandwidth: | 100 kHz  |
| Video bandwidth:      | 300 kHz  |
| Detector mode:        | Peak     |
| Trace mode:           | Max Hold |

Spectrum analyser settings for peak radiated measurements within restricted bands above 1 GHz:

|                       |          |
|-----------------------|----------|
| Resolution bandwidth: | 1 MHz    |
| Video bandwidth:      | 3 MHz    |
| Detector mode:        | Peak     |
| Trace mode:           | Max Hold |

**Section 8**  
**Test name**  
**Specification**

Testing data  
FCC 15.247(e) and RSS-247 5.2(2) Power Spectrum Density  
FCC Part 15 Subpart C and RSS-247, Issue 1



Spectrum analyser settings for average radiated measurements within restricted bands above 1 GHz:

|                       |          |
|-----------------------|----------|
| Resolution bandwidth: | 1 MHz    |
| Video bandwidth:      | 3 MHz    |
| Detector mode:        | AVG      |
| Trace mode:           | Max Hold |

ANSI 63.10-2013 11.12.2 Antenna-port conducted measurements method was used.

#### 8.3.4 Test data

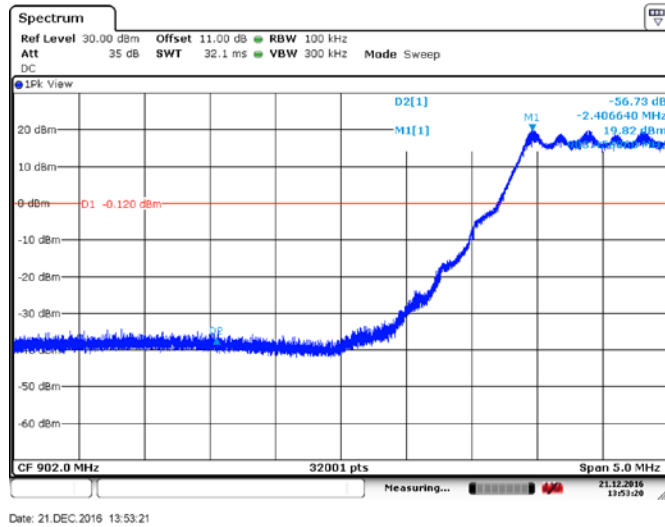


Figure 8.3.1: Bandedge Measurement, low channel

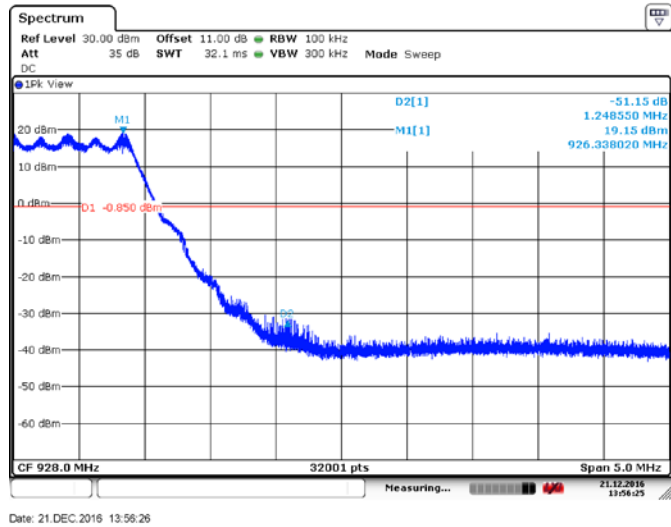


Figure 8.3.2: Bandedge Measurement, high channel

Table 8.3-4: Reference PSD in 100kHz

| Modulation | Frequency, MHz | PSD dBm/100kHz |
|------------|----------------|----------------|
| FSK-4      | 904.1          | 19.82          |
|            | 914.9          | 19.78          |
|            | 925.7          | 19.15          |

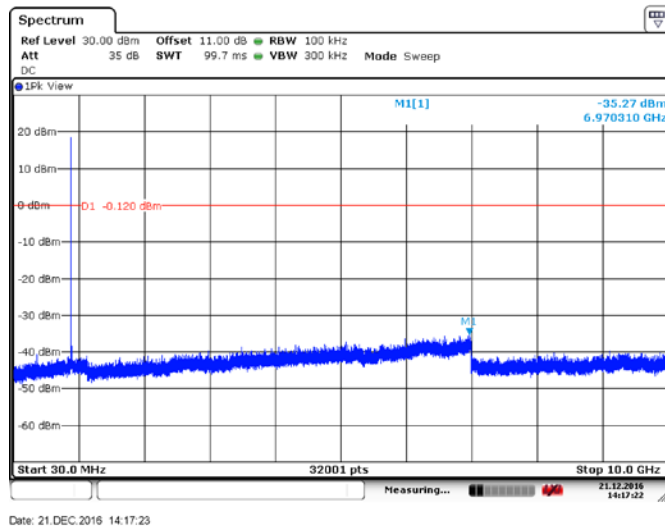


Figure 8.3.3: Conducted spurious emissions, low channel

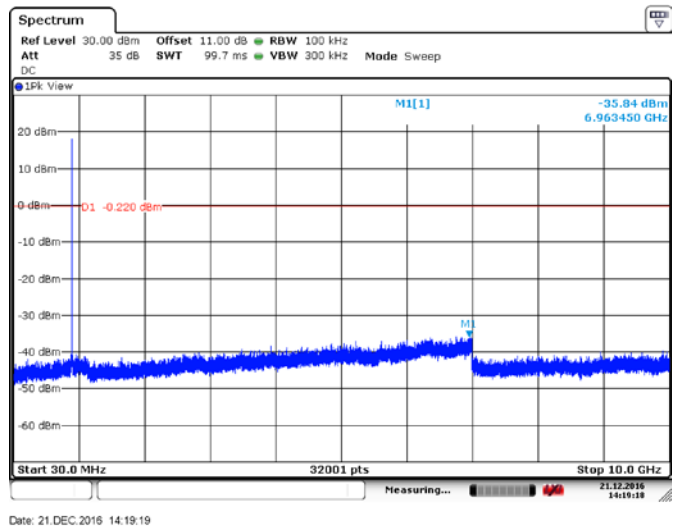


Figure 8.3.4: Conducted spurious emissions, high channel

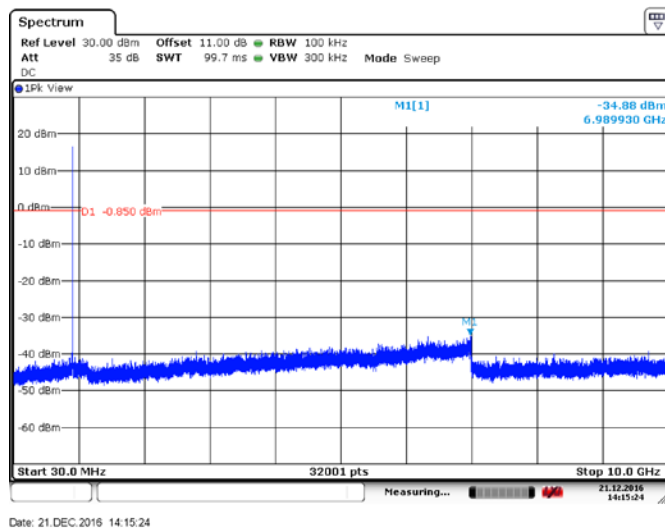


Figure 8.3.5: Conducted spurious emissions, mid channel

Peaks within 902-928MHz are transmitter fundamentals.

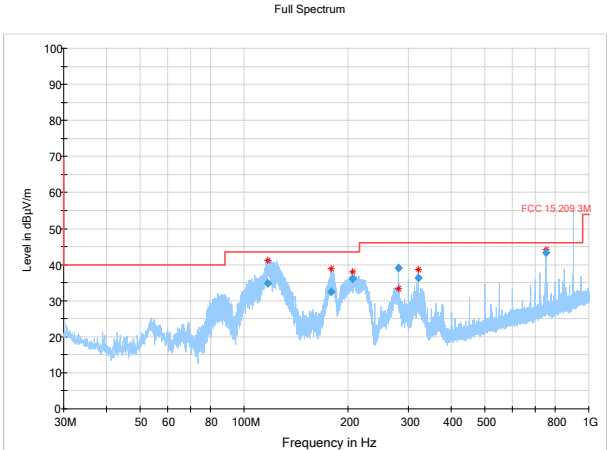


Figure 8.3.6: Radiated spurious emissions for case, low channel, 30-1000MHz

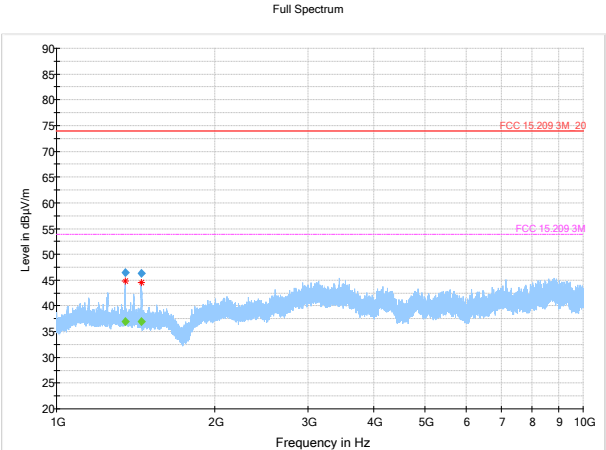


Figure 8.3.7: Radiated spurious emissions for case, low channel, 1-10GHz

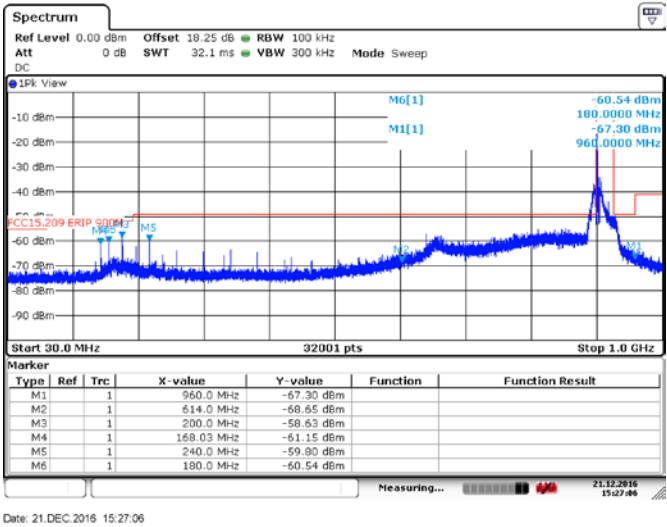


Figure 8.3.8: Conducted spurious emissions with max antenna gain, low channel, 30-1000MHz

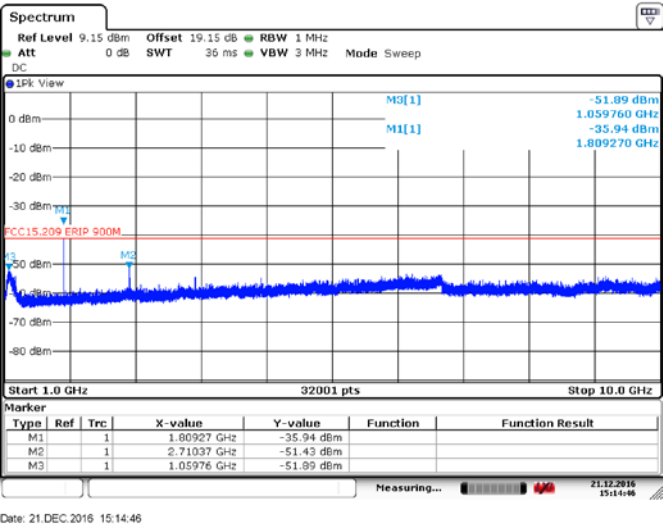


Figure 8.3.9: Conducted spurious emissions with max antenna gain, low channel, 1-10GHz

**Table 8.3-5: Radiated field strength measurement results for low channel 904.1MHz**

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|
| 117.388500      | 34.81              | 43.50          | 8.69        | 1000.0          | 120.000         | 100.0       | V   | 17.0          |
| 179.020000      | 32.54              | 43.50          | 10.96       | 1000.0          | 120.000         | 123.8       | V   | 184.0         |
| 206.198000      | 36.19              | 43.50          | 7.31        | 1000.0          | 120.000         | 105.6       | V   | 211.0         |
| 280.009000      | 39.10              | 46.00          | 6.90        | 1000.0          | 120.000         | 151.1       | H   | 199.0         |
| 319.990000      | 36.32              | 46.00          | 9.68        | 1000.0          | 120.000         | 102.3       | H   | 44.0          |
| 749.991000      | 43.23              | 46.00          | 2.77        | 1000.0          | 120.000         | 110.7       | H   | 234.0         |

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|------------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|
| 1350.073333     | 46.44            | ---              | 73.90          | 27.47       | 5000.0          | 1000.000        | 104.2       | H   | 314.0         |
| 1350.073333     | ---              | 36.95            | 53.90          | 16.95       | 5000.0          | 1000.000        | 104.2       | H   | 314.0         |
| 1450.240000     | 46.23            | ---              | 73.90          | 27.67       | 5000.0          | 1000.000        | 102.5       | H   | 228.0         |
| 1450.240000     | ---              | 36.93            | 53.90          | 16.97       | 5000.0          | 1000.000        | 102.5       | H   | 228.0         |

**Table 8.3-6: Conducted measurement in restricted band measurement results for low channel 904.1MHz**

| Frequency (MHz) | MaxPeak w/Max Ant Gain (dBm) | Ground Reflection Factor (dB) | Limit (dBm) | Margin (dB) | Note                   |
|-----------------|------------------------------|-------------------------------|-------------|-------------|------------------------|
| 168.03          | -61.15                       | 4.7                           | -51.7       | 4.75        |                        |
| 180             | -60.54                       | 4.7                           | -51.7       | 4.14        | Not in restricted band |
| 200             | -58.63                       | 4.7                           | -51.7       | 2.23        | Not in restricted band |
| 240             | -59.8                        | 4.7                           | -49.2       | 5.9         |                        |
| 614             | -68.65                       | 4.7                           | -49.2       | 14.75       |                        |
| 960             | -67.3                        | 4.7                           | -49.2       | 13.4        |                        |
| 1059.8          | -51.89                       | 0                             | -41.3       | 10.59       |                        |
| 1809.3          | -35.94                       | 0                             | -41.3       | -5.36       | Not in restricted band |
| 2710.4          | -51.43                       | 0                             | -41.3       | 10.13       |                        |

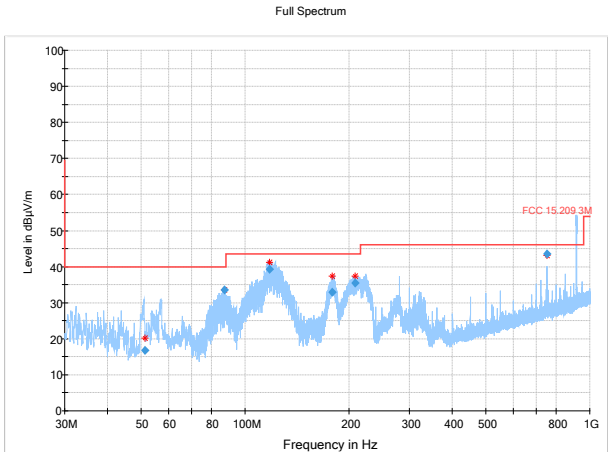


Figure 8.3.10: Radiated spurious emissions for case, mid channel, 30-1000MHz

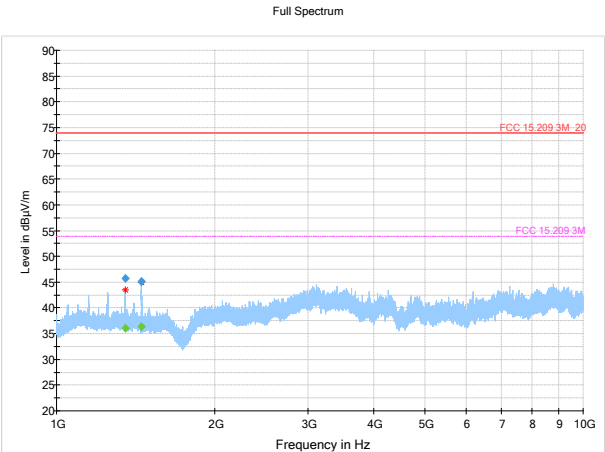


Figure 8.3.11: Radiated spurious emissions for case, mid channel, 1-10GHz

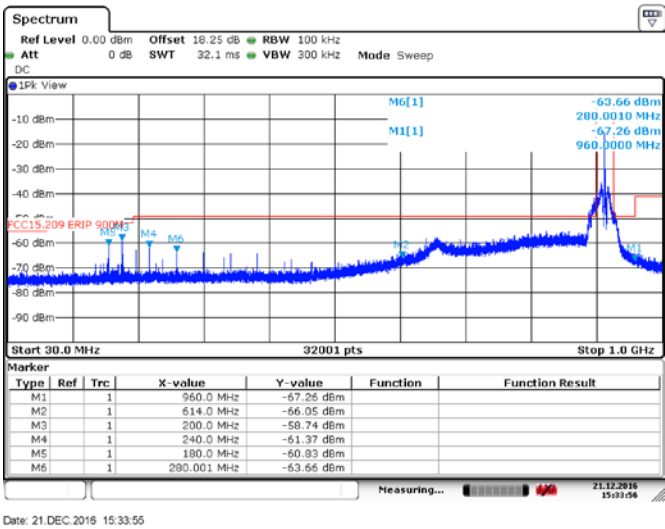


Figure 8.3.12: Conducted spurious emissions with max antenna gain, mid channel, 30-1000MHz

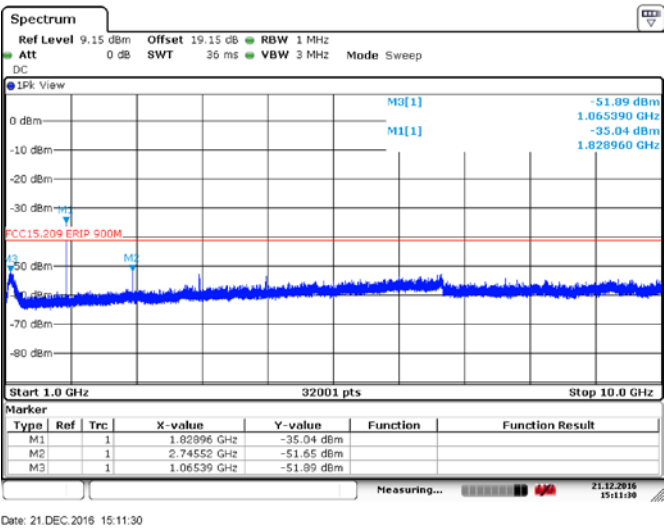


Figure 8.3.13: Conducted spurious emissions with max antenna gain, mid channel, 1-10GHz

**Table 8.3-7:** Radiated field strength measurement results for mid channel 914.9MHz

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|
| 51.223500       | 16.81              | 40.00          | 23.19       | 1000.0          | 120.000         | 172.9       | V   | 10.0          |
| 87.181500       | 33.55              | 40.00          | 6.45        | 1000.0          | 120.000         | 157.8       | V   | 119.0         |
| 117.677000      | 39.37              | 43.50          | 4.13        | 1000.0          | 120.000         | 101.7       | V   | 0.0           |
| 178.886500      | 32.87              | 43.50          | 10.63       | 1000.0          | 120.000         | 118.6       | V   | 136.0         |
| 208.819500      | 35.51              | 43.50          | 7.99        | 1000.0          | 120.000         | 102.0       | V   | 103.0         |
| 749.999500      | 43.46              | 46.00          | 2.54        | 1000.0          | 120.000         | 106.5       | H   | 224.0         |

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|------------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|
| 1350.386667     | 45.70            | ---              | 73.90          | 28.20       | 5000.0          | 1000.000        | 111.4       | H   | 299.0         |
| 1350.386667     | ---              | 36.10            | 53.90          | 17.80       | 5000.0          | 1000.000        | 111.4       | H   | 299.0         |
| 1451.026667     | 45.19            | ---              | 73.90          | 28.71       | 5000.0          | 1000.000        | 110.8       | H   | 224.0         |
| 1451.026667     | ---              | 36.28            | 53.90          | 17.62       | 5000.0          | 1000.000        | 110.8       | H   | 224.0         |

**Table 8.3-8:** Conducted measurement in restricted band measurement results for mid channel 914.9MHz

| Frequency (MHz) | MaxPeak w/Max Ant Gain (dBm) | Ground Reflection Factor (dB) | Limit (dBm) | Margin (dB) | Note                   |
|-----------------|------------------------------|-------------------------------|-------------|-------------|------------------------|
| 180             | -60.83                       | 4.7                           | -51.7       | 4.43        | Not in restricted band |
| 200             | -58.74                       | 4.7                           | -51.7       | 2.34        | Not in restricted band |
| 240             | -61.37                       | 4.7                           | -49.2       | 7.47        |                        |
| 280             | -63.66                       |                               | -49.2       | 14.46       |                        |
| 614             | -66.05                       | 4.7                           | -49.2       | 12.15       |                        |
| 960             | -67.26                       | 4.7                           | -49.2       | 13.36       |                        |
| 1065.4          | -51.89                       | 0                             | -41.3       | 10.59       |                        |
| 1829            | -35.04                       | 0                             | -41.3       | -6.26       | Not in restricted band |
| 2710.4          | -51.65                       | 0                             | -41.3       | 10.35       |                        |

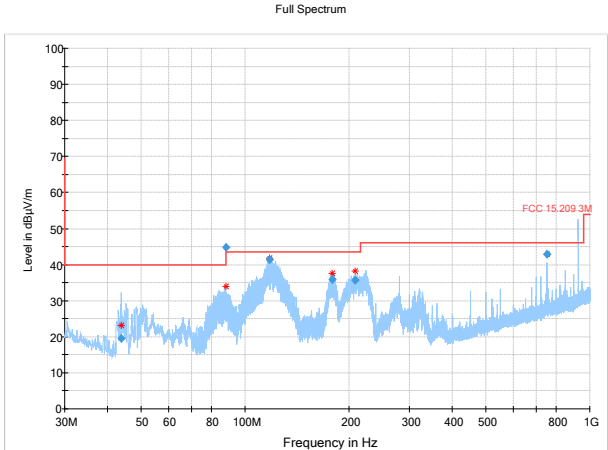


Figure 8.3.14: Radiated spurious emissions for case, high channel, 30-1000MHz

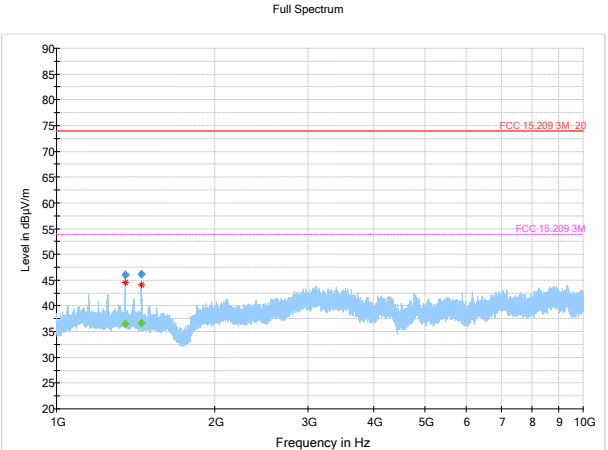


Figure 8.3.15: Radiated spurious emissions for case, high channel, 1-10GHz

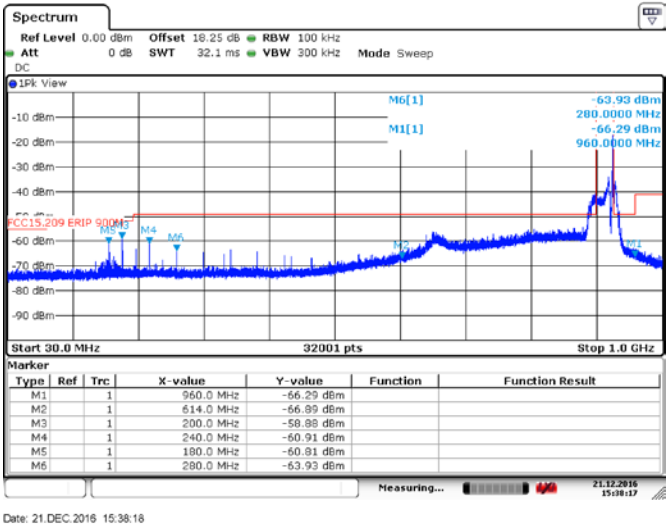


Figure 8.3.16: Conducted spurious emissions with max antenna gain, high channel, 30-1000MHz

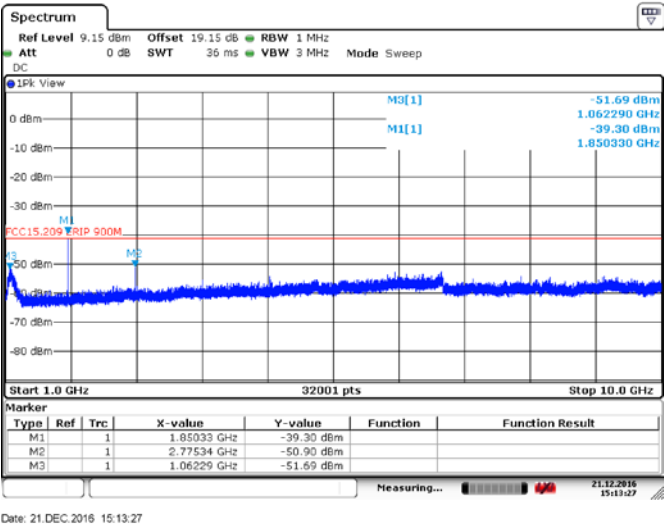


Figure 8.3.17: Conducted spurious emissions with max antenna gain, high channel, 1-10GHz

**Table 8.3-9: Radiated field strength measurement results for high channel 925.7MHz**

| Frequency (MHz) | QuasiPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|--------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|
| 43.822500       | 19.62              | 40.00          | 20.38       | 1000.0          | 120.000         | 349.0       | V   | 154.0         |
| 88.081000*      | 44.81              | 43.50          | -1.31*      | 1000.0          | 120.000         | 103.1       | V   | 35.0          |
| 117.534000      | 41.31              | 43.50          | 2.19        | 1000.0          | 120.000         | 103.9       | V   | 350.0         |
| 178.789500      | 35.84              | 43.50          | 7.66        | 1000.0          | 120.000         | 101.4       | V   | 170.0         |
| 209.053500      | 35.76              | 43.50          | 7.74        | 1000.0          | 120.000         | 99.0        | V   | 179.0         |
| 750.031000      | 42.91              | 46.00          | 3.09        | 1000.0          | 120.000         | 103.4       | H   | 227.0         |

Note: \*Not in restricted band

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) |
|-----------------|------------------|------------------|----------------|-------------|-----------------|-----------------|-------------|-----|---------------|
| 1349.900000     | 46.00            | ---              | 73.90          | 27.90       | 5000.0          | 1000.000        | 106.1       | H   | 304.0         |
| 1349.900000     | ---              | 36.45            | 53.90          | 17.45       | 5000.0          | 1000.000        | 106.1       | H   | 304.0         |
| 1450.173333     | 46.13            | ---              | 73.90          | 27.77       | 5000.0          | 1000.000        | 108.4       | H   | 146.0         |
| 1450.173333     | ---              | 36.61            | 53.90          | 17.29       | 5000.0          | 1000.000        | 108.4       | H   | 146.0         |

**Table 8.3-10: Conducted measurement in restricted band measurement results for mid channel 914.9MHz**

| Frequency (MHz) | MaxPeak w/Max Ant Gain (dBm) | Ground Reflection Factor (dB) | Limit (dBm) | Margin (dB) | Note                   |
|-----------------|------------------------------|-------------------------------|-------------|-------------|------------------------|
| 180             | -60.81                       | 4.7                           | -51.7       | 4.41        | Not in restricted band |
| 200             | -58.88                       | 4.7                           | -51.7       | 2.48        | Not in restricted band |
| 240             | -60.91                       | 4.7                           | -49.2       | 7.01        |                        |
| 280             | -63.93                       |                               | -49.2       | 14.73       |                        |
| 614             | -66.89                       | 4.7                           | -49.2       | 12.99       |                        |
| 960             | -66.29                       | 4.7                           | -49.2       | 12.39       |                        |
| 1063            | -51.69                       | 0                             | -41.3       | 10.39       |                        |
| 1850            | -39.3                        | 0                             | -41.3       | -2          | Not in restricted band |
| 2775            | -50.9                        | 0                             | -41.3       | 9.6         |                        |

## 8.4 FCC 15.247(e) and RSS-247 5.2(2) Power Spectrum Density

### 8.4.1 Definitions and limits

#### FCC and IC:

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

### 8.4.2 Test summary

|               |                   |                   |           |
|---------------|-------------------|-------------------|-----------|
| Test date     | December 21, 2016 | Temperature       | 21 °C     |
| Test engineer | Feng You          | Air pressure      | 1003 mbar |
| Verdict       | Pass              | Relative humidity | 54 %      |

### 8.4.3 Observations, settings and special notes

3kHz RBW

### 8.4.4 Test data

**Table 8.4-1: Power Spectrum Density**

| Power Source | Frequency,<br>MHz | Conducted PSD@3kHz, dBm |       | Margin,<br>dB | Antenna<br>gain, dBi | EIRP,<br>dBm | EIRP limit,<br>dBm | EIRP margin,<br>dB |
|--------------|-------------------|-------------------------|-------|---------------|----------------------|--------------|--------------------|--------------------|
|              |                   | Measured                | Limit |               |                      |              |                    |                    |
| 120V AC      | 904.1             | 4.23                    | 8     | 3.77          | 7.15                 | 11.38        | 14                 | 2.62               |
|              | 914.9             | 4.59                    | 8     | 3.41          | 7.15                 | 11.74        | 14                 | 2.26               |
|              | 925.7             | 3.31                    | 8     | 4.69          | 7.15                 | 10.46        | 14                 | 3.54               |

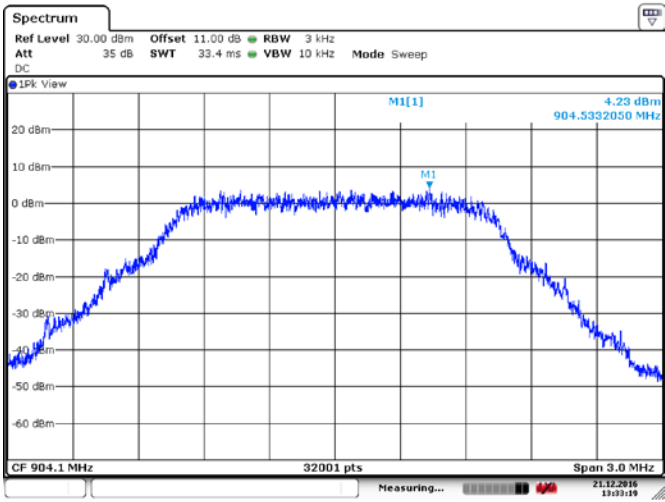


Figure 8.4-1: PSD, Low CH

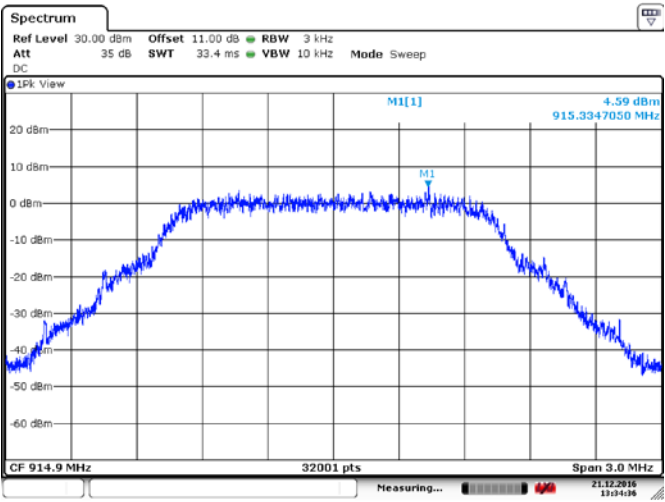


Figure 8.4-2: PSD, Mid CH

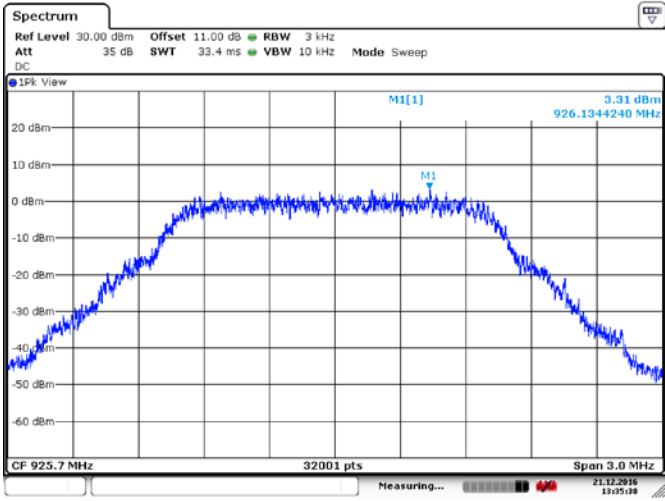


Figure 8.4-3: PSD, High CH

## 8.5 FCC 15.207(a) AC power line conducted emissions limits

### 8.5.1 Definitions and limits

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  $\mu$ H/50  $\Omega$  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.

The conducted emissions shall be measured with a 50  $\Omega$ /50  $\mu$ H line impedance stabilization network (LISN).

**Table 8.6-1: Conducted emissions limit**

| Frequency of emission (MHz) | Conducted limit (dB $\mu$ V) |           |
|-----------------------------|------------------------------|-----------|
|                             | Quasi-peak                   | Average   |
| 0.15–0.5                    | 66 to 56*                    | 56 to 46* |
| 0.5–5                       | 56                           | 46        |
| 5–30                        | 60                           | 50        |

Note: \* - Decreases with the logarithm of the frequency.

### 8.5.2 Test summary

|               |                   |                   |           |
|---------------|-------------------|-------------------|-----------|
| Test date     | December 21, 2016 | Temperature       | 21 °C     |
| Test engineer | Feng You          | Air pressure      | 1003 mbar |
| Verdict       | Pass              | Relative humidity | 54 %      |

### 8.5.3 Observations, settings and special notes

This is tested with Low CH TX on.

The spectral scan has been corrected with transducer factors (i.e. cable loss, LISN factors, and attenuators) for determination of compliance.

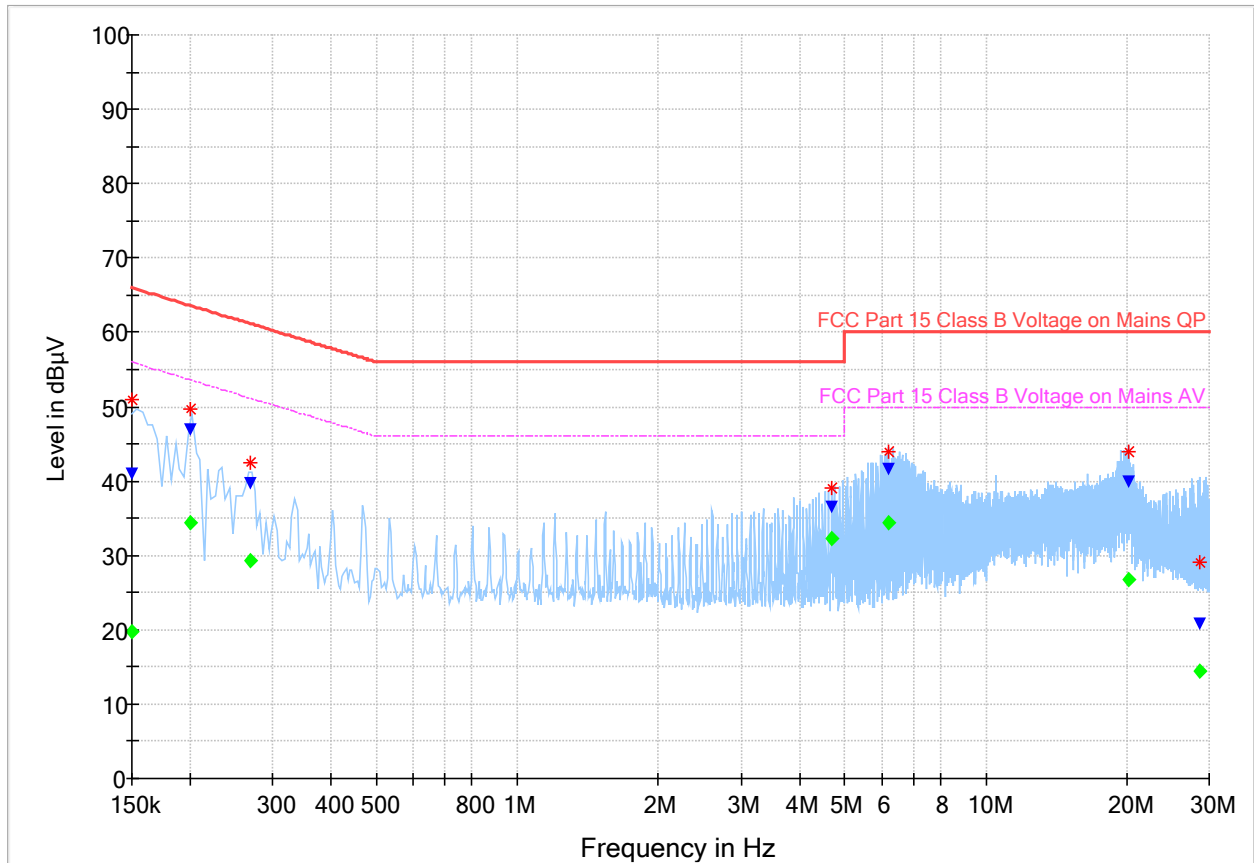
A preview measurement was generated with the receiver in continuous scan mode. Emissions detected within 6 dB or above limit were re-measured with the appropriate detector against the correlating limit and recorded as the final measurement.

Test receiver settings:

|                      |                                                                  |
|----------------------|------------------------------------------------------------------|
| Frequency span       | 150 kHz to 30 MHz                                                |
| Detector mode        | Peak and Average (preview mode); Quasi-Peak (final measurements) |
| Resolution bandwidth | 9 kHz                                                            |
| Video bandwidth      | 30 kHz                                                           |
| Trace mode           | Max Hold                                                         |
| Measurement time     | 1000 ms                                                          |

8.5.4 Test data

Full Spectrum



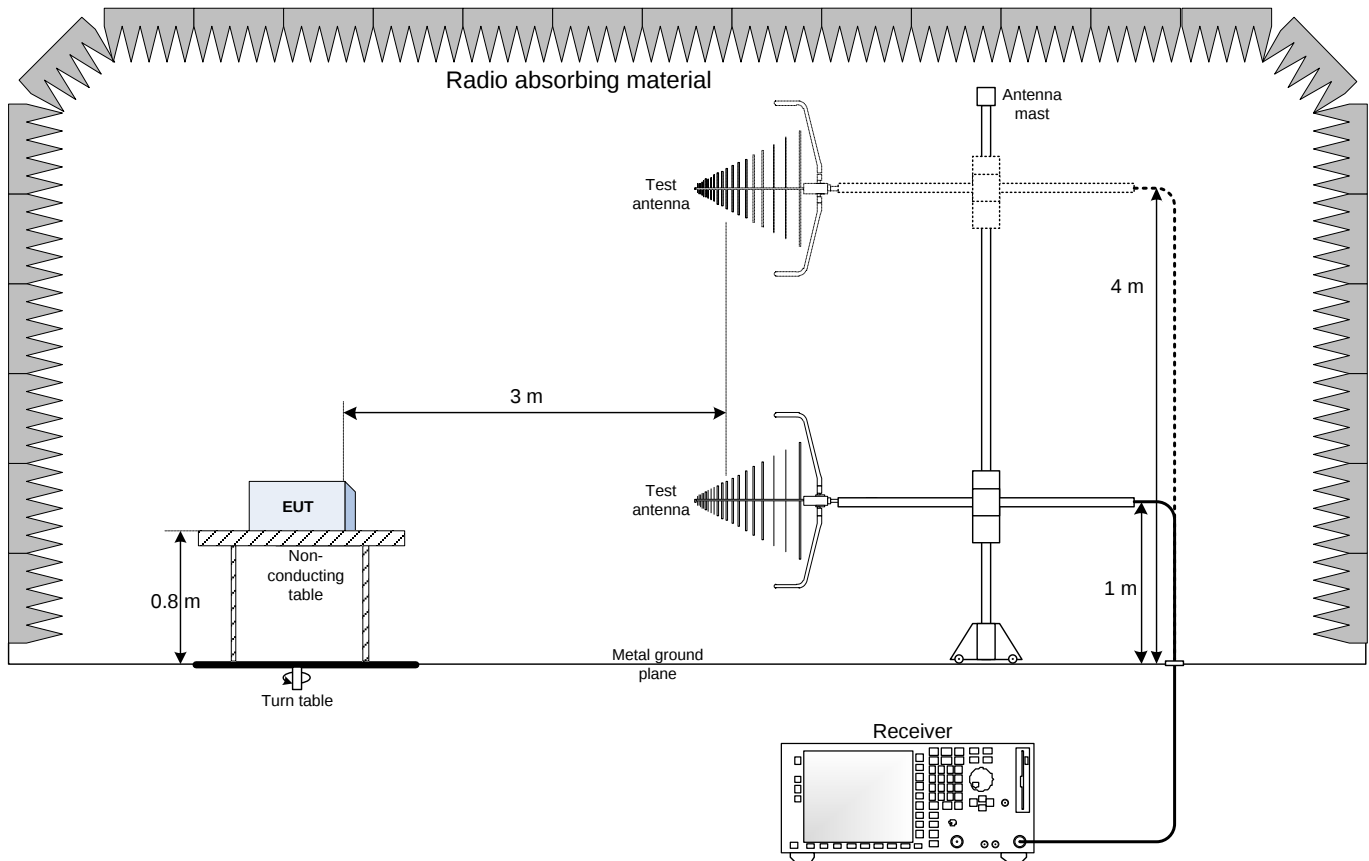
Plot 8.6-1: Conducted emissions

Table 8.6-2: Quasi-Peak and Average conducted emissions results

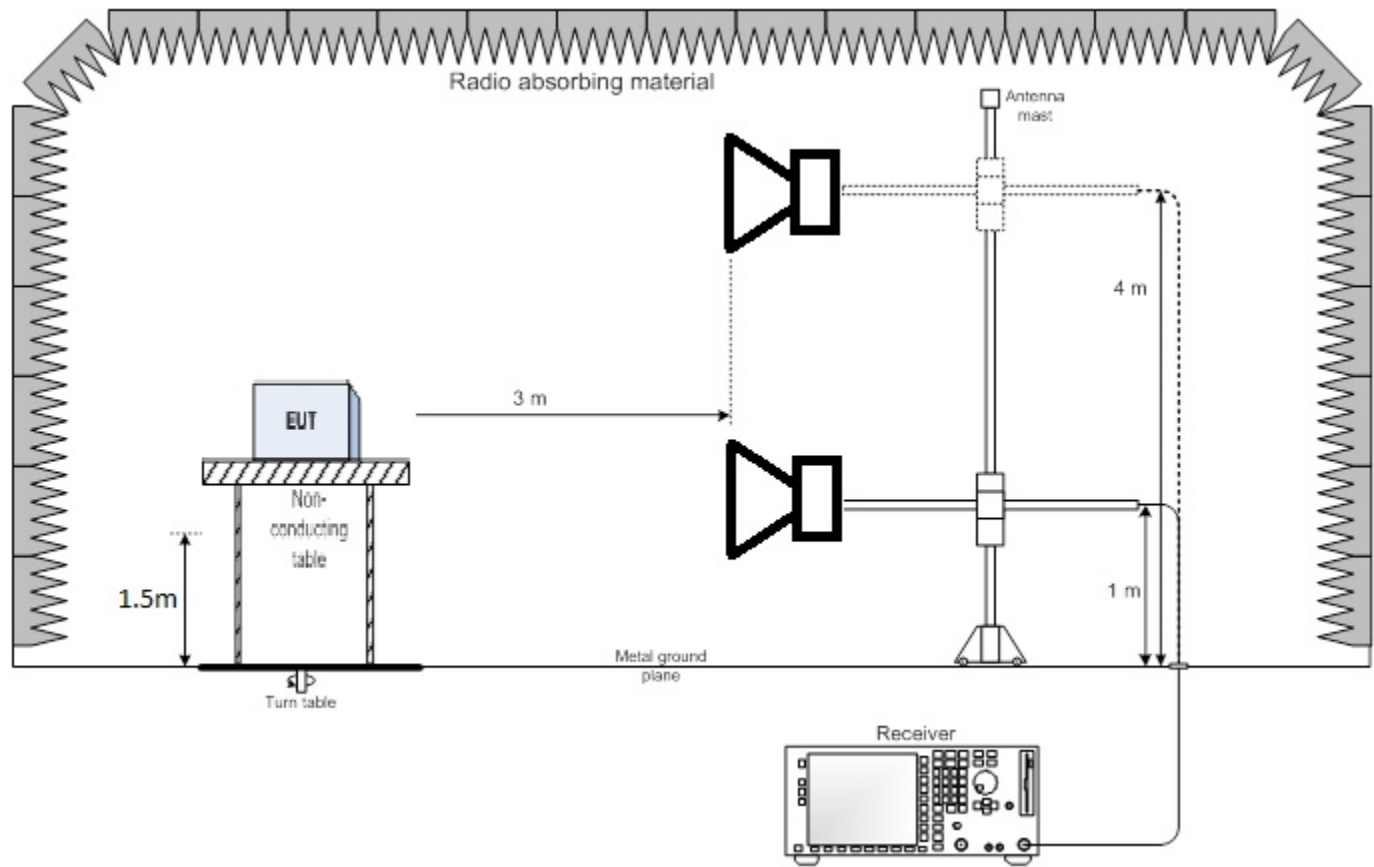
| Frequency (MHz) | QuasiPeak (dBμV) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter |
|-----------------|------------------|----------------|--------------|-------------|-----------------|-----------------|------|--------|
| 0.150000        | ---              | 19.64          | 56.00        | 36.36       | 5000.0          | 9.000           | N    | ON     |
| 0.150000        | 40.92            | ---            | 66.00        | 25.08       | 5000.0          | 9.000           | N    | ON     |
| 0.200500        | ---              | 34.39          | 53.59        | 19.20       | 5000.0          | 9.000           | N    | ON     |
| 0.200500        | 46.85            | ---            | 63.59        | 16.73       | 5000.0          | 9.000           | N    | ON     |
| 0.268500        | 39.65            | ---            | 61.16        | 21.52       | 5000.0          | 9.000           | N    | ON     |
| 0.268500        | ---              | 29.40          | 51.16        | 21.77       | 5000.0          | 9.000           | N    | ON     |
| 4.680500        | 36.49            | ---            | 56.00        | 19.51       | 5000.0          | 9.000           | L1   | ON     |
| 4.680500        | ---              | 32.31          | 46.00        | 13.69       | 5000.0          | 9.000           | L1   | ON     |
| 6.212500        | ---              | 34.37          | 50.00        | 15.63       | 5000.0          | 9.000           | L1   | ON     |
| 6.212500        | 41.63            | ---            | 60.00        | 18.37       | 5000.0          | 9.000           | L1   | ON     |
| 20.180500       | ---              | 26.79          | 50.00        | 23.21       | 5000.0          | 9.000           | N    | ON     |
| 20.180500       | 39.94            | ---            | 60.00        | 20.06       | 5000.0          | 9.000           | N    | ON     |
| 28.588500       | ---              | 14.34          | 50.00        | 35.66       | 5000.0          | 9.000           | N    | ON     |
| 28.588500       | 20.78            | ---            | 60.00        | 39.22       | 5000.0          | 9.000           | N    | ON     |

## Section 9. Block diagrams of test set-ups

### 9.1 Radiated emissions set-up – Below 1GHz



## 9.2 Radiated emissions set-up – Above 1GHz



## 9.3 Conducted emissions set-up

