EMC Test Report

Tested in accordance with
Federal Communications Commission (FCC)
Personal Communications Services
CFR 47, Parts 15.107, 15.109
&
Industry Canada (IC), ICES-003

(This report is generated for model RHD131LW (STR100-1))

REPORT NO.: RTS-6063-1502-15A

PRODUCT MODEL NO.: RHC161LW (STR100-2), RHD131LW (STR100-1)
TYPE NAME: BlackBerry® smartphone
FCC ID: L6ARHC160LW, L6ARHD130LW
IC: 2503A-RHC160LW

DATE: February 27, 2015

RTS is accredited
according to
EN ISO/IEC 17025 by:

592

Statement of Performance:

The BlackBerry® smartphone, model RHC161LW (STR100-2), part number DVT Rev3-01 and accessories when configured and operated per BlackBerry's operation instructions, performs within the requirements of the test standards.

The BlackBerry® smartphone, model RHD131LW (STR100-1), part number DVT Rev3-01 and accessories when configured and operated per BlackBerry's operation instructions, performs within the requirements of the test standards.

Declaration:

We hereby certify that:
The test data reported herein is an accurate record of the performance of the sample(s) tested.
The test results are valid for the tested unit(s) only.
The test equipment used was suitable for the tests performed and within manufacturer's published specifications and operating parameters.
The test methods were consistent with the methods described in the relevant standards.

Documented by:

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Reviewed and Approved by:

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A. Scope

This report details the results of compliance tests that were performed in accordance with the requirements of:

- FCC CFR 47 Part 15, Subpart B, October, 2014 Class B Digital Devices, Unintentional Radiators
- IC ICES-003 Issue 5, August 2012, Information Technology Equipment (ITE) – Limits and methods of measurement

B. Associated Documents

1) BlackBerrySystemSimilarity_RHC161LW_RHD131LW_r0.3

C. Product Identification

Manufactured by Wistron Mobile Solutions located at:

2550 W. Golf Rd Suite 400
Rolling Meadows, IL
USA, 60008
Phone: +1 (847) 258-2611

The equipment under test (EUT) was tested at the following locations:

BlackBerry RTS EMC test facilities:

305 Phillip Street
Waterloo, Ontario
Canada, N2L 3W8
Phone: 519 888 7465
Fax: 519 888 6906

440 Phillip Street
Waterloo, Ontario
Canada, N2L 5R9
Phone: 519 888 7465
Fax: 519 888 6906

The testing was performed from February 23 to 27, 2015.

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The sample EUT included:

SAMPLE	MODEL	HARDWARE	PIN	Software
1	RHC161LW (STR100-2)	DVT Rev3-01	2FFE7803	OS Version: 10.3.1.2174 Radio Version: 10.3.1.2175 SW Release Version: 10.3.1.1518
2	RHC161LW (STR100-2)	DVT Rev3-01	2FFE7804	OS Version: 10.3.1.2174 Radio Version: 10.3.1.2175 SW Release Version: 10.3.1.1518
3	RHC161LW (STR100-2)	DVT Rev3-01	2FFE780A	OS Version: 10.3.1.2174 Radio Version: 10.3.1.2175 SW Release Version: 10.3.1.1518
4	RHC161LW (STR100-2)	DVT Rev3-01	2FFE7801	OS Version: 10.3.1.2174 Radio Version: 10.3.1.2175 SW Release Version: 10.3.1.1518
5	RHD131LW (STR100-1)	DVT Rev3-01	2FFE7815	OS Version: 10.3.1.2174 Radio Version: 10.3.1.2175 SW Release Version: 10.3.1.1518
6	RHD131LW (STR100-1)	DVT Rev3-01	2FFE7828	OS Version: 10.3.1.2174 Radio Version: 10.3.1.2175 SW Release Version: 10.3.1.1518
7	RHD131LW (STR100-1)	DVT Rev3-01	2FFE7844	OS Version: 10.3.1.2174 Radio Version: 10.3.1.2175 SW Release Version: 10.3.1.1518
8	RHD131LW (STR100-1)	DVT Rev3-01	2FFE7813	OS Version: 10.3.1.2174 Radio Version: 10.3.1.2175 SW Release Version: 10.3.1.1518

AC Powerline conducted testing was performed on samples 1, 2, 5 and 6.
Radiated Emissions testing was performed on samples 1, 2, 3, 4, 5, 6, 7 and 8.

The characteristics that may have been affected by the changes from RHC161LW to RHD131LW were verified/re-tested.
For more details, refer to BlackBerrySystemSimilarity_RHC161LW_RHD131LW_r0.3.

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BlackBerry® smartphone Accessories Tested

1) Fixed Blade Charger, part number HDW-46445-00x with an output voltage of 5.0 volts dc, 850mA
2) Alt. Fixed Blade Charger, part number HDW-58920-00x with an output voltage of 5.0 volts dc, 1300mA
3) Headset, part number HDW-49299-00x, with a lead length of 1.1 metres
4) Alt. Headset, part number HDW-44306-00x, with a lead length of 1.1 metres
5) USB Data Cable, part number HDW-50071-00x, 1.2 metres long
6) Alt. USB Data Cable, part number HDW-51800-00x, 1.2 metres long

D. Support Equipment Used for the Testing of the EUT

1) Lenovo Thinkpad laptop, type 4236-D84, S/N PB-HX502 12/02, product ID 4236D84

E. Summary of Results

SPECIFICATION		TEST TYPE	Meets Requirement	Test Data APPENDIX
FCC CFR 47	IC			
Part 15.107	ICES-003,6.1	AC Powerline Conducted Emission	Yes	1
Part 15.109	ICES-003,6.2	Radiated Unintentional Spurious Emissions	Yes	2

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a) AC POWERLINE CONDUCTED EMISSIONS

The AC Powerline conducted emissions were measured using the test procedure outlined in CISPR Recommendation 22 through a 50 Ohm Line Impedance Stabilization Network (LISN), which was inserted in the power line to the equipment to provide the specified impedance for measurements. The EUT was placed on a nonconductive wooden table, 80 cm high that was positioned 40 cm from a vertical ground plane. The RF output of the network was connected to an EMI receiver system with characteristics that duplicate those of the receiver specified in CISPR Publication 16.
BlackBerry® smartphone was in battery charging mode. The input voltage was 120 V, 60 Hz.

The following test configurations were measured for model RHC161LW (STR100-2):

Test Configuration	Operating Mode(s)	Charger + Accessories
1	PCS 1900, Idle, Charging and Video Playback	Fixed Blade Charger + Headset + USB Cable
2	LTE FDD 2, Idle, Charging and Audio Playback	Alt. Headset + Alt. USB Cable + Laptop
3	UMTS FDD II HSDPA+, Idle, Charging and Audio Playback	Alt. Fixed Blade Charger + Alt. Headset + Alt. USB Cable
4	UMTS FDD IV DC HSDPA, Idle, Charging and Video Playback	Fixed Blade Charger + Alt. Headset + USB Cable
5	FM, Idle, Charging and Audio Playback	Alt. Fixed Blade Charger + Headset + Alt. USB Cable

The sample EUT's AC Powerline conducted emissions were compared with respect to the FCC CFR 47 Part 15.107, Class B Limit, and IC ICES-003, 6.1. The sample EUT had a worst case test margin of 11.13 dB below the QP limit at 0.483 MHz using the QP detector in Test Configuration 3.

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The following test configurations were measured for model RHD131LW (STR100-1):

Test Configuration	Operating Mode(s)	Charger + Accessories
6	PCS 1900, Idle, Charging and Video Playback	Fixed Blade Charger + Headset + USB Cable
7	UMTS FDD II, Idle, Charging and Audio Playback	Alt. Fixed Blade Charger + Alt. Headset + Alt. USB Cable

The sample EUT's AC Powerline conducted emissions were compared with respect to the FCC CFR 47 Part 15.107, Class B Limit, and IC ICES-003, 6.1. The sample EUT had a worst case test margin of 11.79 dB below the QP limit at 2.319 MHz using the QP detector in Test Configuration 6.

Measurement Uncertainty ±3.2 dB

To view the test data/plots, see APPENDIX 1.

b) RADIATED UNINTENTIONAL SPURIOUS EMISSIONS

The radiated unintentional spurious emissions from the EUT were measured using the methods outlined in CISPR Recommendation 22. The EUT was placed on a nonconductive Styrofoam table, 80 cm high that was positioned on a remote controlled turntable. The test distance used between the EUT and the receiving antenna was three metres. The turntable was rotated to determine the azimuth of the peak emissions. Then the emissions were maximized by elevating the antenna in the range of 1 to 4 metres. The maximum emission level was recorded. The radiated emissions were measured up to the fifth harmonic of the highest frequency of the band tested. Both the horizontal and vertical polarizations of the emissions were measured.

The measurements were done in a semi-anechoic chamber (SAC) below 1 GHz and a modified semi-anechoic chamber (modified SAC) with floor absorbers above 1 GHz. The SAC's FCC registration number is **778487** and the Industry Canada (IC) file number is **2503B-1**. The modified SAC's FCC registration number is **959115** and the IC file number is **2503C-1**.

The EUT was configured and operated to produce the maximum radiated emissions while still keeping within BlackBerry's specifications.

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The BlackBerry® smartphone was in battery charging mode for all configurations. The ac input voltage was 120V, 60Hz.
The following test configurations were measured for model RHC161LW (STR100-2):

Test Configuration	Operating Mode(s)	Charger + Accessories
1	PCS 1900, Idle, Charging and Video Playback	Fixed Blade Charger + Headset + USB Cable
2	LTE FDD 2, Idle, Charging and Audio Playback	Alt. Headset + Alt. USB Cable + Laptop
3	UMTS FDD II HSDPA+, Idle, Charging and Audio Playback	Alt. Fixed Blade Charger + Alt. Headset + Alt. USB Cable
4	UMTS FDD IV DC HSDPA, Idle, Charging and Video Playback	Fixed Blade Charger + Alt. Headset + USB Cable
5	FM, Idle, Charging and Audio Playback	Alt. Fixed Blade Charger + Headset + Alt. USB Cable
6	Bluetooth, Tx, Charging and Video Playback	Fixed Blade Charger + Alt. Headset + Alt. USB Cable
7	802.11b, Tx, Charging and Audio Playback	Alt. Fixed Blade Charger + Headset + USB Cable

The system's radiated emission levels were compared with respect to the FCC CFR 47 Part 15.109, Class B limit and IC ICES-003, 6.2.
The system met the requirements with a worst case emission test margin of 10.88 dB below the QP limit at 237.95 MHz using QP detector in Test Configuration 2.

The following test configurations were measured for model RHD131LW (STR100-1):

Test Configuration	Operating Mode(s)	Charger + Accessories
8	PCS 1900, Idle, Charging and Video Playback	Fixed Blade Charger + Headset + USB Cable
9	UMTS FDD II, Idle, Charging and Audio Playback	Alt. Fixed Blade Charger + Alt. Headset + Alt. USB Cable

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The system's radiated emission levels were compared with respect to the FCC CFR 47 Part 15.109, Class B limit and IC ICES-003, 6.2.
The system met the requirements with a worst case emission test margin of 17.09 dB below the QP limit at 35.35 MHz using QP detector in Test Configuration 8.

Measurement Uncertainty ±4.2 dB

To view the test data see APPENDIX 2.

Sample Calculation:

Field Strength (dBµV/m) is calculated as follows:
FS = Measured Level (dBµV) + A.F. (dB/m) + Cable Loss (dB) - Preamp (dB) + Filter Loss (dB)

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F. Compliance Test Equipment Used

UNIT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL DUE DATE (YY MM DD)	USE
Preamplifier	Sonoma	310N/11909A	185831	15-10-22	Radiated Emissions
Preamplifier system	TDK RF Solutions	PA-02	080010	15-10-22	Radiated Emissions
EMI Receiver	Rohde & Schwarz	ESIB 40	100255	15-12-05	Radiated Emissions
Environment Monitor	OMEGA	iTHX-SD	0380561	16-11-15	Radiated Emission
Environment Monitor	OMEGA	iTHX-SD	0380567	16-11-15	Radiated Emission
L.I.S.N.	Rohde & Schwarz	ENV216	100060	15-10-08	AC Powerline Conducted Emissions
Hybrid Log Antenna	EMC Automation	HLP-3003C	017401	16-02-03	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030101	16-08-14	Radiated Emissions
Preamplifier	Rohde & Schwarz	TS-ANA-SP	001	15-09-10	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	837493/073	15-12-09	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	112394	15-12-05	Radiated/AC Powerline Conducted Emission
Universal Radio Communication Tester	Rohde & Schwarz	CMW500	101469	16-11-27	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMW500	109949	16-11-27	Radiated /RF Conducted Emission
EMI Test Receiver	Rohde & Schwarz	ESU 40	100162	15-12-10	Radiated/AC Powerline Conducted Emission
Bluetooth Tester	Rohde & Schwarz	CBT	100368	15-11-25	Radiated Emissions
Bluetooth Tester	Rohde & Schwarz	CBT	100737	15-11-25	Radiated/AC Powerline Conducted Emission

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G. Test Software Used

SOFTWARE	COMPANY	VERSION	USE
EMC32	Rohde & Schwarz	8.52.0	Radiated Emissions
TDK Standard Emission Test	TDK RF Solutions	8.53.1.62	Radiated Emissions

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APPENDIX 1 - AC POWERLINE CONDUCTED EMISSIONS TEST DATA

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AC Powerline Conducted Emissions Test Results

The following test configurations were measured for model RHC161LW (STR100-2):

The following tests were performed by Winston Vernon.

Test Configuration 1

Date of the test: February 25, 2015
The environmental conditions were: Temperature: 24.5 °C
Humidity: 14.4 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.209	N	27.67	10.82	38.49	63.30	53.30	-24.81
0.470	N	28.99	9.93	38.92	56.50	46.50	-17.58
0.636	L1	28.18	9.85	38.03	56.00	46.00	-17.97
1.019	L1	31.25	9.80	41.06	56.00	46.00	-14.94
1.199	N	27.74	9.80	37.54	56.00	46.00	-18.46
1.379	L1	32.00	9.80	41.81	56.00	46.00	-14.20
2.090	N	27.06	9.83	36.89	56.00	46.00	-19.11
2.382	L1	33.67	9.84	43.51	56.00	46.00	-12.49
3.696	N	24.01	9.90	33.90	56.00	46.00	-22.10
3.872	L1	28.63	9.90	38.53	56.00	46.00	-17.47

All other emissions are at least 25 dB below the limit.
Measurements were done with the quasi-peak detector.
See figure 1-1 and figure 1-2 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

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AC Powerline Conducted Emissions Test Graphs

Test Configuration 1

Figure 1-1: L1 lines

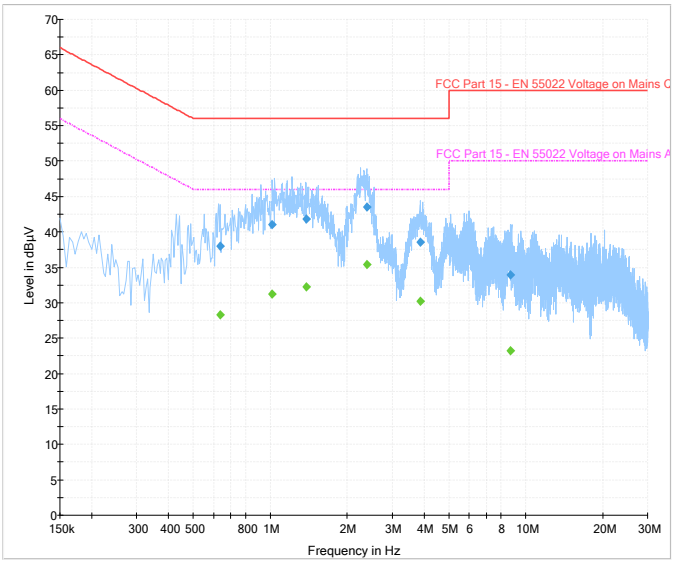
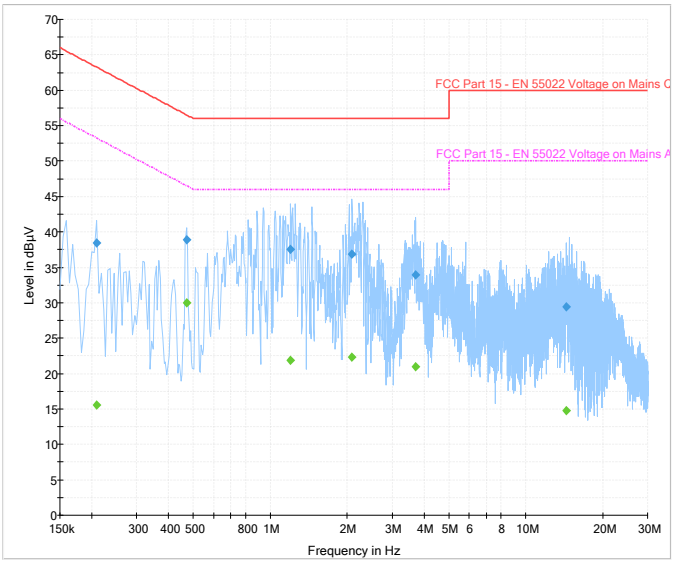


Figure 1-2: N Lines



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AC Powerline Conducted Emissions Test Results cont'd

Test Configuration 2

Date of the test: February 27, 2015
The environmental conditions were: Temperature: 24.5 °C
Humidity: 14.4 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.168	N	29.67	11.11	40.78	65.10	55.10	-24.32
0.483	L1	25.26	9.92	35.18	56.30	46.30	-21.12
0.578	L1	28.10	9.87	37.97	56.00	46.00	-18.03
1.842	N	22.35	9.82	32.17	56.00	46.00	-23.83
2.877	L1	24.38	9.87	34.25	56.00	46.00	-21.75
3.377	L1	23.75	9.89	33.63	56.00	46.00	-22.37
3.741	N	33.98	9.90	43.87	56.00	46.00	-12.13
4.038	L1	29.98	9.90	39.89	56.00	46.00	-16.12
4.254	N	33.19	9.91	43.10	56.00	46.00	-12.90

All other emissions are at least 25 dB below the limit.
Measurements were done with the quasi-peak detector.
See figure 1-3 and figure 1-4 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

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AC Powerline Conducted Emissions Test Graphs

Test Configuration 2

Figure 1-3: L1 lines

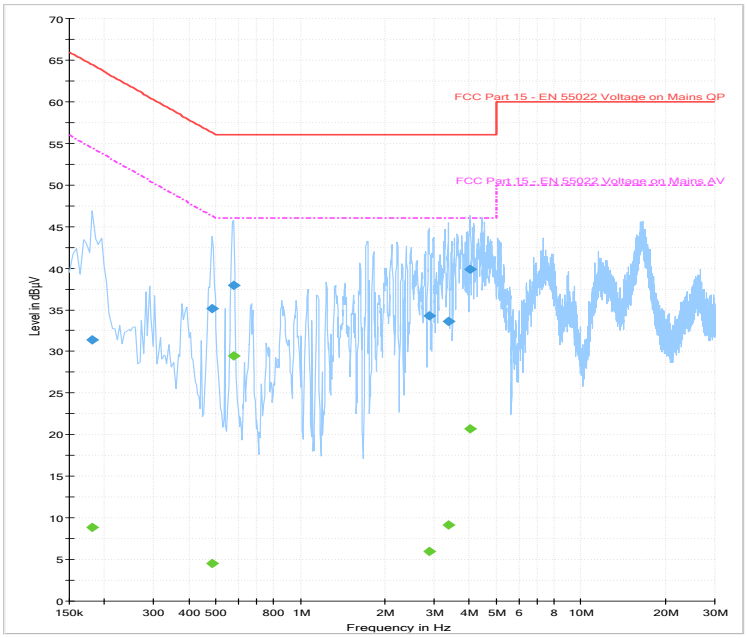
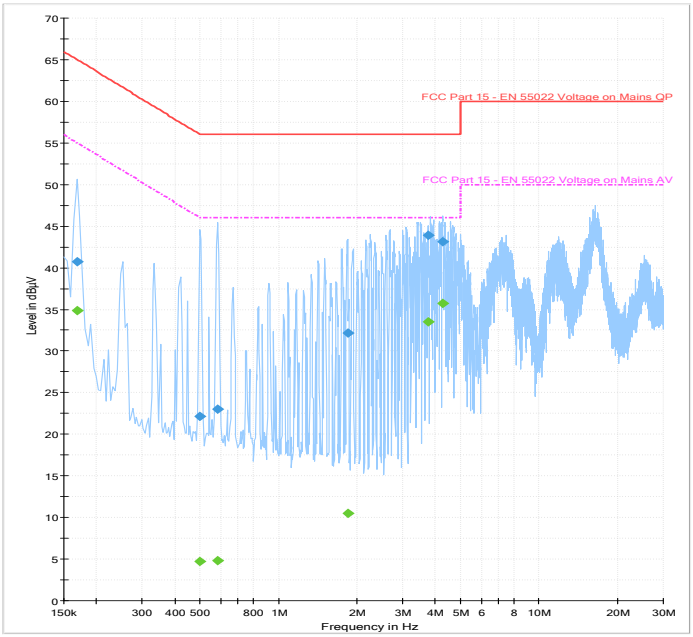


Figure 1-4: N Lines



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AC Powerline Conducted Emissions Test Results cont'd

Test Configuration 3

Date of the test: February 26, 2015
The environmental conditions were: Temperature: 24.5 °C
Humidity: 14.4 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.218	N	29.01	10.76	39.76	62.90	52.90	-23.14
0.254	L1	29.10	10.48	39.59	61.60	51.60	-22.01
0.326	L1	27.82	10.12	37.95	59.60	49.60	-21.66
0.483	L1	35.25	9.92	45.17	56.30	46.30	**-11.13**
0.483	N	33.69	9.93	43.62	56.30	46.30	-12.68
1.113	L1	31.34	9.80	41.14	56.00	46.00	-14.86
1.127	N	26.82	9.80	36.63	56.00	46.00	-19.37
1.716	N	24.73	9.82	34.55	56.00	46.00	-21.45
1.977	L1	25.45	9.82	35.27	56.00	46.00	-20.73
4.952	L1	22.87	9.91	32.78	56.00	46.00	-23.23
15.941	N	27.81	10.10	37.91	60.00	50.00	-22.09
16.571	L1	28.82	10.15	38.97	60.00	50.00	-21.03

All other emissions are at least 25 dB below the limit.
Measurements were done with the quasi-peak detector.
See figure 1-5 and figure 1-6 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

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AC Powerline Conducted Emissions Test Graphs

Test Configuration 3

Figure 1-5: L1 lines

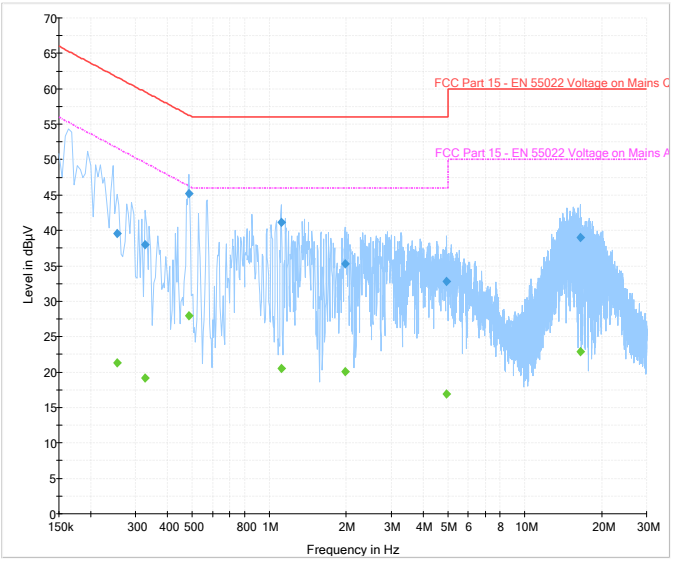
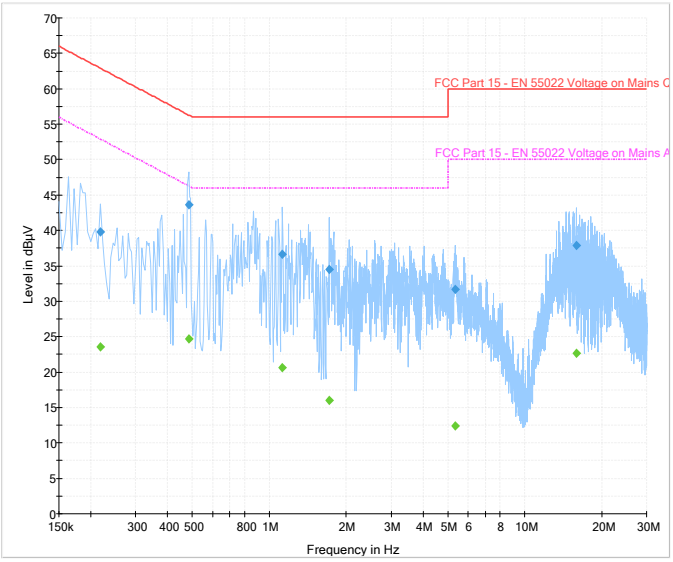


Figure 1-6: N Lines



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AC Powerline Conducted Emissions Test Results cont'd

Test Configuration 4

Date of the test: February 25, 2015
The environmental conditions were: Temperature: 24.5 °C
Humidity: 14.4 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.470	N	27.98	9.93	37.91	56.50	46.50	-18.59
0.771	L1	21.38	9.82	31.21	56.00	46.00	-24.80
0.906	N	25.61	9.81	35.42	56.00	46.00	-20.58
1.442	L1	21.68	9.80	31.48	56.00	46.00	-24.52
2.243	N	26.38	9.84	36.22	56.00	46.00	-19.78
3.341	N	22.50	9.89	32.39	56.00	46.00	-23.61

All other emissions are at least 25 dB below the limit.
Measurements were done with the quasi-peak detector.
See figure 1-7 and figure 1-8 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

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AC Powerline Conducted Emissions Test Graphs

Test Configuration 4

Figure 1-7: L1 lines

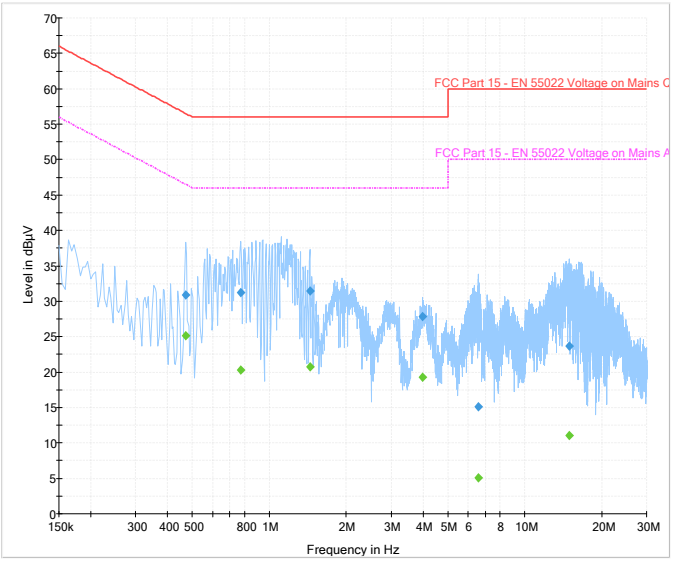
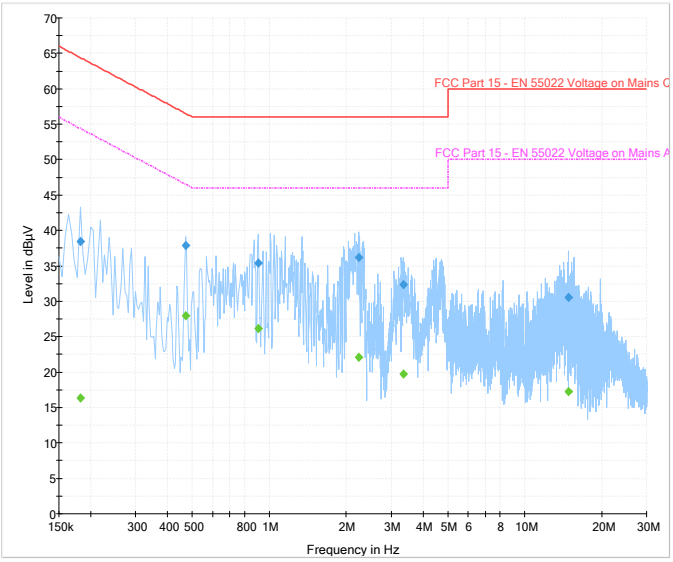


Figure 1-8: N Lines



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AC Powerline Conducted Emissions Test Results cont'd

Test Configuration 5

Date of the test: February 26, 2015
The environmental conditions were: Temperature: 24.5 °C
Humidity: 14.4 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.218	L1	29.82	10.73	40.55	62.90	52.90	-22.35
0.227	N	28.81	10.69	39.51	62.60	52.60	-23.09
0.479	N	32.64	9.93	42.57	56.40	46.40	-13.83
0.483	L1	34.20	9.92	44.12	56.30	46.30	-12.18
1.343	L1	26.57	9.80	36.38	56.00	46.00	-19.62
1.451	N	25.71	9.81	35.52	56.00	46.00	-20.48
2.697	N	24.36	9.87	34.22	56.00	46.00	-21.78
2.706	L1	24.08	9.86	33.94	56.00	46.00	-22.06
4.673	N	22.18	9.91	32.09	56.00	46.00	-23.91
15.617	L1	27.59	10.07	37.67	60.00	50.00	-22.33
16.517	N	28.92	10.16	39.08	60.00	50.00	-20.92

All other emissions are at least 25 dB below the limit.
Measurements were done with the quasi-peak detector.
See figure 1-9 and figure 1-10 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

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AC Powerline Conducted Emissions Test Graphs

Test Configuration 5

Figure 1-9: L1 lines

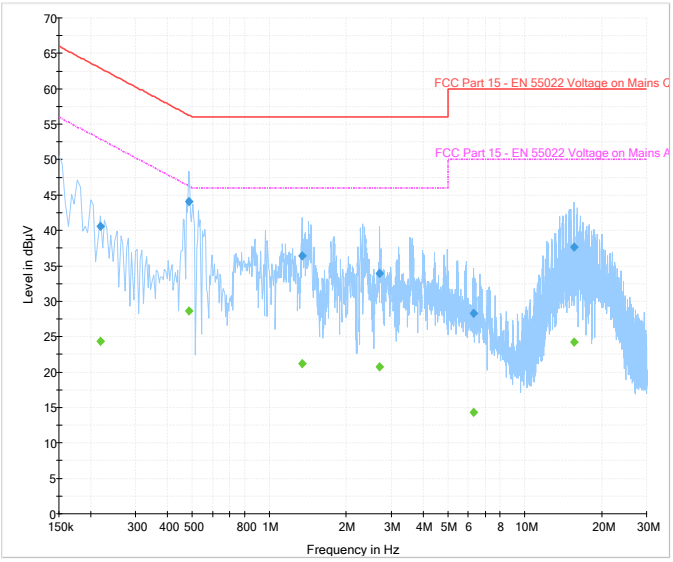
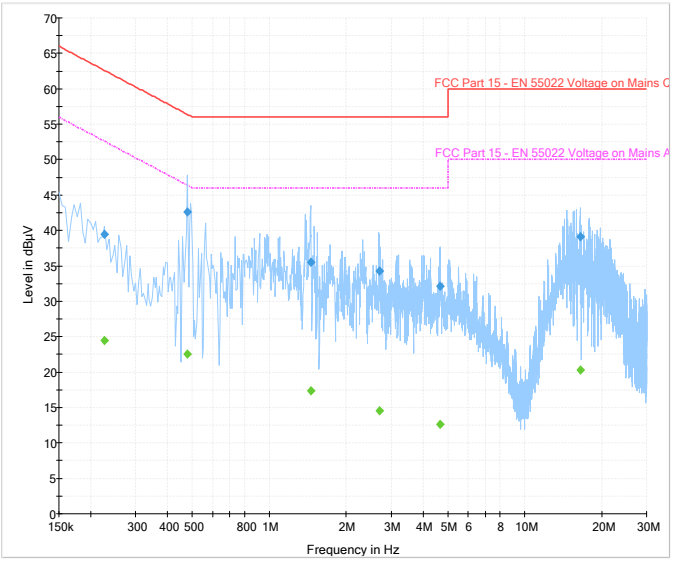


Figure 1-10: N Lines



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AC Powerline Conducted Emissions Test Results cont'd

The following test configurations were measured for model RHD131LW (STR100-1):

Test Configuration 6

Date of the test: February 26, 2015
The environmental conditions were: Temperature: 24.5 °C
Humidity: 14.9 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.389	L1	26.49	10.03	36.52	58.10	48.10	-21.58
0.533	N	24.17	9.90	34.07	56.00	46.00	-21.93
0.897	L1	31.90	9.81	41.71	56.00	46.00	-14.29
1.163	N	28.87	9.80	38.68	56.00	46.00	-17.32
1.347	L1	33.78	9.80	43.58	56.00	46.00	-12.42
2.252	N	30.83	9.84	40.67	56.00	46.00	-15.33
2.319	L1	34.38	9.84	44.22	56.00	46.00	**-11.79**
3.737	N	25.52	9.90	35.42	56.00	46.00	-20.58
3.746	L1	29.21	9.89	39.11	56.00	46.00	-16.89

All other emissions are at least 25 dB below the limit.
Measurements were done with the quasi-peak detector.
See figure 1-11 and figure 1-12 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

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AC Powerline Conducted Emissions Test Graphs

Test Configuration 6

Figure 1-11: L1 lines

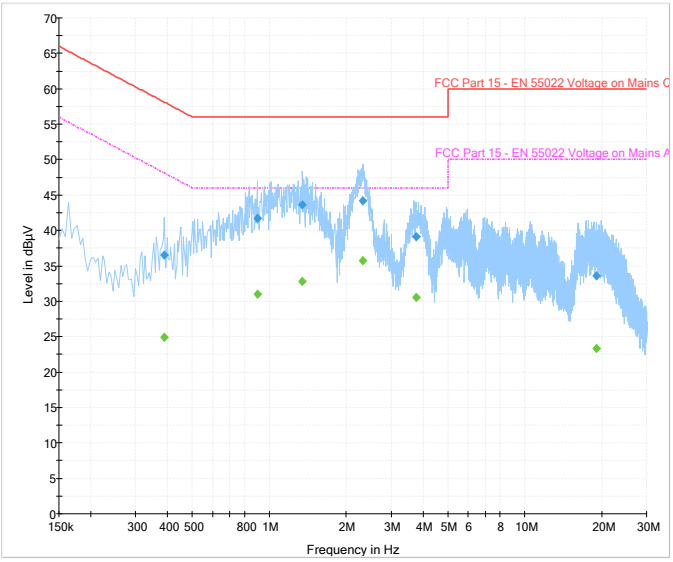
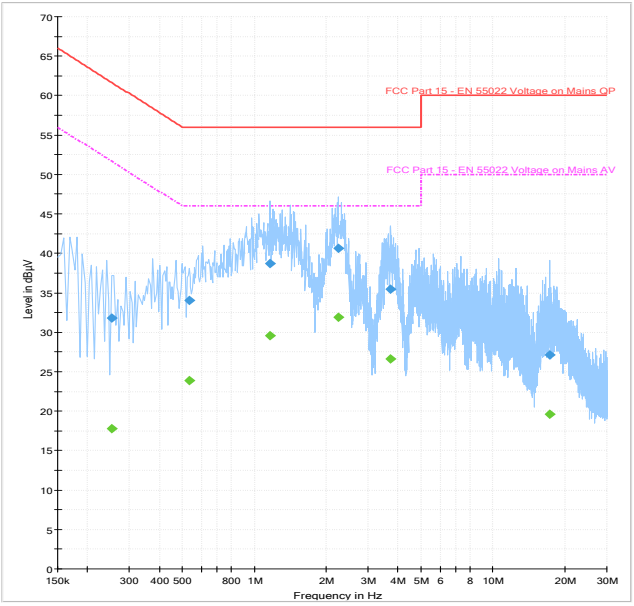


Figure 1-12: N Lines



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AC Powerline Conducted Emissions Test Results cont'd

Test Configuration 7

Date of the test: February 26, 2015
The environmental conditions were: Temperature: 24.5 °C
Humidity: 14.4 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.155	L1	41.90	11.17	53.07	65.80	55.80	-12.73
0.209	N	37.49	10.82	48.32	63.30	53.30	-14.99
0.245	L1	33.64	10.55	44.19	61.90	51.90	-17.71
0.294	N	30.68	10.22	40.89	60.40	50.40	-19.51
0.438	L1	32.79	9.95	42.74	57.10	47.10	-14.36
0.452	N	29.36	9.94	39.30	56.80	46.80	-17.50
0.645	N	25.41	9.85	35.26	56.00	46.00	-20.74
0.929	L1	31.13	9.81	40.93	56.00	46.00	-15.07
1.325	N	27.92	9.81	37.73	56.00	46.00	-18.27
2.567	L1	25.35	9.85	35.20	56.00	46.00	-20.80
15.747	L1	27.89	10.08	37.97	60.00	50.00	-22.03

All other emissions are at least 25 dB below the limit.
Measurements were done with the quasi-peak detector.
See figure 1-13 and figure 1-14 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

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AC Powerline Conducted Emissions Test Graphs

Test Configuration 7

Figure 1-13: L1 lines

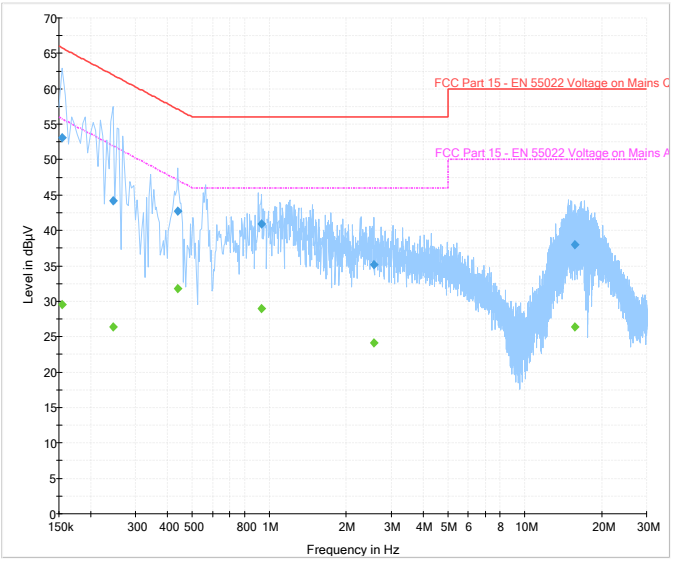
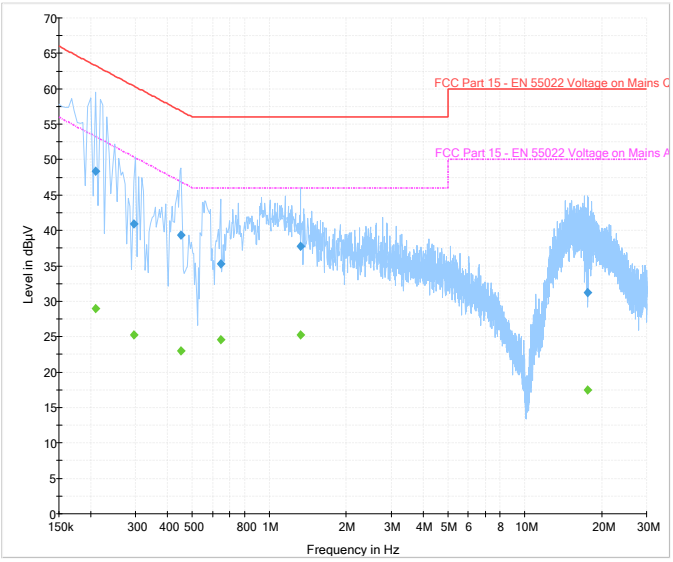


Figure 1-14: N Lines



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APPENDIX 2 - RADIATED UNINTENTIONAL SPURIOUS EMISSIONS TEST DATA

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Radiated Unintentional Spurious Emissions Test Results

The following test configurations were measured for model RHC161LW (STR100-2):

The following tests were performed by Savtej Sandhu and Kevin Guo.

Test Configuration 1

Date of the test: February 23 and 24, 2015
The environmental conditions were: Temperature: 24.7 °C
Humidity: 14.5 %

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading +corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
30.400	V	1.62	354.00	Q.P.	38.67	-11.17	27.50	40.00	-12.50
46.500	V	1.63	278.00	Q.P.	37.16	-14.69	22.47	40.00	-17.53
72.350	V	1.58	354.00	Q.P.	32.76	-14.29	18.47	40.00	-21.53

All other emissions are at least 25 dB below the limit.

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Radiated Unintentional Spurious Emissions Test Results cont'd

Test Configuration 2

Date of the test: February 23 and 25, 2015
The environmental conditions were: Temperature: 24.7 °C
Humidity: 14.5 %

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading +corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
33.750	V	1.41	19.00	Q.P.	40.71	-12.09	28.62	40.00	-11.38
39.950	V	2.31	354.00	Q.P.	38.81	-13.86	24.95	40.00	-15.05
59.400	V	1.66	307.00	Q.P.	43.23	-15.41	27.82	40.00	-12.18
93.550	V	2.53	120.00	Q.P.	40.54	-12.68	27.86	43.50	-15.64
159.650	H	1.41	186.00	Q.P.	36.04	-10.95	25.09	43.50	-18.41
237.950	H	1.02	134.00	Q.P.	43.81	-8.69	35.12	46.00	**-10.88**

All emissions are at least 25 dB below the limit.

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Radiated Unintentional Spurious Emissions Test Results cont'd

Test Configuration 3

Date of the test: February 23 and 25, 2015
The environmental conditions were: Temperature: 24.7 °C
Humidity: 14.5 %

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading+corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
30.100	V	1.67	187.00	Q.P.	36.94	-11.10	25.84	40.00	-14.16
47.450	V	1.63	297.00	Q.P.	37.58	-14.90	22.68	40.00	-17.32
64.150	V	1.47	193.00	Q.P.	34.91	-15.05	19.86	40.00	-20.14

All other emissions are at least 25 dB below the limit.

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Radiated Unintentional Spurious Emissions Test Results cont'd

Test Configuration 4

Date of the test: February 23 and 25, 2015
The environmental conditions were: Temperature: 24.7 °C
Humidity: 14.5 %

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading+corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
48.050	V	1.44	88.00	Q.P.	43.96	-14.99	28.97	40.00	-11.03
58.550	V	1.47	293.00	Q.P.	40.56	-15.39	25.17	40.00	-14.83
83.150	V	1.45	90.00	Q.P.	29.99	-13.45	16.54	40.00	-23.46

All other emissions are at least 25 dB below the limit.

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Radiated Unintentional Spurious Emissions Test Results cont'd

Test Configuration 5

Date of the test: February 23 and 25, 2015
The environmental conditions were: Temperature: 24.7 °C
Humidity: 14.5 %

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading+corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
30.550	V	2.00	126.00	Q.P.	35.40	-11.22	24.18	40.00	-15.82
46.450	V	1.47	201.00	Q.P.	35.14	-14.68	20.46	40.00	-19.54
62.500	V	1.44	115.00	Q.P.	35.28	-15.19	20.09	40.00	-19.91

All other emissions are at least 25 dB below the limit.

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Radiated Unintentional Spurious Emissions Test Results cont'd

Test Configuration 6

Date of the test: February 24 and 25, 2015
The environmental conditions were: Temperature: 24.7 °C
Humidity: 14.5 %

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading+corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
46.800	V	1.51	179.00	Q.P.	42.25	-14.77	27.48	40.00	-12.52
57.650	V	1.56	302.00	Q.P.	42.47	-15.35	27.12	40.00	-12.88

All other emissions are at least 25 dB below the limit.

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Radiated Unintentional Spurious Emissions Test Results cont'd

Test Configuration 7

Date of the test: February 24 and 25, 2015
The environmental conditions were: Temperature: 24.7 °C
Humidity: 14.5 %

All emissions are at least 25 dB below the limit.

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Radiated Unintentional Spurious Emissions Test Results cont'd

The following test configurations were measured for model RHD131LW (STR100-1):

Test Configuration 8

Date of the test: February 24 and 25, 2015
The environmental conditions were: Temperature: 24.7 °C
Humidity: 14.5 %

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading+corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
35.350	V	1.91	178.00	Q.P.	35.54	-12.63	22.91	40.00	**-17.09**
45.900	V	1.40	322.00	Q.P.	37.25	-14.57	22.68	40.00	-17.32
60.200	V	1.88	214.00	Q.P.	34.96	-15.38	19.58	40.00	-20.42
72.100	V	1.51	183.00	Q.P.	33.45	-14.31	19.14	40.00	-20.86

All other emissions are at least 25 dB below the limit.

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Radiated Unintentional Spurious Emissions Test Results cont'd

Test Configuration 9

Date of the test: February 24 and 25, 2015
The environmental conditions were: Temperature: 24.7 °C
Humidity: 14.5 %

All emissions are at least 25 dB below the limit.

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