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Test report

FCC-15.247 and RSS-247 FHSS MEPS LVIS5600

Date of issue: April 12, 2017

Applicant: MEPS Real-Time Inc.

Product: Linked Visibility Inventory Station

Model: 5600 Model variant: N/A

FCC ID: SOA-5600 IC Registration number: 22150-5600

Specifications:

- FCC 47 CFR Part 15 Subpart C, §15.247

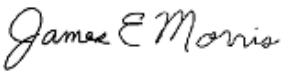
  Operation in the 902–928 MHz, 2400–2483.5 MHz, 5725–5850 MHz

- 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

Company name	Nemko USA, Inc.
Address	2210 Faraday Ave, Suite 150
City	Carlsbad
Province	California
Postal code	92008
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	April 12, 2017
Reviewer signature	

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.

Copyright notification

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Section 1. Report summary

1.1 Applicant and manufacturer

Company name	MEPS Real-Time Inc.
Address	6451 El Camino Real, Suite C
City	Carlsbad
Province/State	CA
Postal/Zip code	92009
Country	U.S.A.

1.2 Test specifications

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

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

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

None

1.6 Test report revision history

Revision #	Details of changes made to test report
1	Original report issued
2	Updated based on customer comment

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[1]
§15.203	Antenna requirement	Pass[2]
§15.205	Restricted bands of operation	Pass

Notes: [1] Test also performed with fully charged batteries in addition of AC supply voltage variation.

[2] The Antennas are located within the protective cover of EUT.

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	Pass
§15.247(a)(1)(i)	Frequency hopping systems operating in the 902–928 MHz band	Pass
§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	Not applicable
§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	Pass
§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	Not applicable
§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	Not applicable
§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: [1] 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	Pass
5.1 (2)	Minimum channel spacing for frequency hopping systems	Pass
5.1 (3)	Frequency hopping systems operating in the 902–928 MHz band	Pass
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	Not applicable
5.2 (2)	Maximum power spectral density	Not applicable
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	Pass
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	Not applicable
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

Notes: EUT is FHSS in the 902-928 MHz band

Section 3. Equipment under test (EUT) details

3.1 Sample information

Receipt date	December 14, 2016
Nemko sample ID number	320849#1

3.2 EUT information

Product name	Linked Visibility Inventory Station
Model	5600
Model variant	N/A
Serial number	01941

3.3 Technical information

Applicant IC company number	22150
IC UPN number	5600
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)	902.75
Frequency Max (MHz)	927.25
RF power Min (W), Conducted/ERP/EIRP	N/A
RF power Max (W), Conducted/ERP/EIRP	0.871W to MANSS antenna, 0.336W to Times-7 antenna (Conducted)
Field strength, Units @ distance	N/A
Measured BW (kHz) (20 dB)	441.4
Calculated BW (kHz), as per TRC-43	N/A
Type of modulation	FHSS/FSK
Emission classification (F1D, G1D, D1D)	F1D
Transmitter spurious, Units @ distance	59.96 / 52.05 dBµV/m @ 3m (peak/AVG)
Power requirements	15V/19V Lithium-ion Battery, AC 100-240V 50/60Hz
Antenna information	The EUT uses a unique antenna coupling/ non-detachable antenna to the intentional radiator.
Antennas	Times-7 (Top Plate), 6dBi MANSS (one under each of the 3 drawers), -0.55dBi

3.4 Product description and theory of operation

EUT is used at the point of care where anesthesia medication is administered. It uses 900MHz RFID that records the inventory transactions continuously whenever a drawer is scanned. Each position (Top plate, large drawer, left drawer, right drawer) can be scanned individually or in sequence, but not at the same time.

IMPINJ Speedway RFID Reader (FCC ID TWYIPJREV, IC#: 6324A-IPJREV) is used for RFID functions, but with different set of antennas.

3.5 EUT exercise details

Depends on test cases, the EUT is set either to fixed channel (L/M/H) or frequency hopping mode, using test FW.

Top plate antenna (RF4) is tested with reduced power level.

Large top drawer antenna (RF1) is tested as worst case for drawers (same output level for all 3 drawers, same type of antennas, and larger shielded drawer with more possibility for RF leak, large drawer on top of 2 small drawers – RF2&RF3). It was tested using typical loaded configuration as intended use case.

3.6 EUT setup diagram

Please refer to separate photo exhibit for detail.

3.7 EUT sub assemblies

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

Description	Brand name	Model/Part number	Serial number
EUT	Intelliguard	5600	01941

Section 4. Engineering considerations

4.1 Modifications incorporated in the EUT

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

4.2 Technical judgment

None

4.3 Deviations from laboratory tests procedures

No deviations were made from laboratory procedures.

Section 5. Test conditions

5.1 Atmospheric conditions

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

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 ±5 %, for which the equipment was designed.

Internal Lithium-ion Battery, AC 100-240V 50/60Hz

Section 6. Measurement uncertainty

6.1 Uncertainty of measurement

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

7.1 Test equipment list

Table 7.1-1: **Equipment list**

et Tag	Description	Manufacturer	Model	Serial #	Last Cal	Next Cal
529	Antenna, DRWG	EMCO	3115	2505	01-Feb-2016	01-Feb-2017
809	Multimeter	Fluke	111	77790102	29-Jun-2016	29-Jun-2017
E1019	Two Line V-Network	Rohde & Schwarz	ENV216	101045	15-Jun-2016	15-Jun-2017
E1026	EMI Test Receiver 9kHz to 7GHz	Rohde & Schwarz	ESCI 7	100800	17-Mar-2016	17-Mar-2017
E1035	Variac (Variable Transformer) 3KVA	Shanghai China	TDGC	N/A	N/R	VOU
1480	Antenna, Bilog	Schaffner-Chase	CBL6111C	2572	21-Jul-2016	21-Jul-2017
E1120	Signal and Spectrum Analyzer	Rohde & Schwarz	FSV40	101395	25-May-2016	25-May-2017
E1121	EMI Test Receiver	Rohde & Schwarz	ESU 40	100064	28-Apr-2016	28-Apr-2017

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

Section 8. Testing data

8.1 FCC 15.247(a) (1) and RSS-247 5.1(1) 20 dB bandwidth of the hopping channel

8.1.1 Definitions and limits

FCC and IC:

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

(i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

8.1.2 Test summary

Test date	December 15, 2016	Temperature	22 °C
Test engineer	Feng You	Air pressure	1003 mbar
Verdict	Pass	Relative humidity	55 %

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	≥3 × RBW
Frequency span	2 – 5 times OBW
Detector mode	Peak
Trace mode	Max Hold

Tested with RF Test Board.

8.1.4 Test data

Table 8.1-1: **20 dB bandwidth results**

Modulation	Frequency, MHz	20 dB bandwidth, kHz	Channel Bandwidth, kHz	Margin, kHz
FSK	902.75	441.4	500	58.6
	914.75	441.4	500	58.6
	927.25	441.4	500	58.6

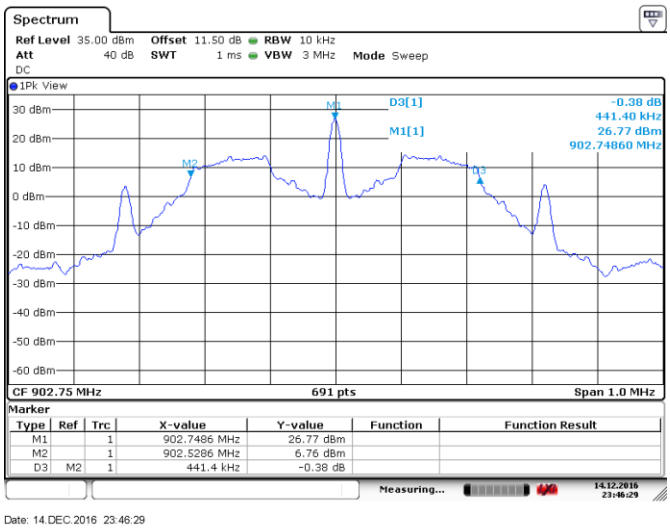


Figure 8.1-1: **20 dB bandwidth, 902.75MHz, RF1**

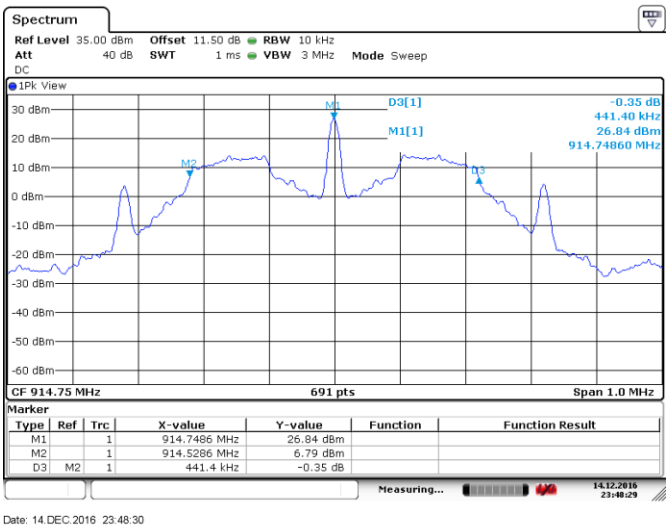


Figure 8.1-2: **20 dB bandwidth, 914.75MHz, RF1**

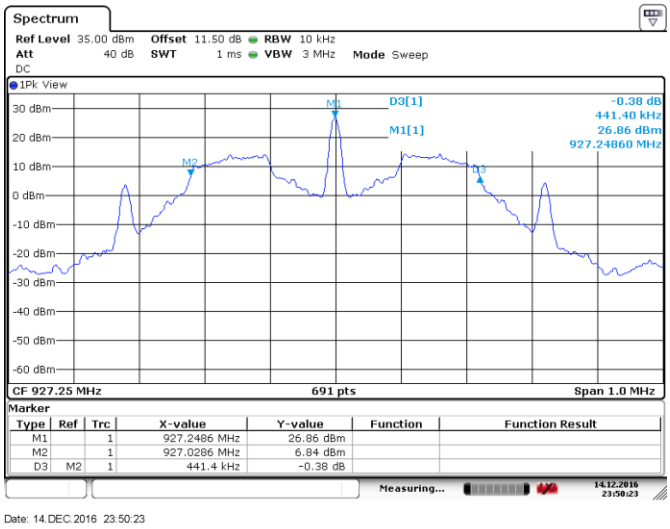


Figure 8.1-3: **20 dB bandwidth, 927.25MHz, RF1**

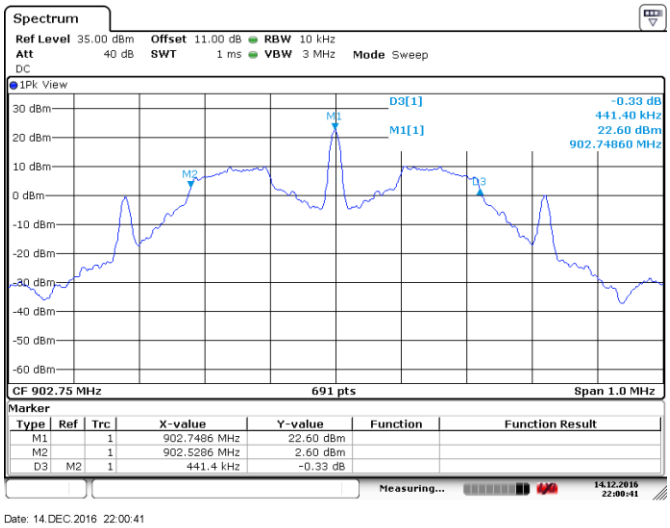


Figure 8.1-4: **20 dB bandwidth, 902.75MHz, RF4**

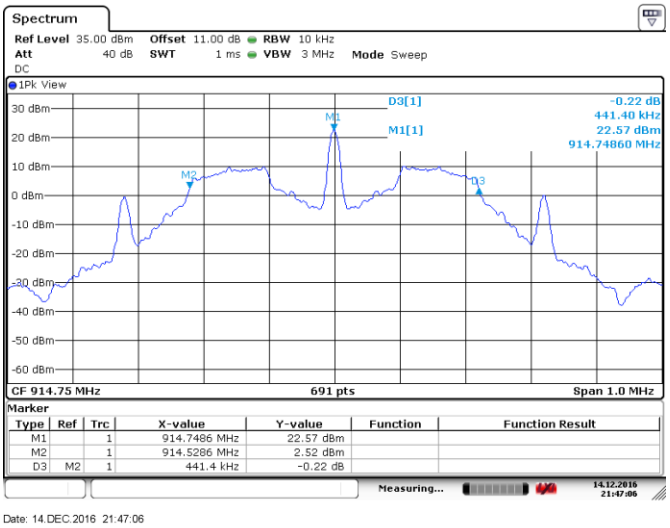


Figure 8.1-5: **20 dB bandwidth, 914.75MHz, RF4**

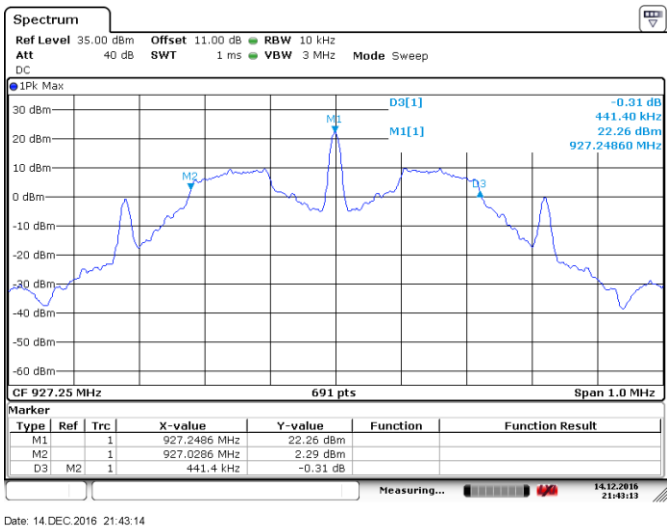


Figure 8.1-6: **20 dB bandwidth, 927.25MHz, RF4**

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:

(2) For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

(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

(1) For FHSs operating in the band 902-928 MHz, the maximum peak conducted output power shall not exceed 1.0 W, and the e.i.r.p. shall not exceed 4 W if the hopset uses 50 or more hopping channels; the maximum peak conducted output power shall not exceed 0.25 W and the e.i.r.p. shall not exceed 1 W if the hopset uses less than 50 hopping channels.

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 15, 2016	Temperature	22 °C
Test engineer	Feng You	Air pressure	1003 mbar
Verdict	Pass	Relative humidity	55 %

8.2.3 Observations, settings and special notes

Tested with RF Conducted.

8.2.4 Test data

Table 8.2-1: **Output power measurements results – RF1 (Large Drawer)**

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	902.75	29.26	30	0.74	-0.55	28.71	36	7.29
	914.75	29.26	30	0.74	-0.55	28.71	36	7.29
	927.25	29.12	30	0.88	-0.55	28.57	36	7.43
85V AC	902.75	29.26	30	0.74	-0.55	28.71	36	7.29
	914.75	29.24	30	0.76	-0.55	28.69	36	7.31
	927.25	29.1	30	0.9	-0.55	28.55	36	7.45
276V AC	902.75	29.24	30	0.76	-0.55	28.69	36	7.31
	914.75	29.26	30	0.74	-0.55	28.71	36	7.29
	927.25	29.1	30	0.9	-0.55	28.55	36	7.45
Battery	902.75	29.24	30	0.76	-0.55	28.69	36	7.31
	914.75	29.27	30	0.73	-0.55	28.72	36	7.28
	927.25	29.1	30	0.9	-0.55	28.55	36	7.45

Table 8.2-2: **Output power measurements results – RF4 (Top Plate)**

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	902.75	25.17	30	4.83	6	31.17	36	4.83
	914.75	25.23	30	4.77	6	31.23	36	4.77
	927.25	25.15	30	4.85	6	31.15	36	4.85
85V AC	902.75	25.11	30	4.89	6	31.11	36	4.89
	914.75	25.22	30	4.78	6	31.22	36	4.78
	927.25	25.16	30	4.84	6	31.16	36	4.84
276V AC	902.75	25.09	30	4.91	6	31.09	36	4.91
	914.75	25.24	30	4.76	6	31.24	36	4.76
	927.25	25.09	30	4.91	6	31.09	36	4.91
Battery	902.75	25.09	30	4.91	6	31.09	36	4.91
	914.75	25.26	30	4.74	6	31.26	36	4.74
	927.25	25.1	30	4.9	6	31.1	36	4.9

Table 8.2-3: **Output power measurements results – RF2 (Left Drawer)**

Power Source	Frequency, MHz	Conducted output power, dBm		Margin, dB	Antenna gain, dBi	EIRP, dBm	EIRP limit, dBm	EIRP margin, dB
		Measured	Limit					
120V AC	902.75	29.14	30	0.86	-0.55	28.59	36	7.41
	914.75	29.23	30	0.77	-0.55	28.68	36	7.32
	927.25	29.24	30	0.76	-0.55	28.69	36	7.31

Table 8.2-4: **Output power measurements results – RF3 (Right Drawer)**

Power Source	Frequency, MHz	Conducted output power, dBm		Margin, dB	Antenna gain, dBi	EIRP, dBm	EIRP limit, dBm	EIRP margin, dB
		Measured	Limit					
120V AC	902.75	29.33	30	0.67	-0.55	28.78	36	7.22
	914.75	29.4	30	0.6	-0.55	28.85	36	7.15
	927.25	29.3	30	0.7	-0.55	28.75	36	7.25

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 except for apparatus complying under RSS-287;
(b) Unwanted emissions that fall into restricted bands shall comply with the limits specified in RSS-Gen; and
(c) Unwanted emissions that do not fall within the restricted frequency bands 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, 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	January 18, 2017	Temperature	21 °C
Test engineer	Feng You	Air pressure	1009 mbar
Verdict	Pass	Relative humidity	48 %

8.3.3 Observations, settings and special notes

The spectrum was searched from 30 MHz to the 10th harmonic.
EUT was set to transmit with 100 % duty cycle.
Radiated measurements were performed at a distance of 3 m.

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

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

Resolution bandwidth:	1 MHz
Video bandwidth:	10 Hz
Detector mode:	Peak
Trace mode:	Max Hold

Spectrum analyser settings for conducted spurious emissions measurements:

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

8.3.4 Test data

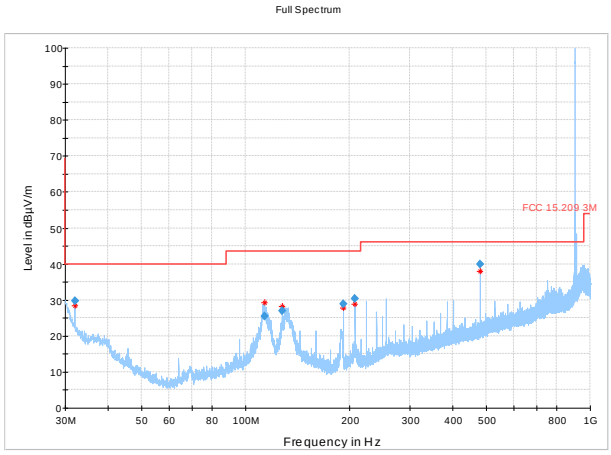


Figure 8.3.1: Radiated spurious emissions, low channel, Top Antenna

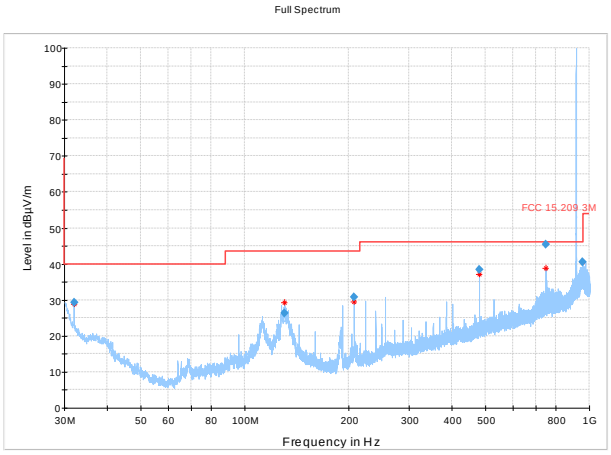
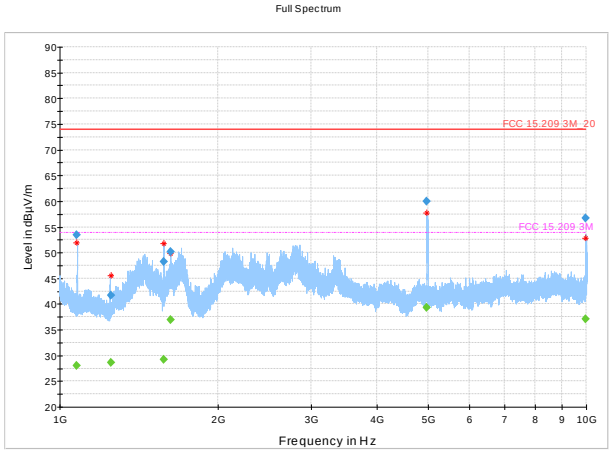
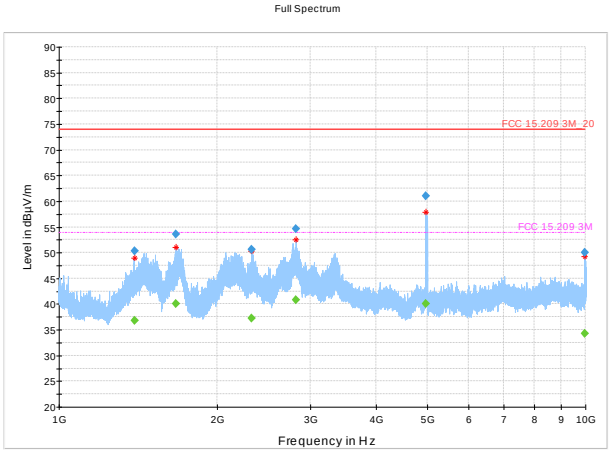


Figure 8.3.2: Radiated spurious emissions, mid channel, Top Antenna





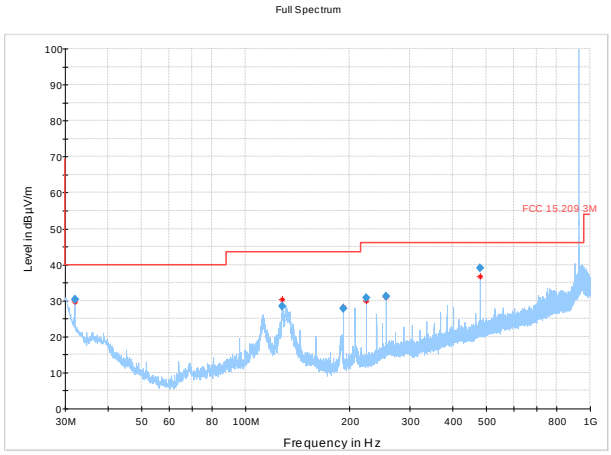


Figure 8.3.3: Radiated spurious emissions, high channel, Top Antenna

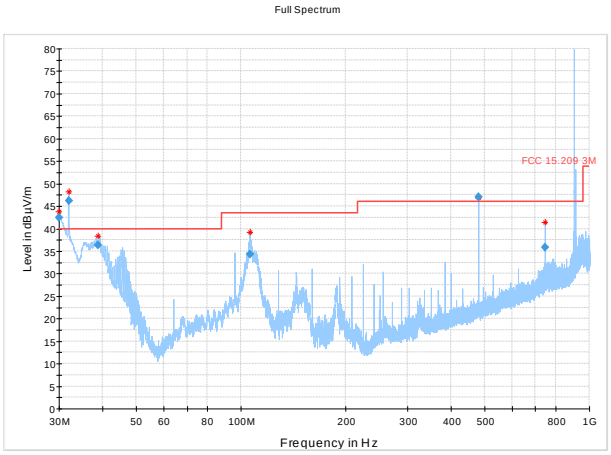
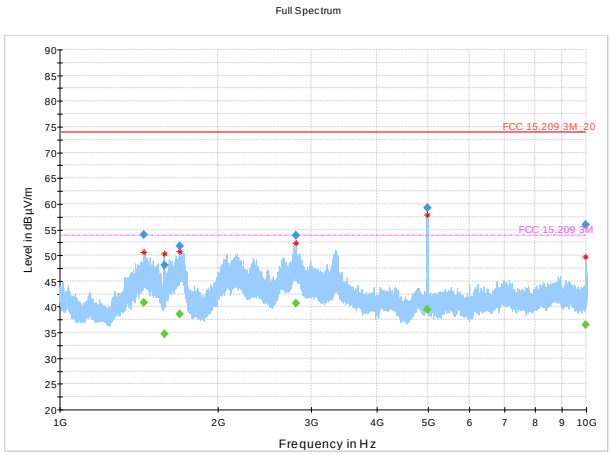
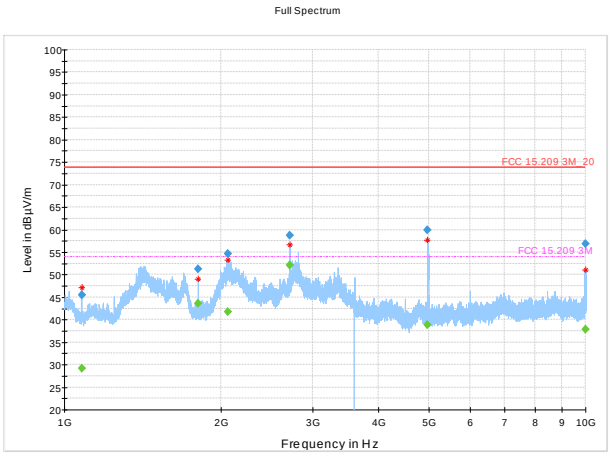
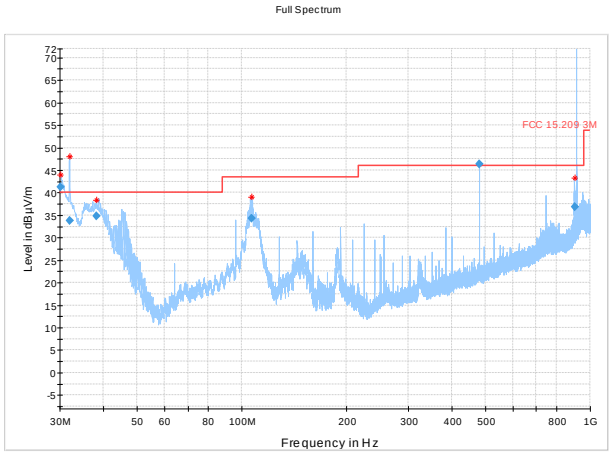
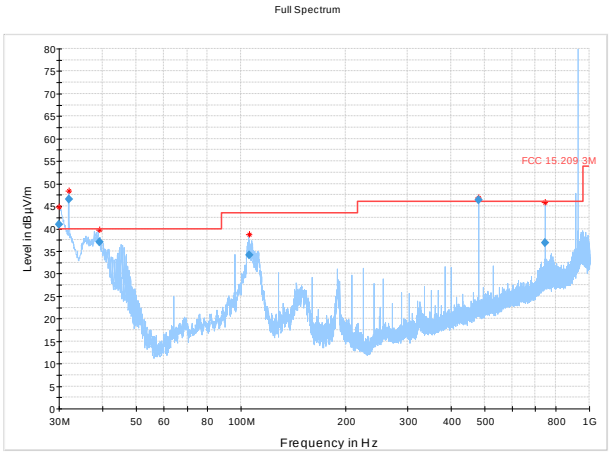


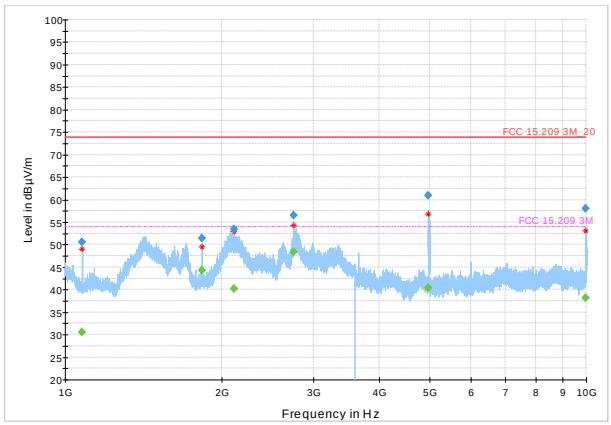
Figure 8.3.4: Radiated spurious emissions, low channel, Large Drawer











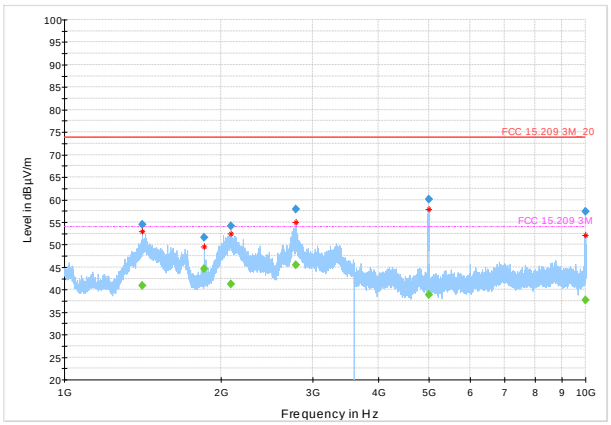


Figure 8.3.5: Radiated spurious emissions, mid channel, Large Drawer

Figure 8.3.6: Radiated spurious emissions, high channel, Large Drawer

Peaks within 902-928MHz are transmitter fundamentals.

Table 8.3-4: Radiated field strength measurement results for low channel, Top Antenna

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
32.008500	29.68	40.00	10.32	1000.0	120.000	147.7	V	54.0
113.448500	25.38	43.50	18.12	1000.0	120.000	146.0	V	0.0
127.998500	26.90	43.50	16.60	1000.0	120.000	107.7	V	174.0
192.058500	28.79	43.50	14.71	1000.0	120.000	107.0	H	16.0
208.063500	30.40	43.50	13.10	1000.0	120.000	106.6	H	75.0
480.100000	39.92	46.00	6.08	1000.0	120.000	181.4	H	194.0

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
1077.953333	---	28.09	53.90	25.81	5000.0	1000.000	163.4	H	179.0
1077.953333	53.45	---	73.90	20.45	5000.0	1000.000	163.4	H	179.0
1249.206667	---	28.58	53.90	25.32	5000.0	1000.000	228.7	V	216.0
1249.206667	41.71	---	73.90	32.19	5000.0	1000.000	228.7	V	216.0
1576.080000	48.28	---	73.90	25.62	5000.0	1000.000	184.4	V	160.0
1576.080000	---	29.29	53.90	24.61	5000.0	1000.000	184.4	V	160.0
1621.286667	---	36.93	53.90	16.97	5000.0	1000.000	101.6	H	152.0
1621.286667	50.11	---	73.90	23.79	5000.0	1000.000	101.6	H	152.0
4978.093333	---	39.38	53.90	14.52	5000.0	1000.000	118.3	H	223.0
4978.093333	60.01	---	73.90	13.89	5000.0	1000.000	118.3	H	223.0
9962.600000	56.78	---	73.90	17.12	5000.0	1000.000	144.7	H	176.0
9962.600000	---	37.03	53.90	16.87	5000.0	1000.000	144.7	H	176.0

Table 8.3-5: Radiated field strength measurement results for mid channel, Top Antenna

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
32.008500	29.24	40.00	10.76	1000.0	120.000	185.4	V	137.0
130.261000	26.25	43.50	17.25	1000.0	120.000	102.4	V	202.0
208.063500	30.72	43.50	12.78	1000.0	120.000	119.3	H	72.0
480.100000	38.35	46.00	7.65	1000.0	120.000	128.4	V	149.0
746.995500	45.54	46.00	0.46	1000.0	120.000	126.9	H	217.0
955.035000	40.48	46.00	5.52	1000.0	120.000	103.3	V	185.0

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
1391.600000	50.32	---	73.90	23.58	5000.0	1000.000	113.6	H	207.0
1391.600000	---	36.85	53.90	17.05	5000.0	1000.000	113.6	H	207.0
1668.120000	53.62	---	73.90	20.28	5000.0	1000.000	211.2	H	224.0
1668.120000	---	40.09	53.90	13.81	5000.0	1000.000	211.2	H	224.0
2324.073333	50.64	---	73.90	23.26	5000.0	1000.000	109.0	V	175.0
2324.073333	---	37.27	53.90	16.63	5000.0	1000.000	109.0	V	175.0
2817.106667	54.57	---	73.90	19.34	5000.0	1000.000	137.6	H	238.0
2817.106667	---	40.83	53.90	13.07	5000.0	1000.000	137.6	H	238.0
4978.493333	61.06	---	73.90	12.84	5000.0	1000.000	100.0	V	214.0
4978.493333	---	40.05	53.90	13.85	5000.0	1000.000	100.0	V	214.0
9966.840000	50.02	---	73.90	23.88	5000.0	1000.000	202.4	H	123.0
9966.840000	---	34.33	53.90	19.57	5000.0	1000.000	202.4	H	123.0

Table 8.3-6: Radiated field strength measurement results for high channel, Top Antenna

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
32.008500	30.29	40.00	9.71	1000.0	120.000	140.6	V	10.0
128.078500	28.47	43.50	15.03	1000.0	120.000	100.0	V	198.0
192.058500	27.83	43.50	15.67	1000.0	120.000	146.8	H	31.0
224.068500	30.86	46.00	15.14	1000.0	120.000	142.9	H	329.0
256.078500	31.24	46.00	14.76	1000.0	120.000	117.4	H	264.0
480.100000	39.01	46.00	6.99	1000.0	120.000	185.3	H	186.0

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
1445.833333	---	40.76	53.90	13.14	5000.0	1000.000	115.3	H	166.0
1445.833333	54.08	---	73.90	19.82	5000.0	1000.000	115.3	H	166.0
1580.653333	---	34.69	53.90	19.21	5000.0	1000.000	104.5	H	145.0
1580.653333	48.08	---	73.90	25.82	5000.0	1000.000	104.5	H	145.0
1690.086667	---	38.60	53.90	15.30	5000.0	1000.000	264.9	H	204.0
1690.086667	51.74	---	73.90	22.16	5000.0	1000.000	264.9	H	204.0
2808.313333	53.86	---	73.90	20.04	5000.0	1000.000	121.0	H	187.0
2808.313333	---	40.69	53.90	13.21	5000.0	1000.000	121.0	H	187.0
4982.546667	59.28	---	73.90	14.62	5000.0	1000.000	139.9	H	222.0
4982.546667	---	39.53	53.90	14.37	5000.0	1000.000	139.9	H	222.0
9983.240000	---	36.52	53.90	17.38	5000.0	1000.000	141.5	H	174.0
9983.240000	55.93	---	73.90	17.97	5000.0	1000.000	141.5	H	174.0

Table 8.3-7: Radiated field strength measurement results for low channel, Large Drawer

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Note
30.000000	42.48	40.00	-2.48	5000.0	120.000	111.9	V	0.0	Not in Restricted Band
31.988500	46.18	40.00	-6.18	5000.0	120.000	100.0	V	10.0	Not in Restricted Band
38.783500	36.40	40.00	3.60	5000.0	120.000	108.6	V	195.0	Not in Restricted Band
106.171500	34.39	43.50	9.11	5000.0	120.000	100.0	V	26.0	
480.120000	47.03	46.00	-1.03	5000.0	120.000	110.1	V	143.0	Not in Restricted Band
746.855500	35.86	46.00	10.14	5000.0	120.000	187.7	V	184.0	

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
1080.300000	45.41	---	73.90	28.49	5000.0	1000.000	159.6	V	177.0
1080.300000	---	29.18	53.90	24.72	5000.0	1000.000	159.6	V	177.0
1805.400000	51.18	---	73.90	22.72	5000.0	1000.000	163.8	V	162.0
1805.400000	---	43.54	53.90	10.36	5000.0	1000.000	163.8	V	162.0
2058.500000	---	41.81	53.90	12.09	5000.0	1000.000	197.4	H	219.0
2058.500000	54.67	---	73.90	19.23	5000.0	1000.000	197.4	H	219.0
2708.200000	58.67	---	73.90	15.23	5000.0	1000.000	141.6	H	150.0
2708.200000	---	52.05	53.90	1.85	5000.0	1000.000	141.6	H	150.0
4977.400000	59.96	---	73.90	13.94	5000.0	1000.000	101.7	V	198.0
4977.400000	---	38.78	53.90	15.12	5000.0	1000.000	101.7	V	198.0
9983.500000	---	37.80	53.90	16.10	5000.0	1000.000	152.1	H	158.0
9983.500000	56.88	---	73.90	17.02	5000.0	1000.000	152.1	H	158.0

Table 8.3-8: Radiated field strength measurement results for mid channel, Large Drawer

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Note
30.200000	41.19	40.00	-1.19	5000.0	120.000	107.2	V	106.0	Not in Restricted Band
32.028500	33.86	40.00	6.14	5000.0	120.000	101.7	V	260.0	Not in Restricted Band
38.245000	34.85	40.00	5.15	5000.0	120.000	101.7	V	209.0	
106.619000	34.29	43.50	9.21	5000.0	120.000	109.5	V	0.0	
480.120000	46.36	46.00	-0.36	5000.0	120.000	101.7	V	152.0	Not in Restricted Band
902.145000	36.83	46.00	9.17	5000.0	120.000	267.4	H	233.0	

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
1078.500000	---	30.54	53.90	23.36	5000.0	1000.000	148.0	V	179.0
1078.500000	50.55	---	73.90	23.35	5000.0	1000.000	148.0	V	179.0
1829.400000	51.34	---	73.90	22.56	5000.0	1000.000	167.0	H	66.0
1829.400000	---	44.37	53.90	9.54	5000.0	1000.000	167.0	H	66.0
2108.800000	---	40.16	53.90	13.74	5000.0	1000.000	149.0	H	158.0
2108.800000	53.44	---	73.90	20.46	5000.0	1000.000	149.0	H	158.0
2744.200000	---	48.30	53.90	5.60	5000.0	1000.000	111.3	V	148.0
2744.200000	56.58	---	73.90	17.32	5000.0	1000.000	111.3	V	148.0
4978.600000	---	40.31	53.90	13.59	5000.0	1000.000	100.0	V	196.0
4978.600000	60.90	---	73.90	13.00	5000.0	1000.000	100.0	V	196.0
9982.000000	57.99	---	73.90	15.91	5000.0	1000.000	115.7	H	205.0
9982.000000	---	38.19	53.90	15.71	5000.0	1000.000	115.7	H	205.0

Table 8.3-9: Radiated field strength measurement results for mid channel, Large Drawer

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Note
30.000000	40.88	40.00	-0.88	5000.0	120.000	100.0	V	25.0	Not in Restricted Band
31.988500	46.56	40.00	-6.56	5000.0	120.000	100.0	V	231.0	Not in Restricted Band
39.298500	37.11	40.00	2.89	5000.0	120.000	109.7	V	204.0	Not in Restricted Band
105.469500	34.10	43.50	9.40	5000.0	120.000	108.9	V	0.0	
480.120000	46.42	46.00	-0.42	5000.0	120.000	104.5	V	152.0	Not in Restricted Band
746.615500	36.89	46.00	9.11	5000.0	120.000	135.0	H	214.0	

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
1410.600000	---	40.86	53.90	13.04	5000.0	1000.000	172.8	H	166.0
1410.600000	54.48	---	73.90	19.42	5000.0	1000.000	172.8	H	166.0
1854.400000	---	44.56	53.90	9.34	5000.0	1000.000	195.0	H	263.0
1854.400000	51.65	---	73.90	22.25	5000.0	1000.000	195.0	H	263.0
2085.900000	---	41.16	53.90	12.74	5000.0	1000.000	151.0	H	218.0
2085.900000	54.15	---	73.90	19.75	5000.0	1000.000	151.0	H	218.0
2781.700000	---	45.53	53.90	8.37	5000.0	1000.000	103.1	V	164.0
2781.700000	57.82	---	73.90	16.08	5000.0	1000.000	103.1	V	164.0
4998.200000	---	38.77	53.90	15.13	5000.0	1000.000	148.1	H	210.0
4998.200000	60.01	---	73.90	13.89	5000.0	1000.000	148.1	H	210.0
9992.900000	---	37.66	53.90	16.24	5000.0	1000.000	107.1	H	189.0
9992.900000	57.43	---	73.90	16.47	5000.0	1000.000	107.1	H	189.0

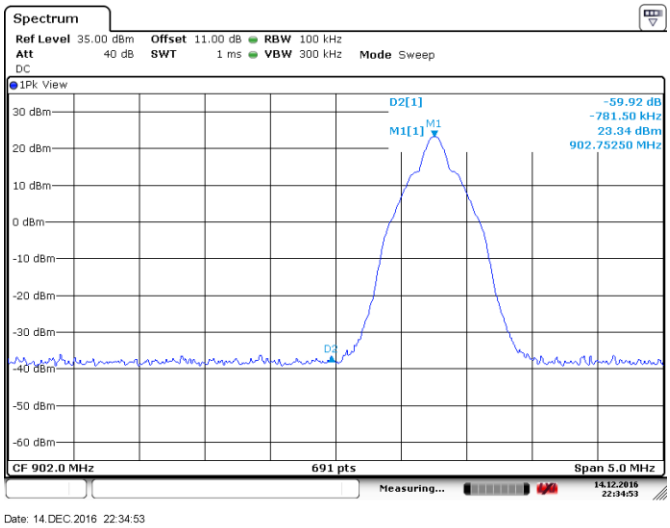


Figure 8.3.7: Low Bandedge Measurement, RF4

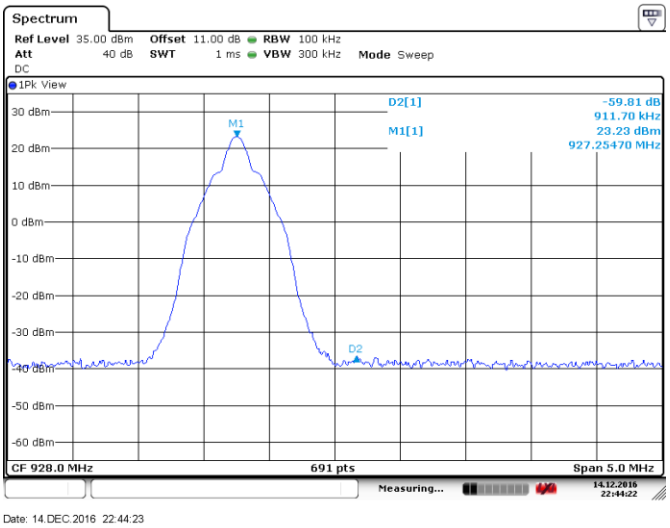


Figure 8.3.8: High Bandedge Measurement, RF4

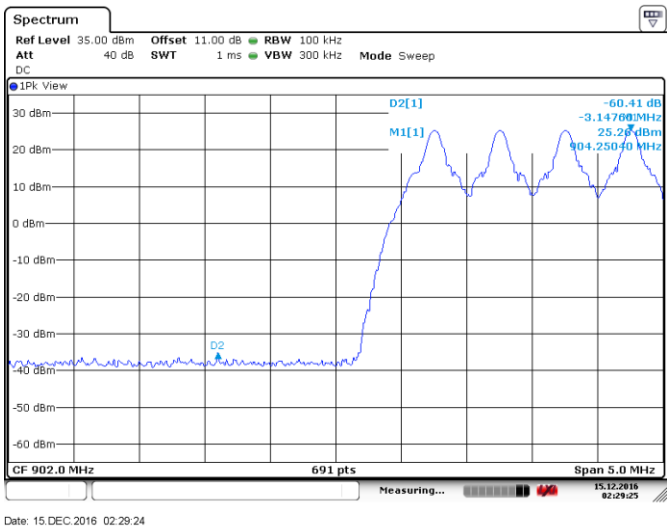


Figure 8.3.9: Low Bandedge Measurement, hopping, RF4

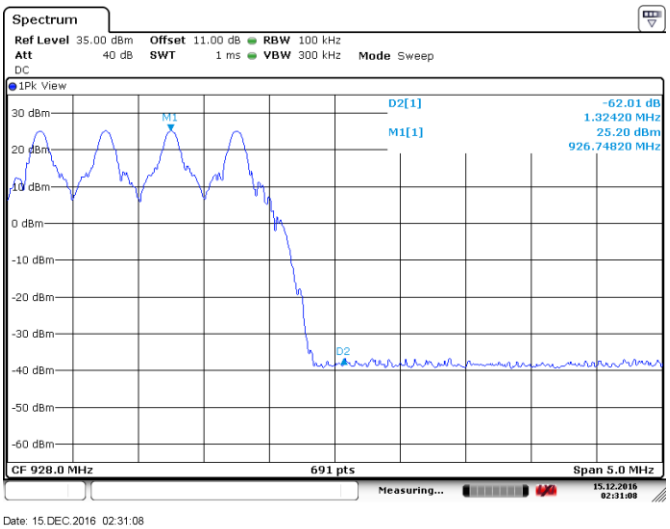


Figure 8.3.10: High Bandedge Measurement, hopping, RF4

RF4 to Top Antenna

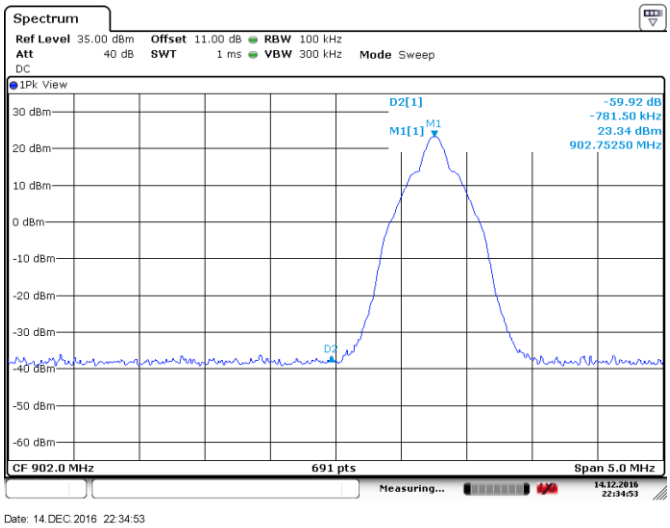


Figure 8.3.11: Low Bandedge Measurement, RF1

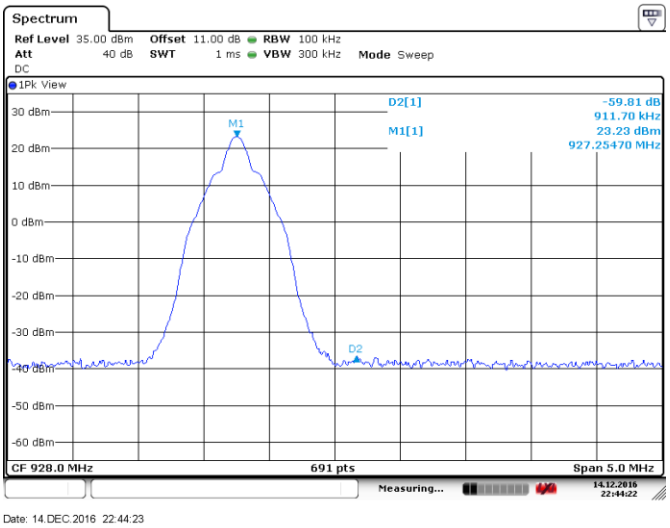


Figure 8.3.12: High Bandedge Measurement, RF1

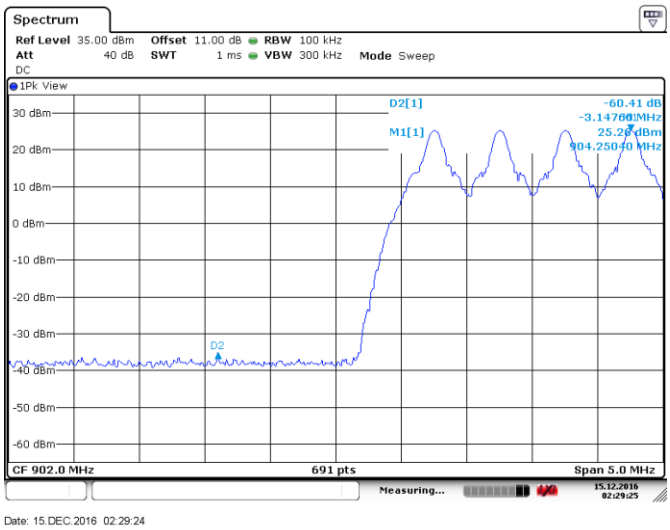


Figure 8.3.13: Low Bandedge Measurement, hopping, RF1

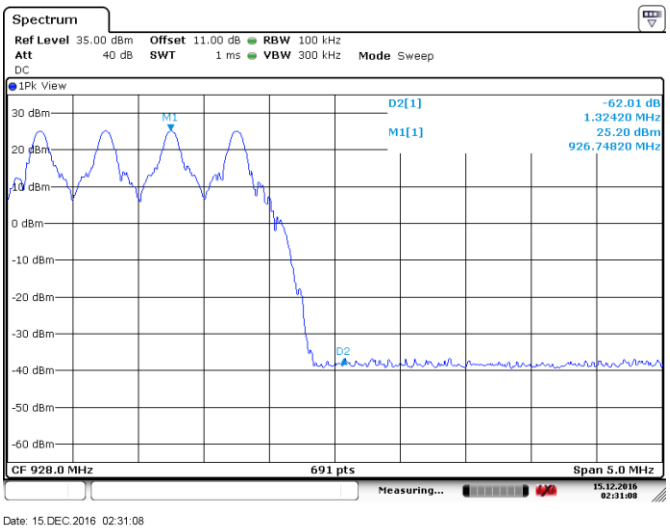


Figure 8.3.14: High Bandedge Measurement, hopping, RF1

RF1 to Large Drawer Antenna

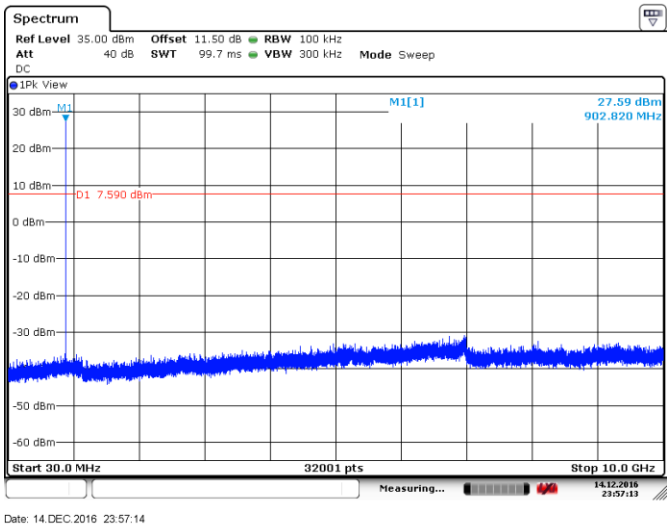


Figure 8.3.15: Conducted spurious emissions, low channel, RF1

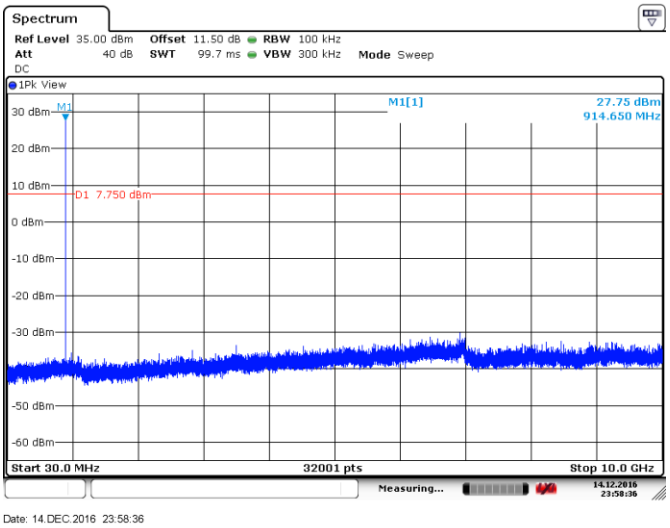


Figure 8.3.16: Conducted spurious emissions, mid channel, RF1

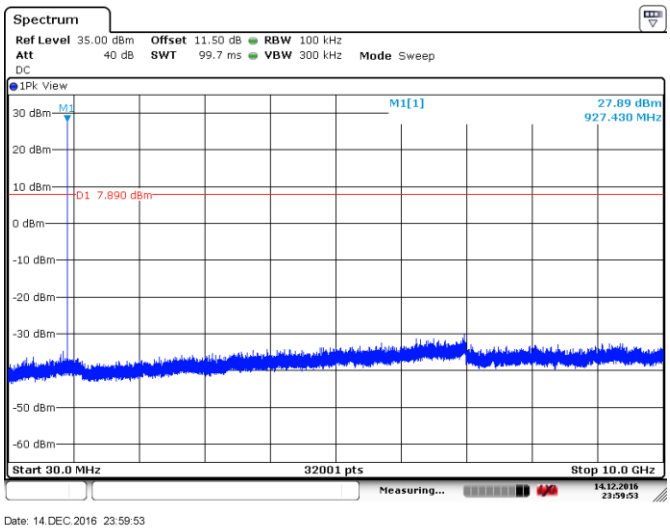


Figure 8.3.17: Conducted spurious emissions, high channel, RF1

Peaks within 902-928MHz are transmitter fundamentals.

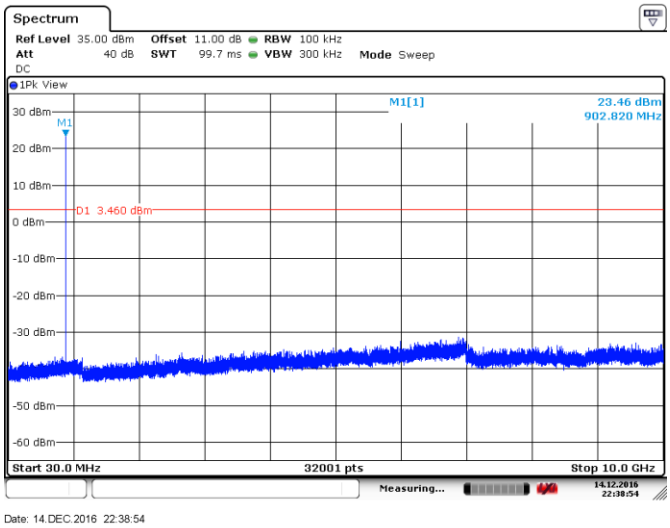


Figure 8.3.18: Conducted spurious emissions, low channel, RF4

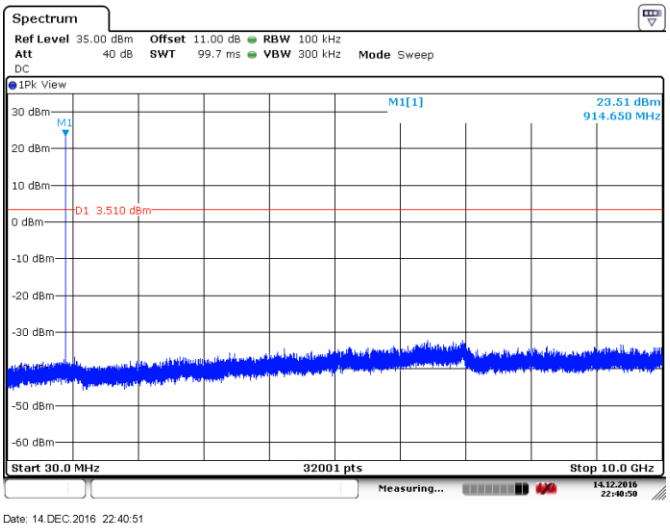


Figure 8.3.19: Conducted spurious emissions, mid channel, RF4

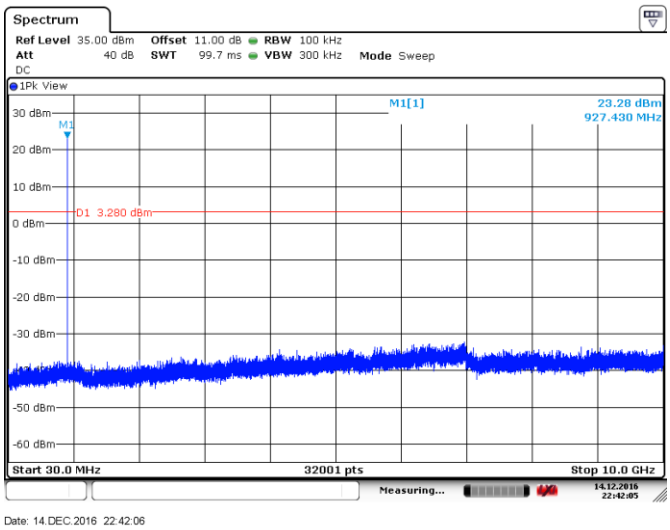


Figure 8.3.20: Conducted spurious emissions, high channel, RF4

Peaks within 902-928MHz are transmitter fundamentals.

8.4 FCC 15.247(a)(1)(i) and RSS-247 5.1(3) Frequency hopping systems in the 902-928MHz

8.4.1 Definitions and limits

FCC:
(i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz..
IC:
For FHSs in the band 902-928 MHz: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping channels and the average time of occupancy on any channel shall not be greater than 0.4 seconds within a 20-second period. If the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping channels and the average time of occupancy on any channel shall not be greater than 0.4 seconds within a 10-second period. The maximum 20 dB bandwidth of the hopping channel shall be 500 kHz.

8.4.2 Test summary

Test date	December 15, 2016	Temperature	22 °C
Test engineer	Feng You	Air pressure	1003 mbar
Verdict	Pass	Relative humidity	55 %

8.4.3 Observations, settings and special notes

The test was performed using EUT set to normal hopping operation.

8.4.4 Test data

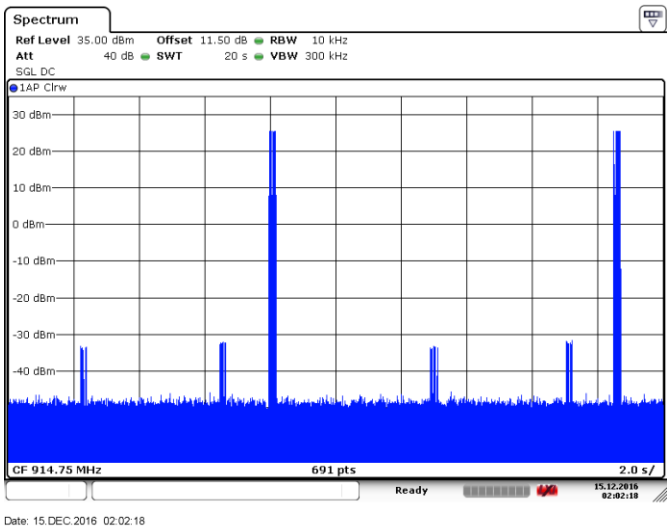


Diagram 8.4-1: Pulse count in 20s, 914.75MHz

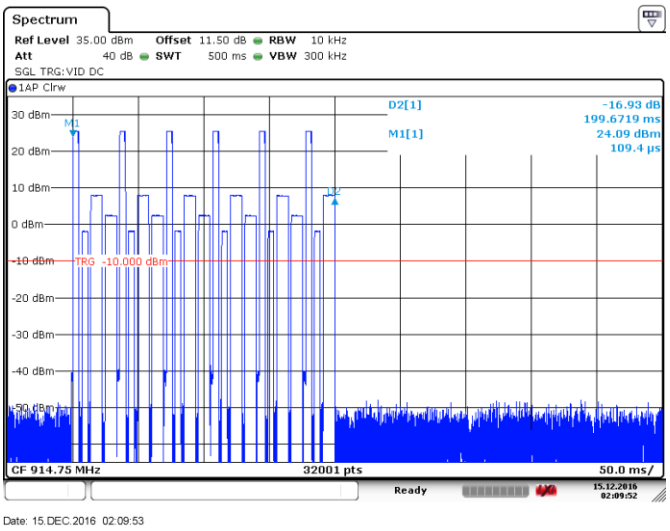


Diagram 8.4-2: Pulse width, 914.75MHz

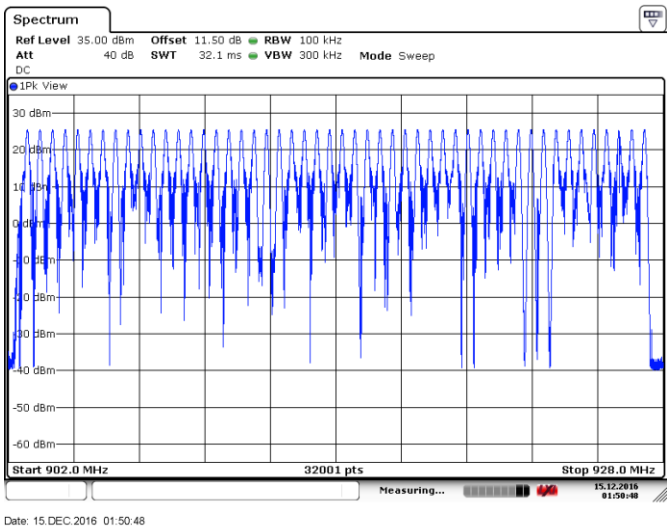


Diagram 8.4-3: Hopping channels 50

Table 8.4-1: **Time of occupancy**

Frequency MHz	Pulse count in 20s	Pulse width (ms)	Time of occupancy Time (ms)	Limit (ms)	Margin (ms)
902.6	2	199.67	399.34	400	0.66

Table 8.4: **Hopping Frequencies**

Minimum Hopping Frequencies	Measured Hopping Frequencies	Result
50	50	Pass

8.5 FCC 15.247(a) (1) and RSS-247 5.1(2) Carrier frequency separation

8.5.1 Definitions and limits

FCC and IC:

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

8.5.2 Test summary

Test date	December 15, 2016	Temperature	22 °C
Test engineer	Feng You	Air pressure	1003 mbar
Verdict	Pass	Relative humidity	55 %

8.5.3 Observations, settings and special notes

Spectrum analyser settings:

Resolution bandwidth	100 kHz
Video bandwidth	≥ RBW
Frequency span	4 MHz
Detector mode	Peak
Trace mode	Max Hold

RF Conducted Test with RF Test Board.

8.5.4 Test data

Table 8.5-1: **Hopping Frequency Separation**

Modulation	Frequency, kHz	Minimum, kHz (20dB OBW)	Margin, kHz
FSK	500.7	441.4	59.3

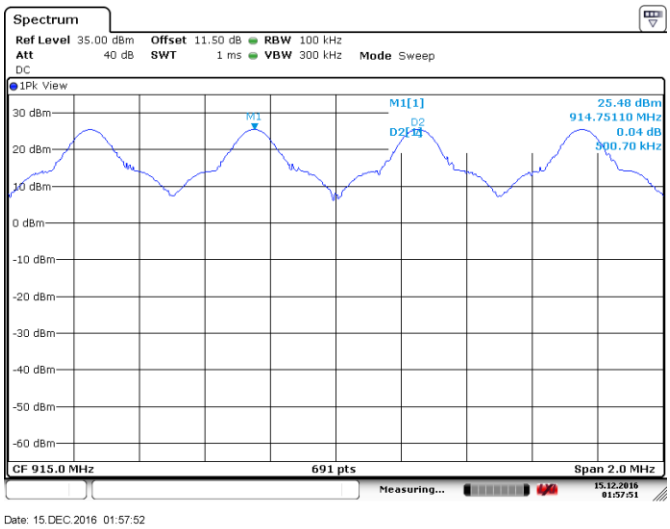


Figure 8.5-1: Hopping Frequency Separation

8.6 FCC 15.207(a) AC power line conducted emissions limits

8.6.1 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 µH/50 Ω 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 Ω/50 µH line impedance stabilization network (LISN).

Table 8.6-1: Conducted emissions limit

Frequency of emission (MHz)	Conducted limit (dBµV)	
	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.

8.6.2 Test summary

Test date	December 15, 2016	Temperature	22 °C
Test engineer	Feng You	Air pressure	1003 mbar
Verdict	Pass	Relative humidity	55 %

8.6.3 Observations, settings and special notes

This is tested with Low CH TX on.

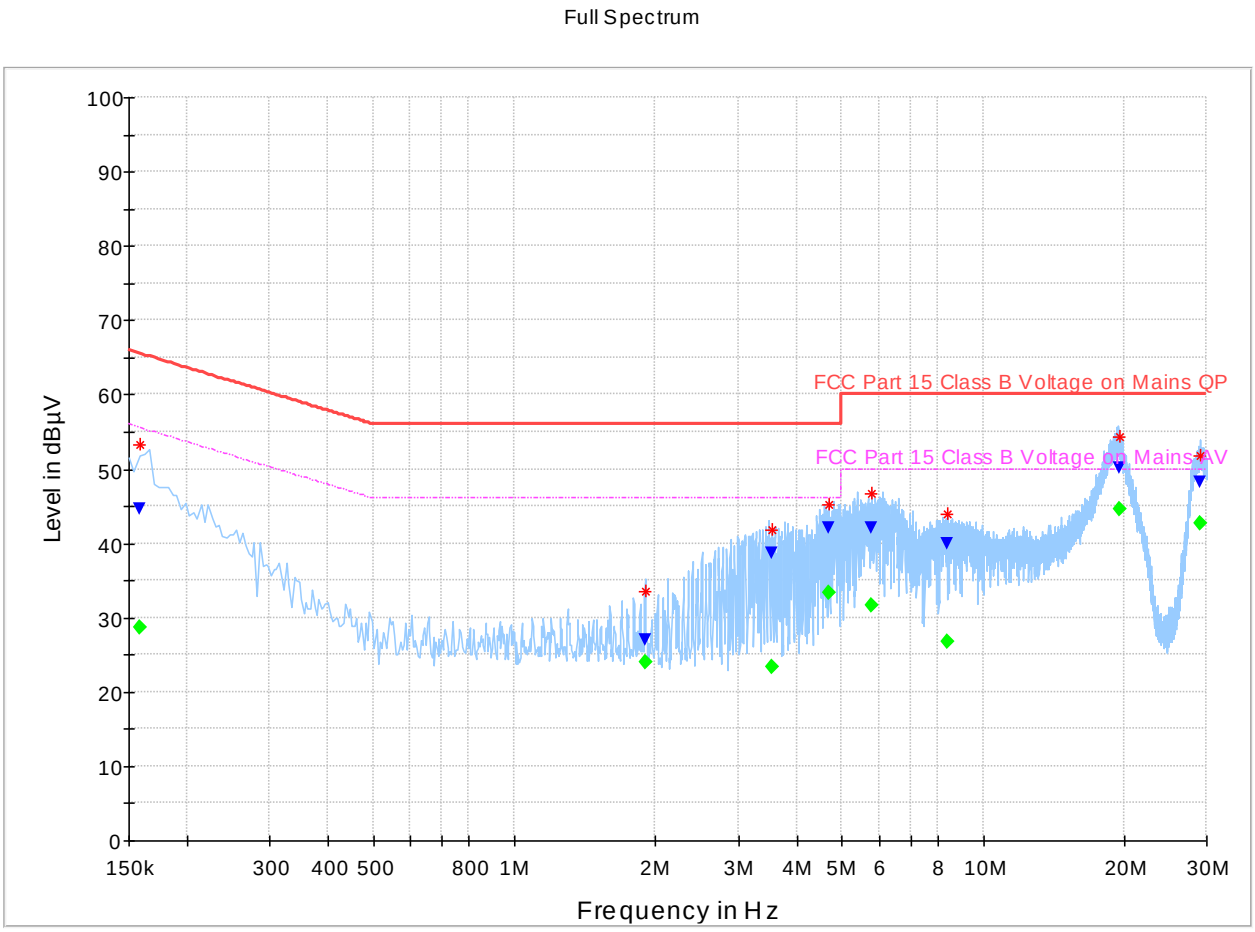
The spectral scan has been corrected with transducer factors (i.e. cable loss, LISN factors, and attenuators) for determination of compliance.

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

8.6.4 Test data



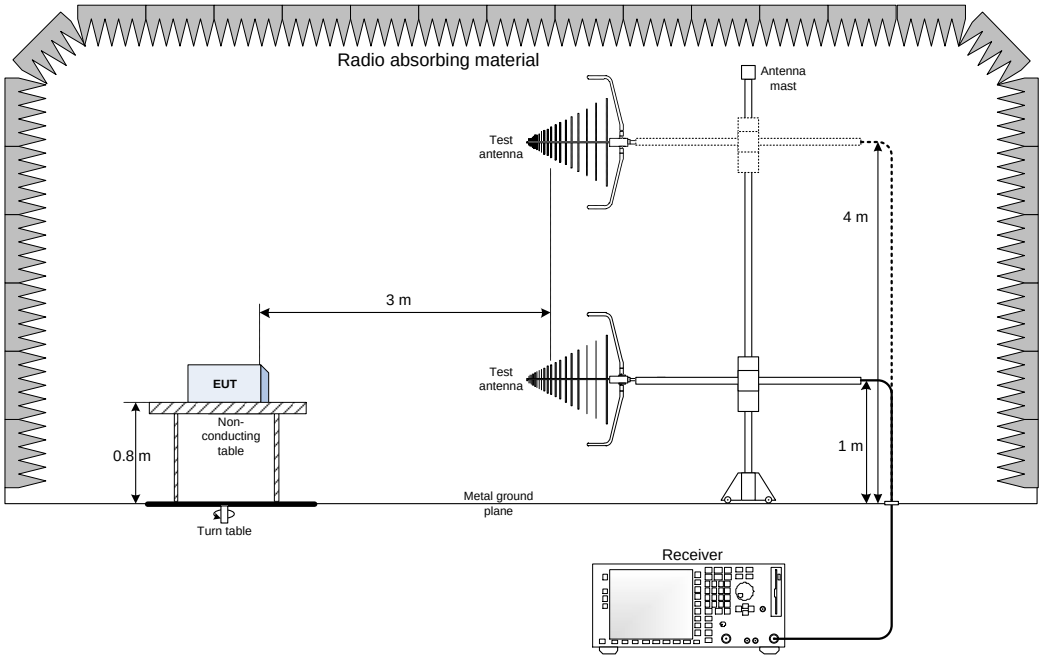
Plot 8.6-1: Conducted emissions

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

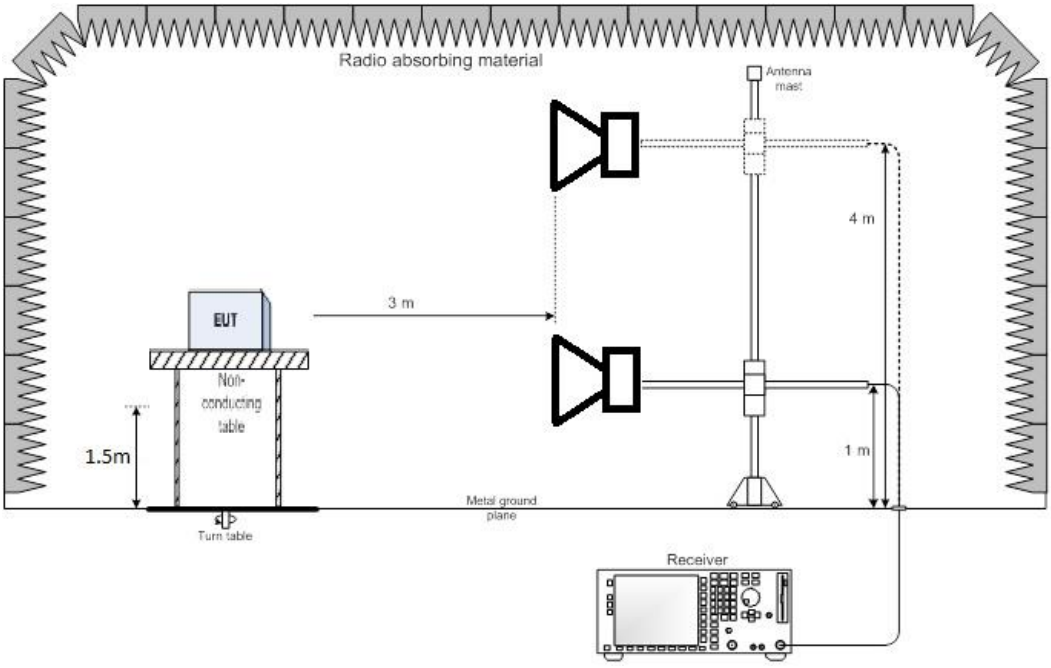
Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter
0.158000	---	28.70	55.57	26.87	5000.0	9.000	L1	ON
0.158000	44.52	---	65.57	21.05	5000.0	9.000	L1	ON
1.896500	27.03	---	56.00	28.97	5000.0	9.000	N	ON
1.896500	---	24.09	46.00	21.91	5000.0	9.000	N	ON
3.548500	---	23.45	46.00	22.55	5000.0	9.000	N	ON
3.548500	38.62	---	56.00	17.38	5000.0	9.000	N	ON
4.688500	41.98	---	56.00	14.02	5000.0	9.000	N	ON
4.688500	---	33.39	46.00	12.61	5000.0	9.000	N	ON
5.784500	---	31.63	50.00	18.37	5000.0	9.000	N	ON
5.784500	41.97	---	60.00	18.03	5000.0	9.000	N	ON
8.407500	39.97	---	60.00	20.03	5000.0	9.000	N	ON
8.407500	---	26.75	50.00	23.25	5000.0	9.000	N	ON
19.492500	50.04	---	60.00	9.96	5000.0	9.000	L1	ON
19.492500	---	44.60	50.00	5.40	5000.0	9.000	L1	ON
29.040500	---	42.63	50.00	7.37	5000.0	9.000	N	ON
29.040500	48.15	---	60.00	11.85	5000.0	9.000	N	ON

Section 9. Block diagrams of test set-ups

9.1 Radiated emissions set-up



30-1000MHz Setup



Above 1GHz Setup

End of Report