TEST REPORT CONCERNING THE COMPLIANCE OF A PART 15 LOW POWER TRANSMITTER BELOW 1705 kHz, OPERATING IN THE RANGE 115 – 148 kHz BRAND INID, MODELS 5200, 5210, 5220, 5240, 5250 AND 5260. WITH 47 CFR PART 15 (10-1-13) AND THE REQUIREMENTS OF INDUSTRY CANADA: RSS-GEN AND RSS-210 (ISSUE 8, DECEMBER 2010).

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January 27, 2014

FCC listed	90828
Industry Canada	2932G-2
R&TTE, LVD, EMC Notified Body	1856

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MEASUREMENT/TECHNICAL REPORT

INID BV
Models : 5200, 5210, 5220, 5240, 5250 and 5260

FCC ID: YAB-NGRPSPX
IC: 8908A-NGRPSPX

This report concerns:	Original certification ~~Class 2 change Verification~~
Equipment type:	DCD, Part 15 Low Power Transmitter Below 1705 kHz.

Report prepared by:		
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The data taken for this test and report herein was done in accordance with 47 CFR Part 15 (10-1-13 edition), RSS-GEN, RSS-210 and the measurement procedures of ANSI C63.4-2009. TÜV Rheinland Nederland B.V. at Leek, The Netherlands, certifies that the data is accurate and contains a true representation of the emission profile of the Equipment Under Test (EUT) on the date of the test as noted in the test report. I have reviewed the test report and find it to be an accurate description of the test(s) performed and the EUT so tested.

Date: January 27, 2014

Signature: 

O. Hoekstra
Senior Engineer Telecom TÜV Rheinland Nederland B.V.

Summary

The device under test does:

- ● fulfill the general approval requirements as identified in this test report
- ○ not fulfill the general approval requirements as identified in this test report

Description of test item

Test item	:	Part 15 Low Power Transmitter Below 1705 kHz
Manufacturer	:	INID BV
Brand	:	INID
Model(s)	:	5200, 5210, 5220, 5240, 5250 and 5260
Serial number(s)	:	--
Revision	:	n.a.
FCC ID	:	YAB-NGRPSPX
IC		8908A-NGRPSPX
Receipt date	:	December 11, 2013

Applicant information

Applicant's representative	:	Mr. Mark de Olde
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Country	:	The Netherlands
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Telefax number	:	+31(0)23 53 53 096
e-mail address		Mark@inid-readers.com

Test(s) performed

Location	:	Leek
Test(s) started	:	December 12, 2013
Test(s) completed	:	January 06, 2014
Purpose of test(s)	:	Equipment Authorization (Original grant/certification)
Test specification(s)	:	47 CFR Part 15 (10-1-13 Edition) and RSS-GEN (ISSUE 3, DECEMBER 2010) AND RSS-210 (ISSUE 8, DECEMBER 2010)
Test engineer(s)	:	R. van der Meer 
Report written by	:	R. van der Meer 
Report date	:	January 27, 2014

Table of contents

1 General information.

1.1 Product description.

1.1.1 Introduction.

The EUT is an inductive proximity card reader intended to be used in access control systems and other applications using RFID readers. The content of this report and measurement results have not been changed other than the way of presenting the data

The content of this report and measurement results have not been changed other than the way of presenting the data.

1.2 Related submittal(s) and/or Grant(s).

1.2.1 General.

This test report supports the original grant/certification in equipment authorization files under FCC ID: YAB-NGRPSPX and IC: 8908A-NGRPSPX

1.3 Tested system details.

Details and an overview of the system and all of its components, as it has been tested, may be found below.

EUT	:	Part 15 Low Power Transmitter Below 1705 kHz.
Manufacturer	:	INID BV
Brand	:	INID
Models	:	5200, 5210, 5220, 5240, 5250 and 5260
Serial numbers	:	--
Voltage input rating	:	7.5 - 20 Vdc
Voltage output rating	:	--
Current input rating	:	90 mA – 130mA
Antenna	:	Copper wire loop antenna soldered on PCB
Remarks	:	--

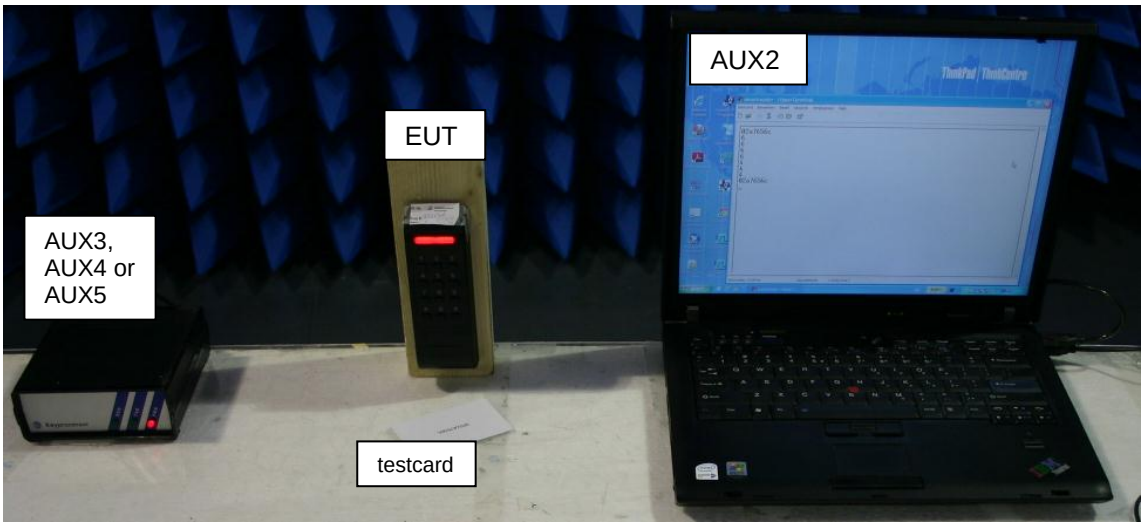
AUX1	:	Power supply
Manufacturer	:	--
Brand	:	--
Model	:	FW7662/12
Model name	:	--
Serial number	:	--
Voltage input rating	:	100-240Vac 50-60 Hz
Voltage output rating	:	12Vdc / 500 mA
Remark	:	--

AUX2	:	Laptop PC including power supply adapter
Manufacturer	:	Lenovo
Brand	:	Lenovo
Model	:	Thinkpad R60
Serial number	:	L3-BF847 07/02
Voltage input rating	:	20Vdc
Voltage output rating	:	--
Remark	:	required to read data from EUT

AUX3	:	RS232 Converter
Manufacturer	:	IE
Brand	:	IE
Model	:	--
Serial number	:	--
Voltage input rating	:	12Vdc
Voltage output rating	:	--
Remark	:	connects the EUT(model 5220) to AUX2 via RS232/USB converter

AUX4	:	RS converter, WG/C&D/TTL
Manufacturer	:	IE
Brand	:	IE
Model	:	KP700
Serial number	:	--
Voltage input rating	:	12Vdc
Voltage output rating	:	--
Remark	:	connects the EUT(model 5200) to AUX2

AUX5	:	RS485 Converter
Manufacturer	:	IE
Brand	:	IE
Model	:	--
Serial number	:	--
Voltage input rating	:	12Vdc
Voltage output rating	:	--
Remark	:	connects the EUT(model 5210) to AUX2



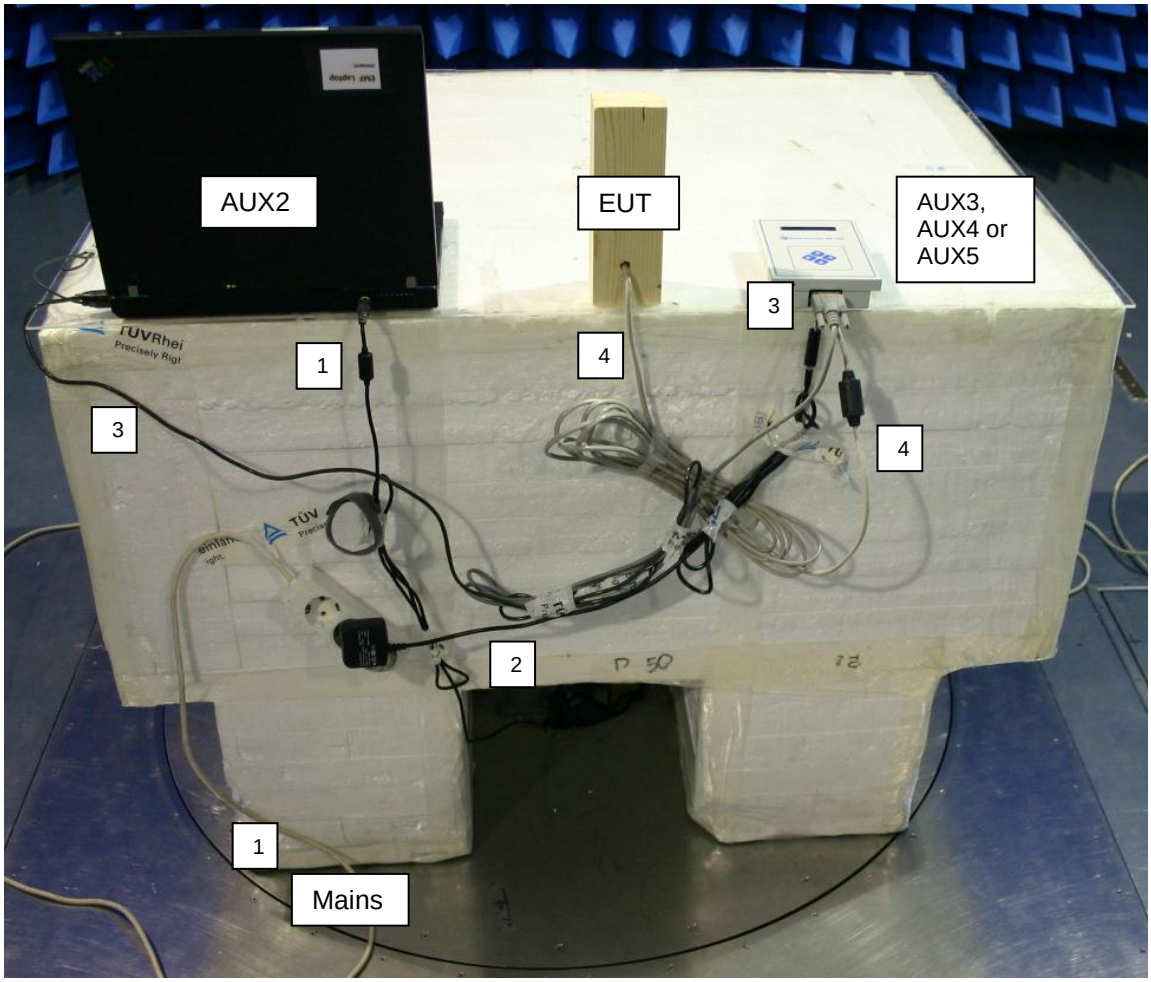


Figure 1a & 1b: front- and rear view of the system in typical setup

1.3.1 Description of input and output ports.

Number	Terminal	From	To	Remarks	
1	AC Mains	AC Mains	AUX1 and AUX2 (through a AC/DC adapter) and AUX3, AUX4 or AUX5	Non Shielded cable	
2	DC Power	AUX1	AUX3, AUX4 or AUX5	Non Shielded cable	
3	Serial port	AUX3, AUX4 or AUX5	AUX2	Shielded cable <3m	
4	Data	AUX3	EUT	Shielded cable <3m, data and power supply connection	

Note: either AUX3, AUX4 or AUX5 is used, never combination.

1.4 Test Summary

The EUT was tested in accordance with the specifications given in the table below.

Test Standard		Description		Pass / Fail
47 CFR Part 15 (10-1-13 Edition)	RSS-210 Issue 8, December 2010		Page	
15.207(a)	RSS-Gen(7.2.4)	Conducted emissions	17 – 20	Pass
15.209	RSS-Gen(4.9 and 7.2.5)	Radiated emissions	13 – 16	Pass
15.215(c)	RSS-Gen(4.6.1)	Bandwidth of the emission	26 - 28	Pass

Table : testspecifications

Testmethods: ANSI C63.4:2009 and RSS-Gen Issue 3, December 2010

1.5 Test methodology.

The test methodology used is based on the requirements of 47 CFR Part 15 (10-1-13 Edition), sections 15.31, 15.207 and 15.209, RSS-GEN (ISSUE 3, DECEMBER 2010) RSS-210 (ISSUE 8, DECEMBER 2010).

The test methods, which have been used, are based on ANSI C63.4: 2009.

Radiated emission tests above 30 MHz were performed at a measurement distance of 3 meters.
Radiated emission tests below 30 MHz were performed at a measurement distance of 3 meters.
To calculate the field strength level from these results to the appropriate distance at which the limit is specified, the appropriate extrapolation factor is used.

The receivers are switching automatically to the right bandwidth in accordance with CISPR 16. This is implemented in the receiver. The antenna factors are programmed in the test receiver. The receiver automatically calculates the appropriate correction factor for the utilized antenna and also the appropriate antenna factor for the cable loss. The total correction is automatically added to the measured value.

1.6 Test facility.

The Federal Communications Commission and Industry Canada has reviewed the technical characteristics of the test facilities at TÜV Rheinland Nederland B.V., located in Leek, 9351VT Eiberkamp 10, The Netherlands, and has found these test facilities to be in compliance with the requirements of 47 CFR Part 15, section 2.948.

The description of the test facilities has been filed at the Office of the Federal Communications Commission under registration number 90828. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

The description of the test facilities has been filed to Industry Canada under registration number 2932G-2. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

1.7 Test conditions.

Normal test conditions:

Temperature (*)	: +15°C to +35°C
Relative humidity(*)	: 20 % to 75 %
Supply voltage	: 120VAC/60Hz to the AC/DC Power Supply – the DC output was varied across the voltage range specified by the manufacturer
Air pressure	: 950 – 1050 hPa

When it was impracticable to carry out the tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests are stated separately.

2 System test configuration.

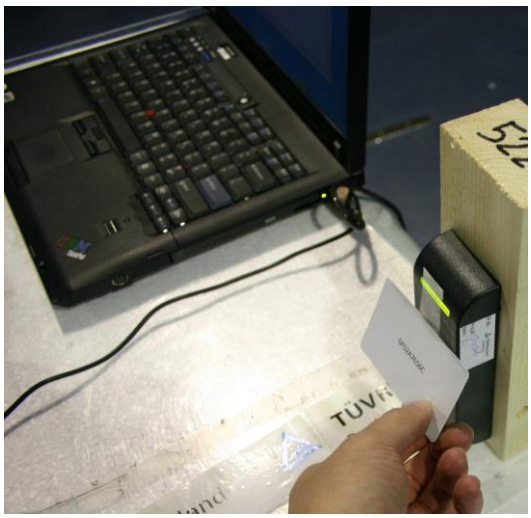
2.1 Justification.

The system was configured for testing in a typical situation as a customer would normally use it.
The EUT has various communication options which relate to the modelname as mentioned in the attestation Appendix -1. From these models the worst case was determined by pre-tests and three versions were selected for final testing.

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C63.4: 2009.

2.2 EUT mode of operation.

The EUT has been tested in both passive, i.e. the EUT is ready to detect a card and active mode i.e. the EUT is reading a card. To assess the behavior of the EUT while reading the card, the EUT is tested with a card presented such that it continuously reads the card. The intentional radiator tests have been performed with a complete functioning EUT and interconnections. The card used for testing is a EM type with code: 0F02A7656C. The correct communication was verified with the Windows XP application Hyperterminal.



2.3 Special accessories.

No special accessories are used and/or needed to achieve compliance.

2.4 Equipment modifications.

No modifications have been made to the equipment.
No modifications have been made to the equipment in order to achieve compliance.

2.5 Product Labelling

The product labeling information is available in the technical documentation package.

2.6 Block diagram of the EUT.

The block diagram is available in the technical documentation package.

2.7 Schematics of the EUT.

The schematics are available in the technical documentation package.

2.8 Part list of the EUT.

The part list is available in the technical documentation package.

3 Radiated emission data.

RESULT: PASS

Date of testing: 2013-12-12 and 2014-01-06

Frequency range: 9kHz - 1GHz

Requirements:

FCC 15.205, FCC 15.209 and IC RSS-Gen(4.9, 7.2.2 and 7.2.5)

Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a), must comply with the radiated emission limits specified in FCC 15.209(a). 15.209(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Detector / Bandwidth (kHz)	Field strength (microvolts/meter)	Field strength (dBmicrovolts/meter)	Measurement distance (meters)
0.009-0.490	Av & Pk / 0.200	2400/F(kHz)	43.5 – 13.8	300
0.490-1.705	Qp / 120	24000/F(kHz)	33.8 – 22.9	30
1.705-30.0	Qp / 120	30	29.5	30
30-88	Qp / 120	100**	40.0	3
88-216	Qp / 120	150**	43.5	3
216-960	Qp / 120	200**	46.0	3
Above 960	Av & Pk / 1000	500	54.0	3

Test procedure:

ANSI C63.4-2009, RSS-Gen.

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Before final measurements of radiated emissions were performed, the EUT was scanned to determine its emission spectrum profile. The physical arrangement of the test system, the associated cabling and the EUT orientation (X, Y, Z) were varied in order to ensure that maximum emission amplitudes were attained.

The spectrum was examined from 9 kHz to 1 GHz. Final radiated emission measurements were made at 3m distance.

At each frequency where a spurious emission was found, the EUT was rotated 360° and the antenna was raised and lowered from 1 to 4m in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations.

The highest emission amplitudes relative to the appropriate limit were recorded in this report. Field strength values of radiated emissions at frequencies not listed in the tables are more than 20 dB below the applicable limit.

3.1 Radiated field strength measurements (30 MHz – 1 GHz, E-field)

Frequency (MHz)	Measurement results @3m (dBµV)	Antenna polarization	Correction factor (dB)	Results after correction (dBµV/m)	Limits @3m (dBµV/m)	Pass/Fail
92.08	8.5	Vertical	9.4	17.9	40.0	Pass
113.42	-2.4	Vertical	11.5	9.1	43.5	Pass
249.22	1.7	Vertical	13.9	15.6	46.0	Pass
507.24	-2.9	Vertical	21.2	18.3	46.0	Pass
937.92	-2.2	Vertical	27.9	25.7	46.0	Pass
957.02	-2.8	Horizontal	28.1	25.3	46.0	Pass

Table 1 Radiated emissions of the EUT

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15 section 15.209, RSS-210 and RSS-Gen are depicted in Table 1. The system is tested as in whole, so with all equipment as shown in Figure.1 in place and functioning. Being the worst case situation.

Notes:

1. Field strength values of radiated emissions at frequencies not listed in the table above are more than 20 dB below the applicable limit.
2. Measurement uncertainty is ±5.0dB
3. The reported field strength values are the worst case values at the indicated frequency. The EUT was varied in three positions, the antenna was varied in horizontal and vertical orientations and also in height (between 1m and 4m).
4. A Quasi-peak detector was used with a resolution bandwidth of 120 kHz.
5. The EUT was tested in both passive mode (i.e. without a cardin its proximity) and in activated mode (i.e. with a card in its proximity). Maximum values have been noted.
6. Values noted are from model 5220, which proved from pre-test to be the worst case.

Used test equipment and ancillaries:

99861	99580/99847	99858	99877	99699	99609	99857		

3.2 Radiated field strength measurements (frequency range of 0.009-30 MHz, H-field).

Frequency (MHz)	(a) Measurement results	Detector	(b) Antenna factor	(c) Cable loss	(d) Extrapolation factor	Measurement results (calculated =a+b+c-d)	Limits
	dBµV @3m		dB	dB	dB	dBµV/m@30m (unless otherwise stated)	dBµV/m@30m (unless otherwise stated)
0.1319 fundamental	67.9	Pk	20.1	1	80	9.0 @300m	45.17 @300m
0.1970	6.0	Pk	20.0	1	80	-53.0 @300m	32.18 @300m
0.2670	22.4	Pk	20.0	1	80	-36.6 @300m	28.99 @300m
0.4005	30.5	Pk	20.0	1	40	-28.5 @300m	25.99 @300m
0.6622	22.1	Qp	19.7	1	40	2.8	36.24
1.4500	26.3	Qp	19.7	1	40	7.0	16.55

Table 2a Radiated emissions of the EUT, Peak and Quasi Peak values

Fundamental Frequency (MHz)	(a) Measurement results Peak	(b) Duty cycle factor	Measurement results Average (calculated =a-b)	Limits Part 15.209
	dBµV/m @300m	dB	dBµV/m	dBµV/m @300m
0.1319 fundamental	9.0	0	9.0	25.17
0.1970	-53.0	0	-53.0	12.18
0.2670	-36.6	0	-36.6	8.99
0.4005	-28.5	0	-28.5	5.99

Table 2b Emissions of the fundamental of the EUT, average values

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15 section 15.209, RSS-210 and RSS-Gen with the EUT operating in continuous transmit mode, are depicted in Table 2a & 2b. Where Table 2b represents the average values calculated from the peak values of Table 2a. See section 6 for the duty cycle factor calculation.

See notes on the next page.

Notes:

1. Calculated measurement results for the fundamental at 0.1319 MHz are obtained by using the 80dB/decade extrapolation factor, antenna factor and cable loss.
   i.e at 0.1319 MHz: 67.9 dBµV + 20.1dB + 1dB - 80dB= 9.0 dBµV /m.
2. A resolution bandwidth of 9kHz was used during testing
3. Field strength values of radiated emissions at frequencies not listed in Table 2a are more than 20 dB below the applicable limit
4. The EUT was varied in three positions, the loop antenna was varied in horizontal and vertical orientations and also around it's axis. The reported value is the worst case found at the reported frequency.
5. The EUT was tested in both normal mode (i.e. without a card in its proximity) and in activated mode (i.e. with a card in its proximity).
6. Measurement uncertainty is ±5.0dB.
7. Values noted are of model 5220 and with RS-232 connection, which proved from pre-test to be the worst case.
8. Duty cycle factor calculation is presented in section 6 of this report.

Used test equipment and ancillaries:

99861	99580/99847	99858	99609	15453	99699	99609	99857	

4 Conducted emission data.

RESULT: Pass.

Date of testing: 2014-01-02 and 2014-01-03

Requirements: Except when the requirements applicable to a given device state otherwise, for any license-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in the following table. The tighter limit applies at the frequency range boundaries.

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

*Decreases with the logarithm of the frequency.

Test procedure:

ANSI C63.4-2009, RSS-Gen.

Each phase and neutral of the AC power line were measured with respect to ground. Measurements were performed using a 50 µH / 50 Ω LISN. The frequency range from 150kHz to 30MHz was searched.
The six highest EUT emissions relative to the limit were noted for three supply voltages.
In the case of tabletop equipment, the EUT is placed on a 1.0m x 1.5m non-conductive table 80cm above the ground plane and 40cm from a vertical ground reference plane. The rear of the EUT was positioned flush with the backside of the table and directly over the LISNs. The power and I/O cables were routed over the edge of the table and bundled approximately 40cm from the ground plane.

4.1 AC Power Line Conducted Emission data of the EUT

Frequency (MHz)	Measurement results dB(µV) Line 1		Measurement results dB(µV) Neutral/Line 2		Limits dB(µV)		Result
	QP	AV	QP	AV	QP	AV	
0.15240	35.0	Note 5	42.8	Note 5	66.0	56.0	PASS
0.44143	30.0	Note 5	42.4	Note 5	57.1	47.1	PASS
0.47037	34.2	Note 5	43.3	Note 5	56.5	46.5	PASS
2.45123	35.2	Note 5	38.0	Note 5	56.0	46.0	PASS
2.87290	38.4	Note 5	40.0	Note 5	56.0	46.0	PASS
3.42099	37.5	Note 5	37.2	Note 5	56.0	46.0	PASS

Table 3a Conducted emission measurements of model 5250 with RS485

Frequency (MHz)	Measurement results dB(µV) Line 1		Measurement results dB(µV) Neutral/Line 2		Limits dB(µV)		Result
	QP	AV	QP	AV	QP	AV	
0.15000	31.0	Note 5	45.2	Note 5	66.0	56.0	PASS
0.43448	42.7	Note 5	46.3	Note 5	57.3	47.3	PASS
0.46296	43.8	Note 5	40.4	Note 5	56.7	46.7	PASS
0.50120	32.7	Note 5	35.3	Note 5	56.0	46.0	PASS
2.41263	39.2	Note 5	38.6	Note 5	56.0	46.0	PASS
2.96557	38.6	Note 5	37.6	Note 5	56.0	46.0	PASS

Table 3b Conducted emission measurements of model 5200 with KP700

Frequency (MHz)	Measurement results dB(µV) Line 1		Measurement results dB(µV) Neutral/Line 2		Limits dB(µV)		Result
	QP	AV	QP	AV	QP	AV	
0.15000	44.0	Note 5	43.2	Note 5	66.0	56.0	PASS
0.46296	40.7	Note 5	46.8	Note 5	56.7	46.7	PASS
3.06123	39.6	Note 5	40.3	Note 5	56.0	46.0	PASS
3.70357	35.0	Note 5	37.7	Note 5	56.0	46.0	PASS
4.00949	35.0	Note 5	36.0	Note 5	56.0	46.0	PASS
27.80489	25.0	Note 5	25.6	Note 5	60.0	50.0	PASS

Table 3c Conducted emission measurements of model 5220 with RS-232

The results of the conducted emission tests, carried out in accordance with 47 CFR Part 15 section 15.207 and RSS-Gen section 7.2.4, at the 120 Volts AC mains connection terminals of AUX1, are depicted in Tables 3a, 3b and 3c. The EUT was tested in both passive and active mode (while detecting a card). Maximum values recorded. The system is tested as in whole, so with all equipment as shown in Figure.1 in place and functioning. Being the worst case situation.

Notes:

1. Measurement uncertainty is ±3.5dB
2. The resolution bandwidth used was 9 kHz.
3. The six highest values relative to the applicable limits were noted.
4. Qp values already within Av limits, there for Av not tested.

Used test equipment and ancillaries:

99852	99161	12512	15667	13313		

4.1.1 Plots of the Conducted AC Power Line Emissions

02. Jan 14 13:54

```
Scan Settings (1 Range)
|--------- Frequencies ------------||--------- Receiver Settings ---------|
   Start        Stop          Step      IF BW   Detector   M-Time   Atten Preamp
 150k           30M             1.6%      9k        PK       20ms AUTO LN    OFF

Final Measurement: x QP
                   Meas Time:     1 s
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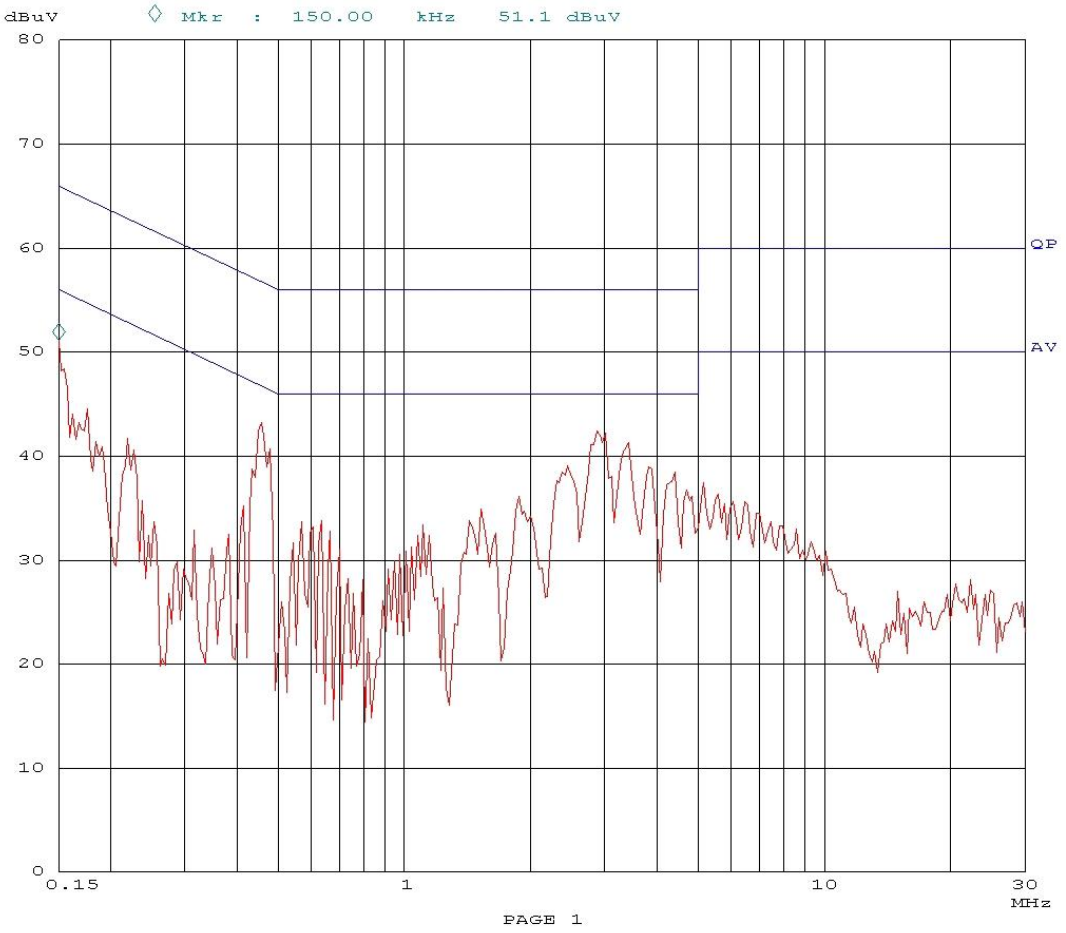


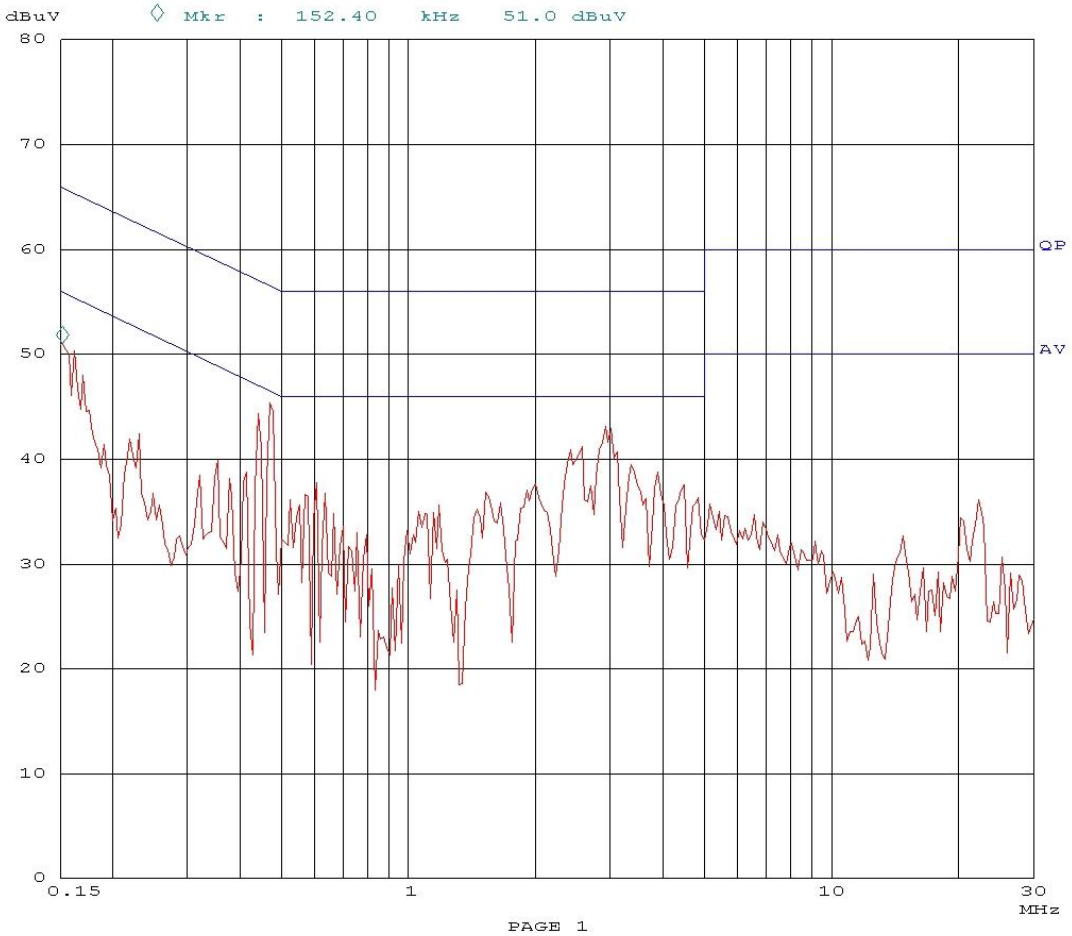
Plot 1: Plot of the Conducted AC Power Line emissions on L1 of 5250 with RS485

02. Jan 14 14:02

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	1.6%	9k	PK	20ms	AUTO	LN OFF

Final Measurement: x QP
Meas Time: 1 s



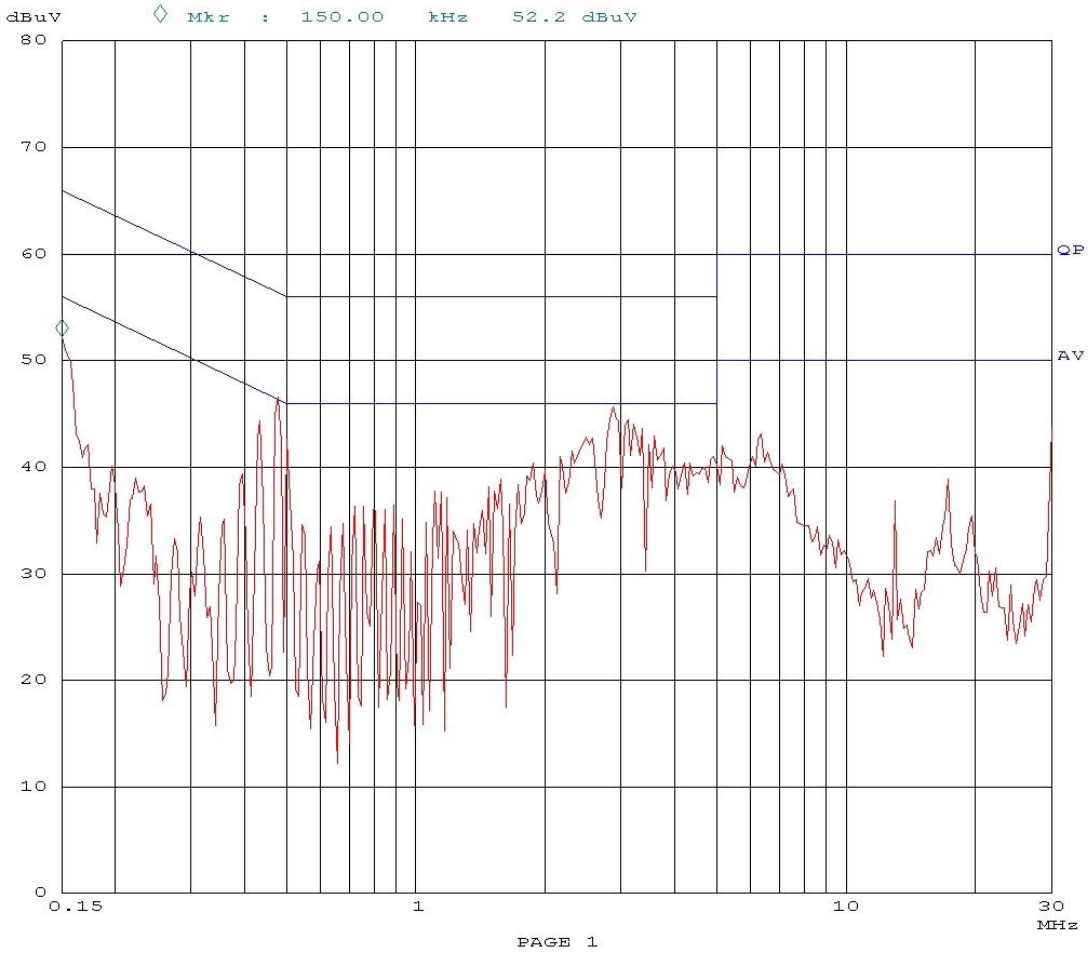
Plot 2: Plot of the Conducted AC Power Line emissions on Neutral/L2 of 5250 with RS485

02. Jan 14 14:52

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	1.6%	9k	PK	20ms	AUTO	LN OFF

Final Measurement: x QP
Meas Time: 1 s



Plot 3: Plot of the Conducted AC Power Line emissions on L1 of 5200 with KP700

02. Jan 14 14:44

```
Scan Settings (1 Range)
|--------- Frequencies ------------||--------- Receiver Settings ---------|
   Start        Stop          Step       IF BW  Detector  M-Time  Atten Preamp
 150k          30M             1.6%       9k       PK       20ms AUTO LN    OFF

Final Measurement: x QP
                   Meas Time:     1 s
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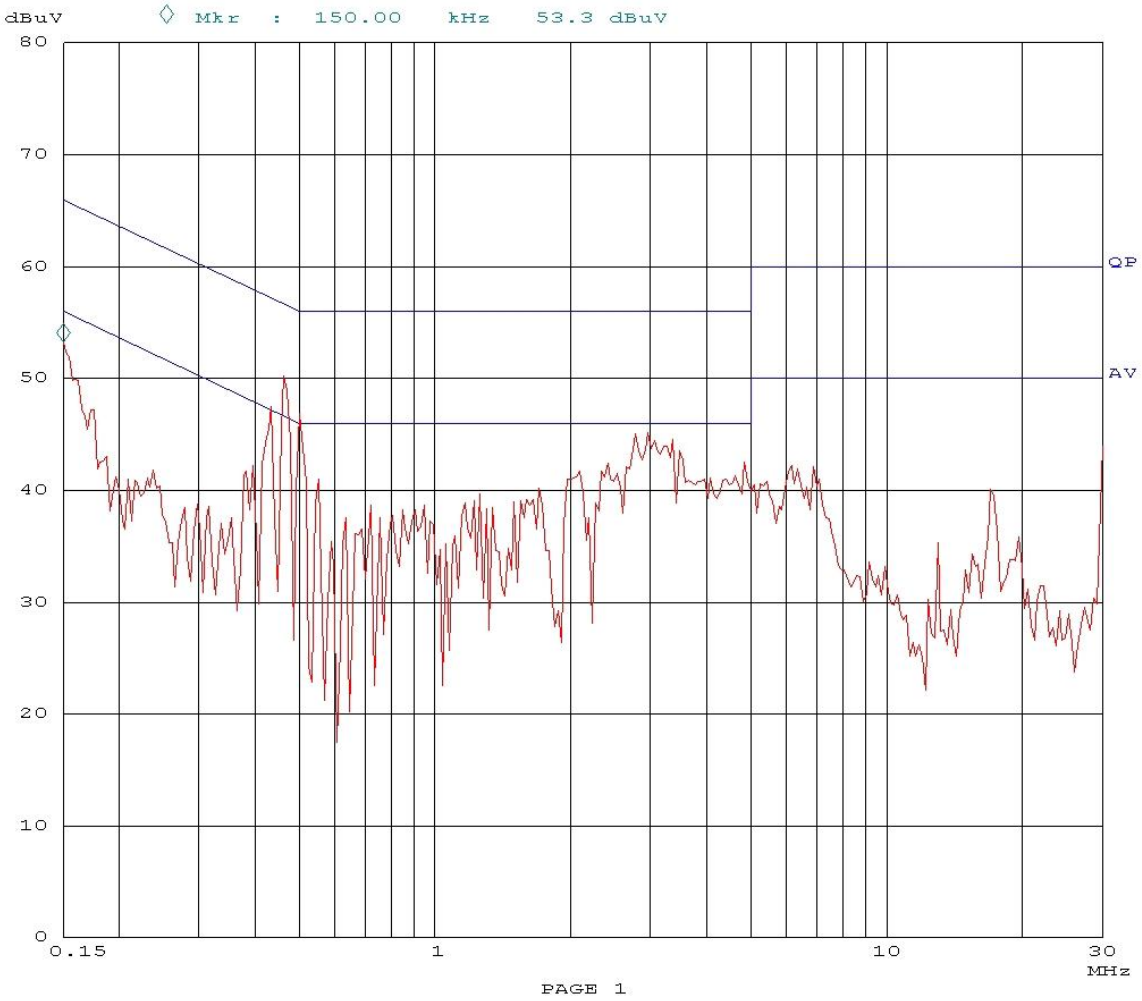


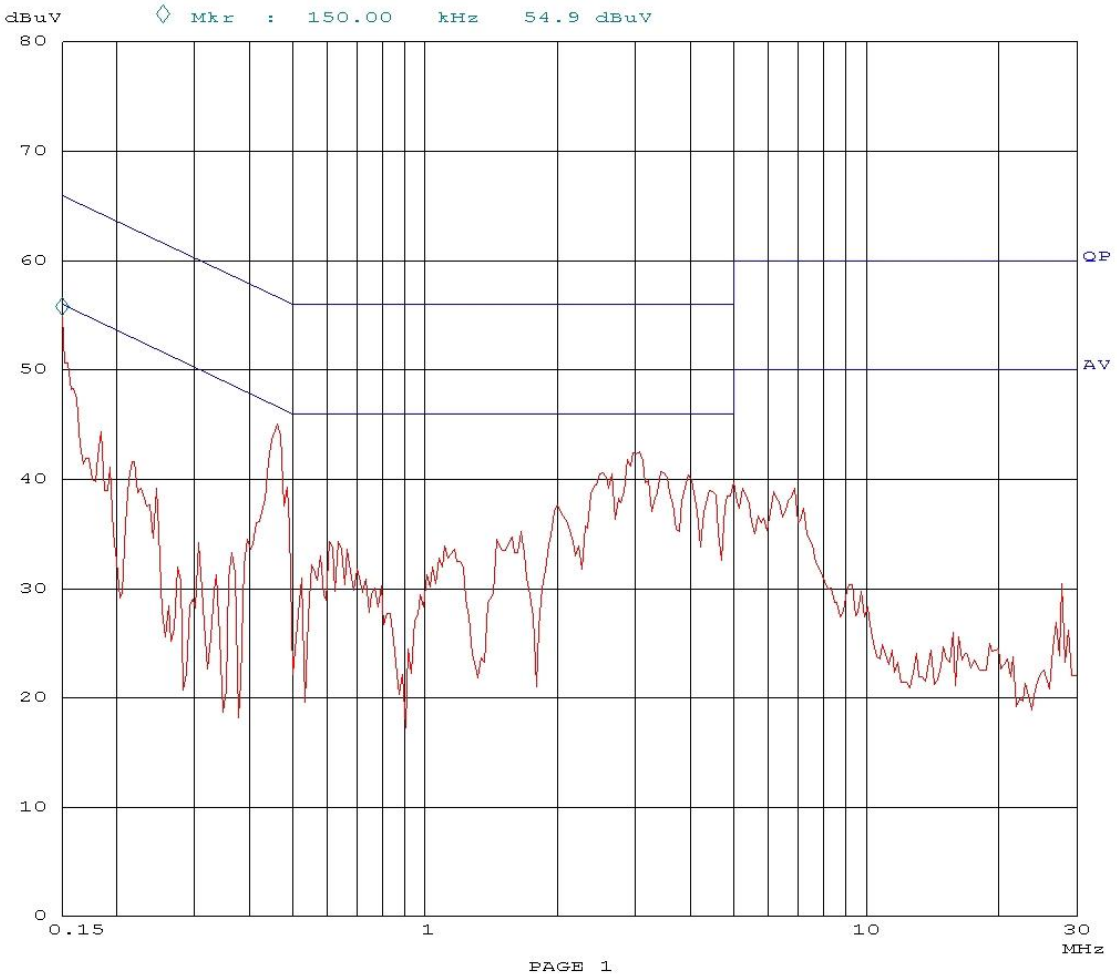
Plot 4: Plot of the Conducted AC Power Line emissions on Neutral/L2 of 5200 with KP700

03. Jan 14 09:09

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	1.6%	9k	PK	20ms	AUTO LN	OFF

Final Measurement: x QP
Meas Time: 1 s

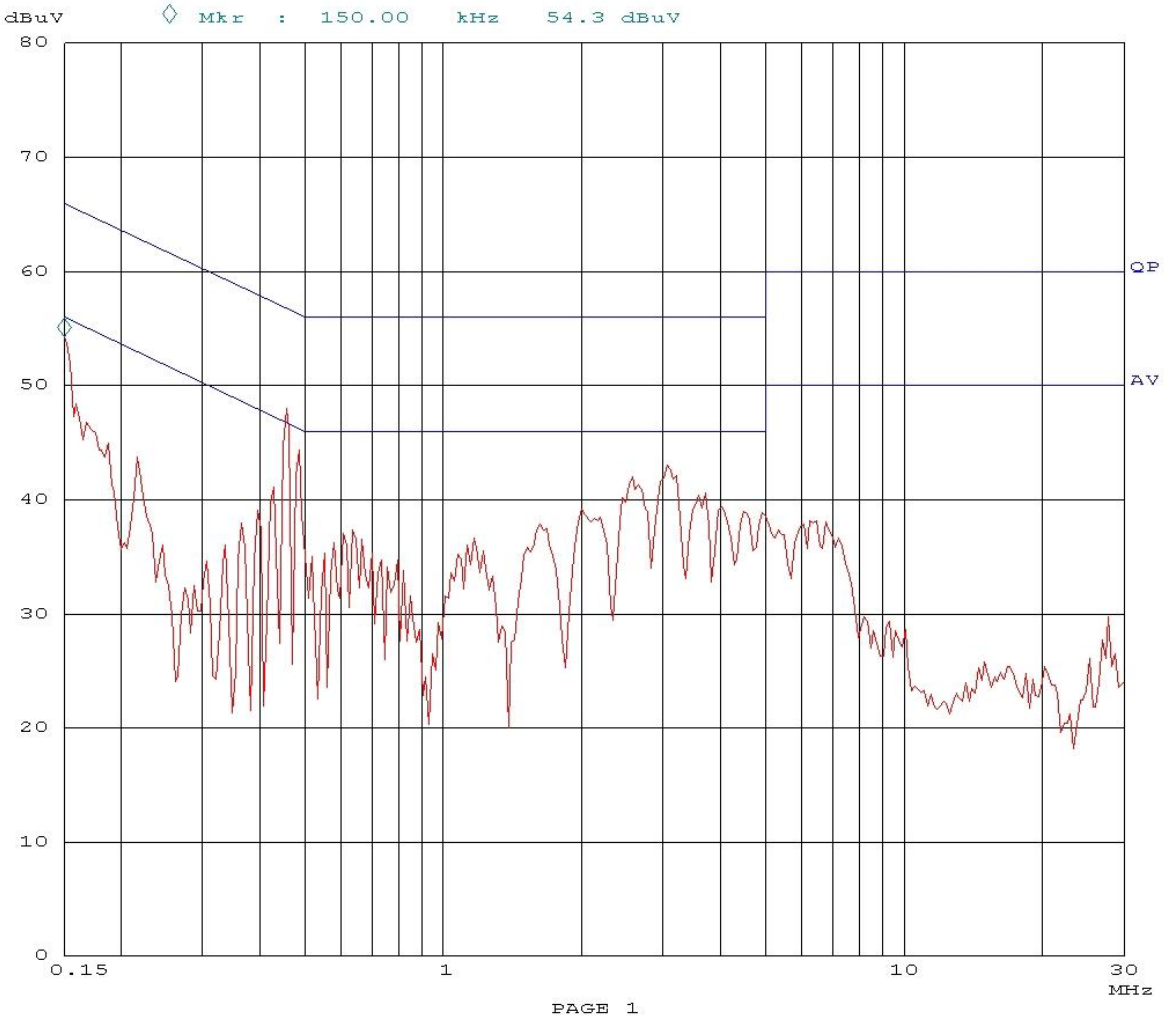


Plot 5: Plot of the Conducted AC Power Line emissions on L1 of 5220 with RS-232

03. Jan 14 09:14

```
Scan Settings (1 Range)
|--------- Frequencies -----------||--------- Receiver Settings ---------|
   Start        Stop          Step      IF BW  Detector  M-Time  Atten Preamp
 150k          30M             1.6%       9k       PK      20ms AUTO LN   OFF

Final Measurement: x QP
                   Meas Time:     1 s
```



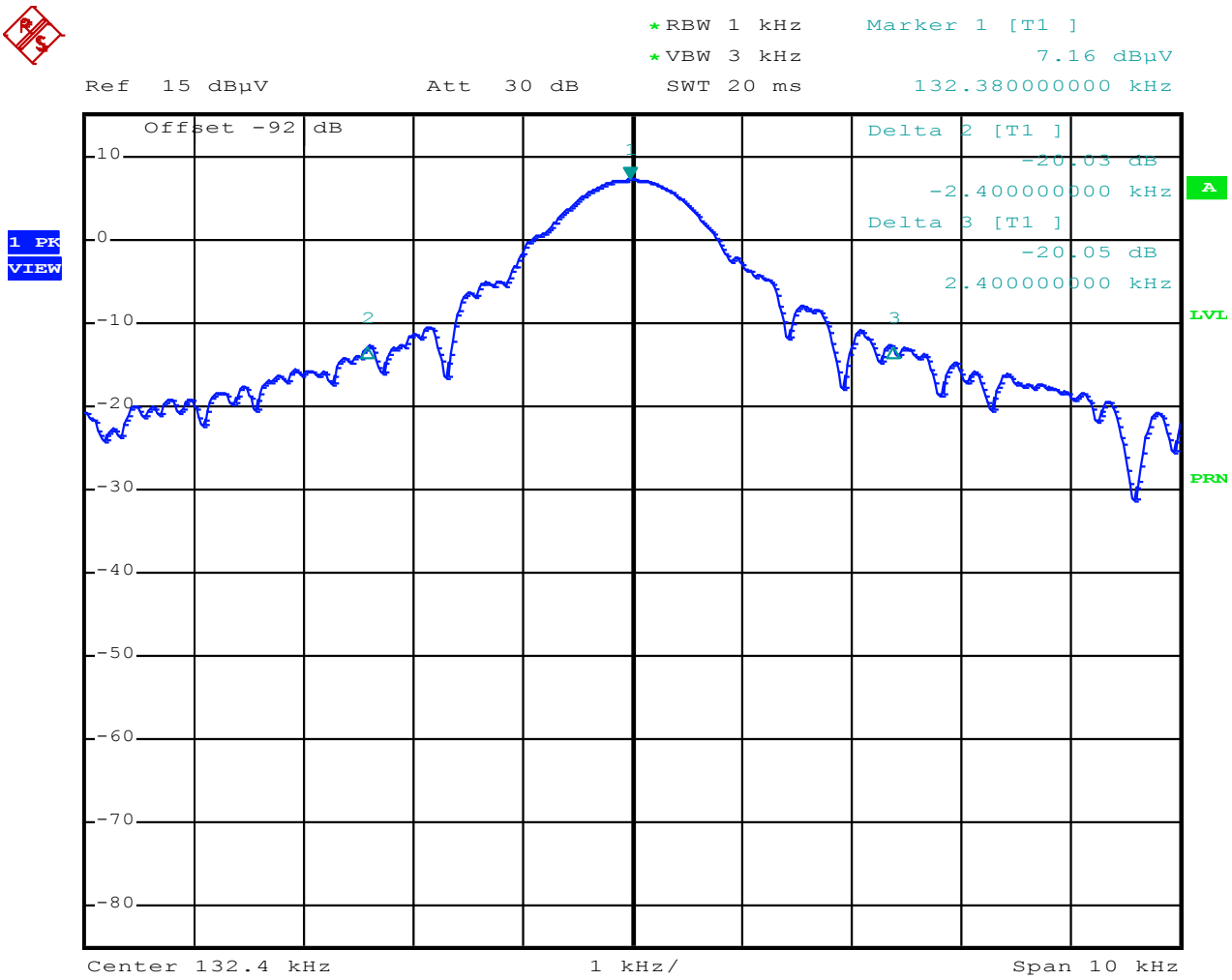
Plot 6: Plot of the Conducted AC Power Line emissions on Neutral/L2 of 5220 with RS-232

5 Occupied bandwidth

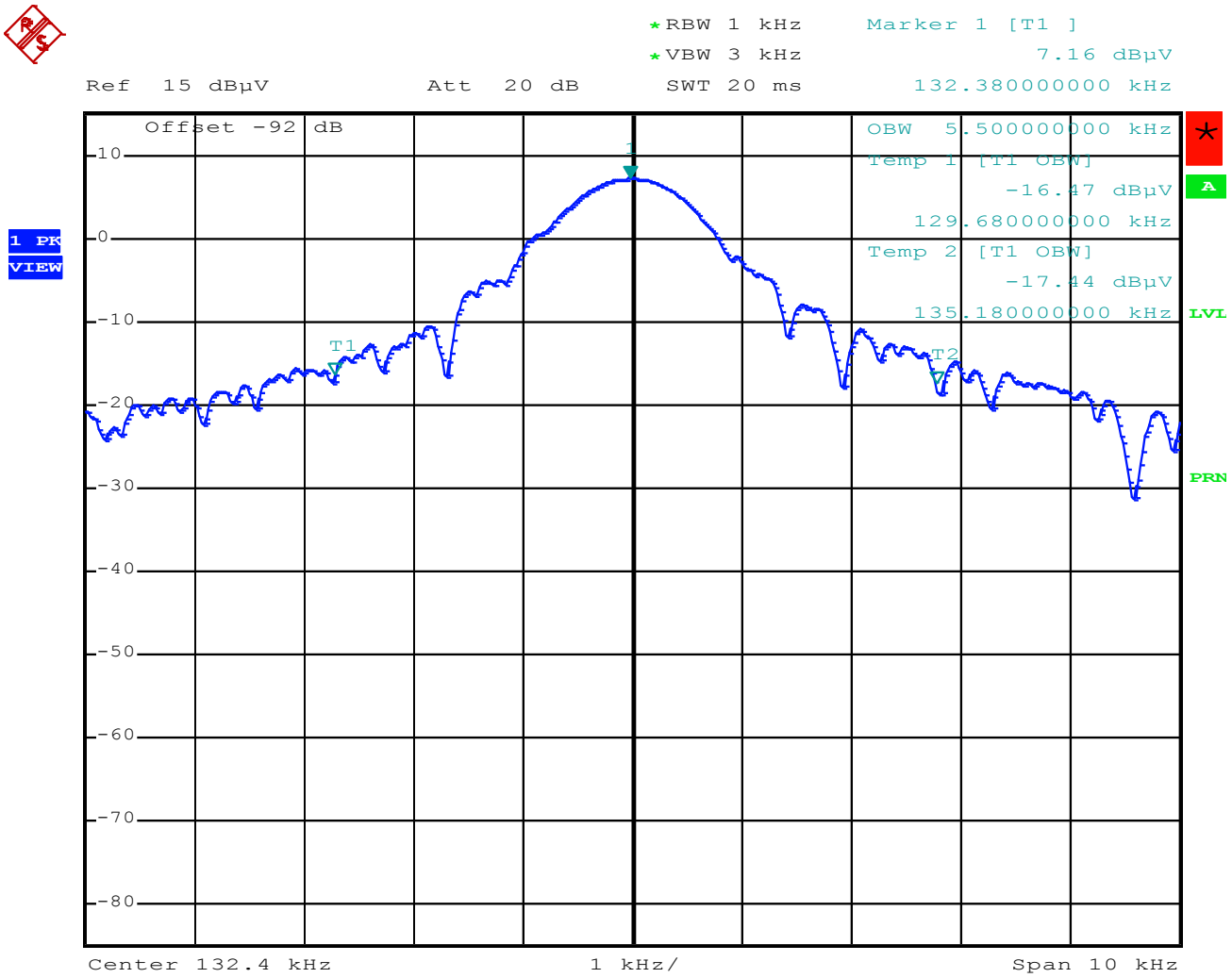
5.1 Bandwidth of the emission

RESULT: PASS

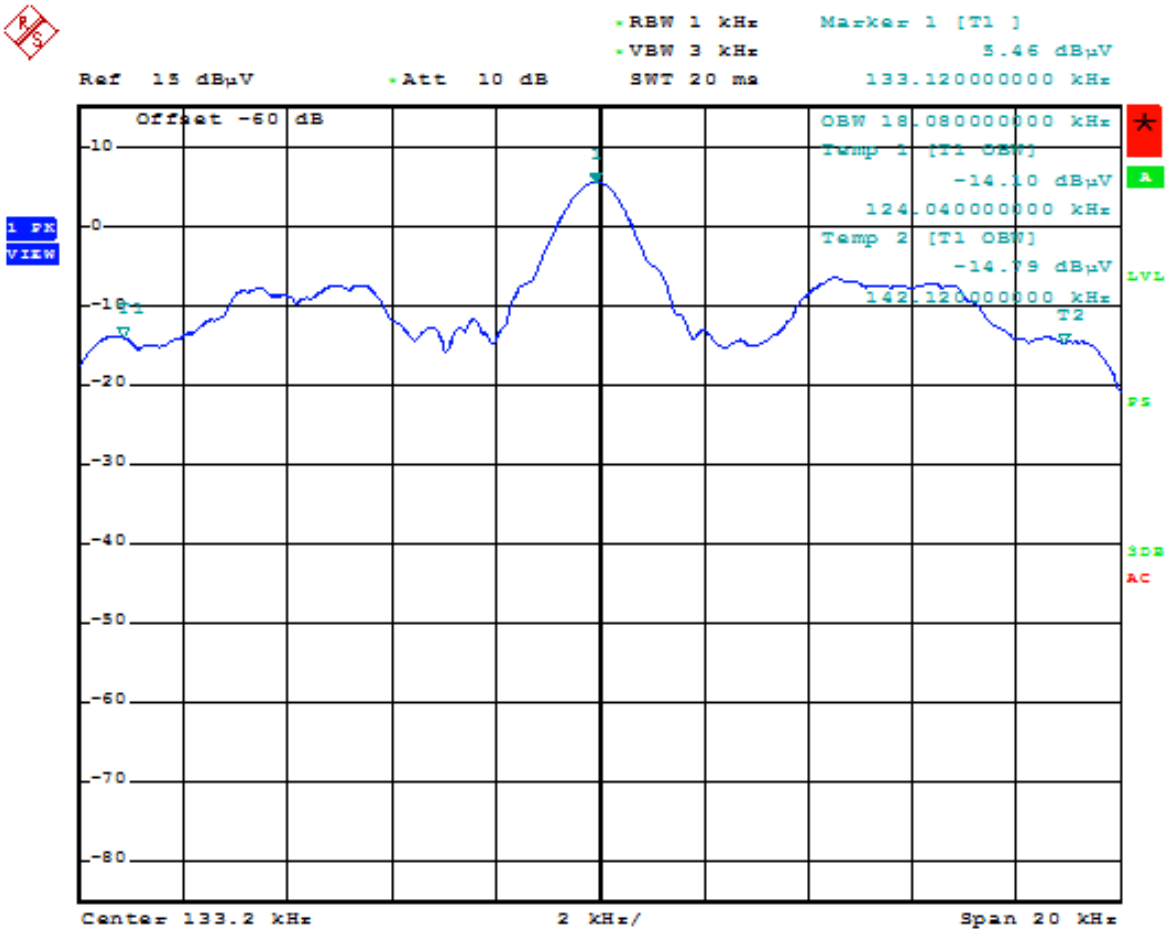
Date of testing: 2014-01-03



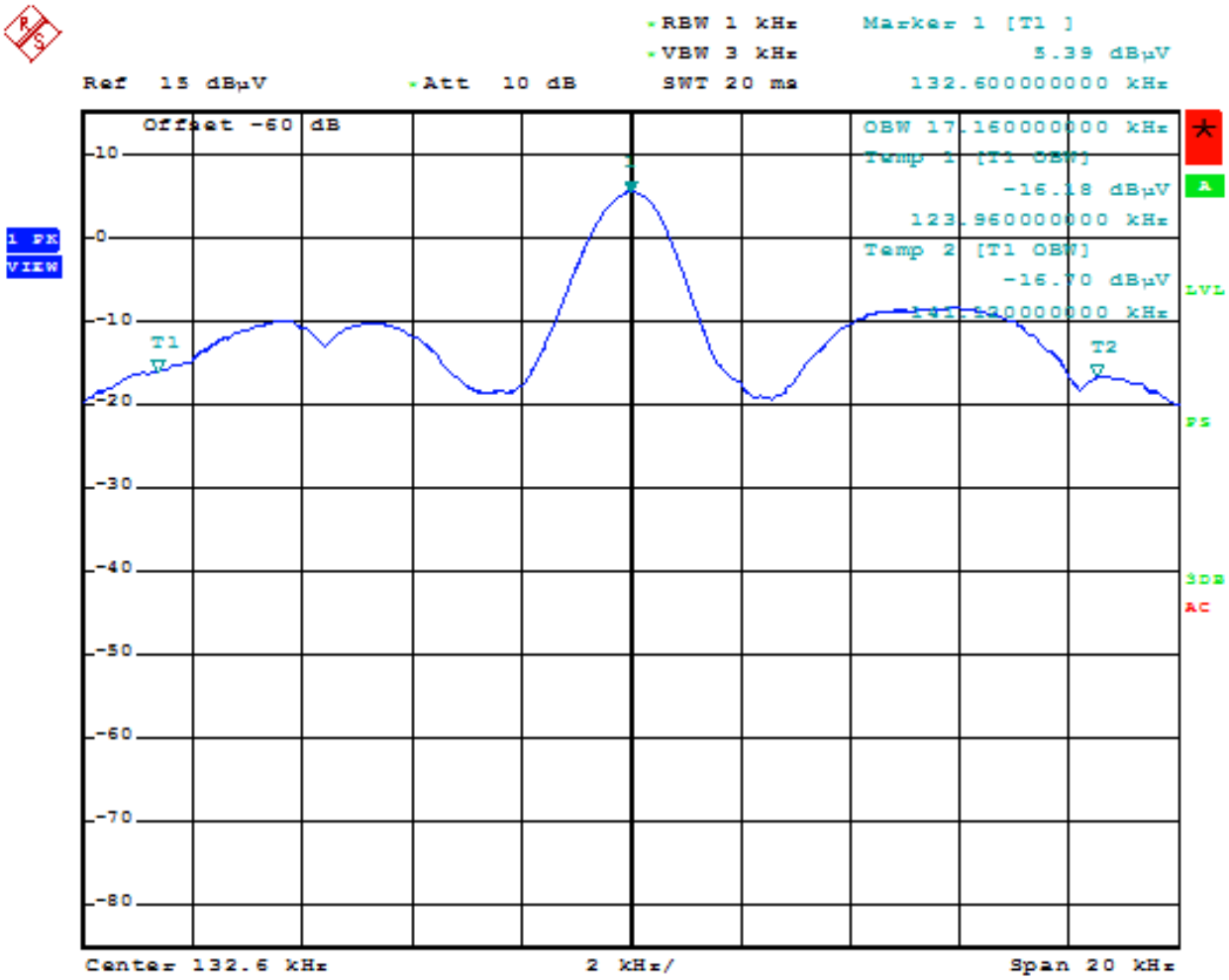
Plot 7: plot of the emission. Measured value is 4.80 kHz as measured on a spectrum analyzer.



Plot 8a: plot of the FSK 99% emission bandwidth.
Measured value is 5.50 kHz as measured on a spectrum analyzer.



Plot 8b: plot of the ASK 99% emission bandwidth.
Measured value is 18.08 kHz as measured on a spectrum analyzer.



Plot 8c: plot of the BPSK 99% emission bandwidth.
Measured value is 17.16 kHz as measured on a spectrum analyzer

6 Peak to Average values correction

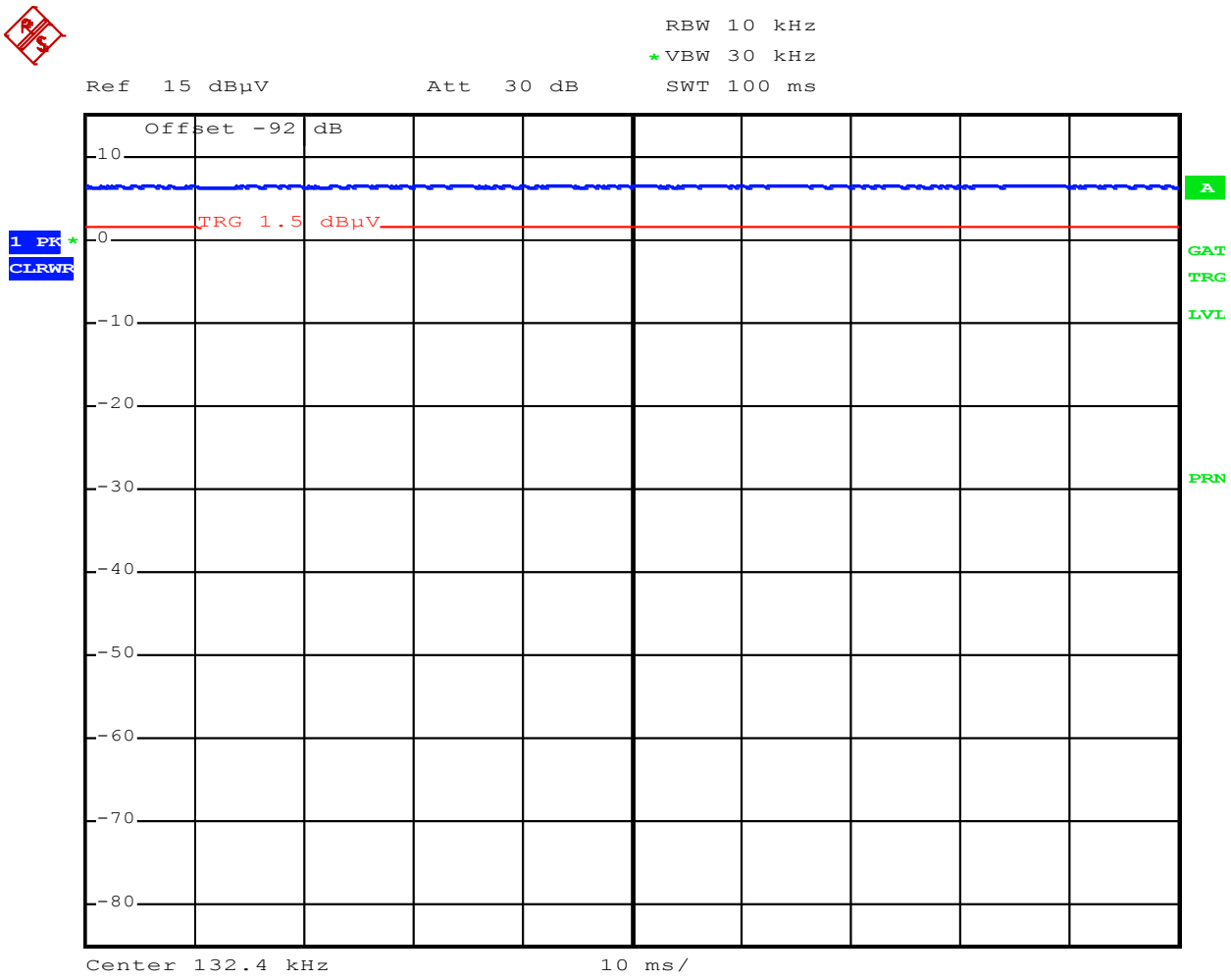
The plots below shows the duty cycle of the EUT.

From the measured Peak values the average values are calculated by the formula:

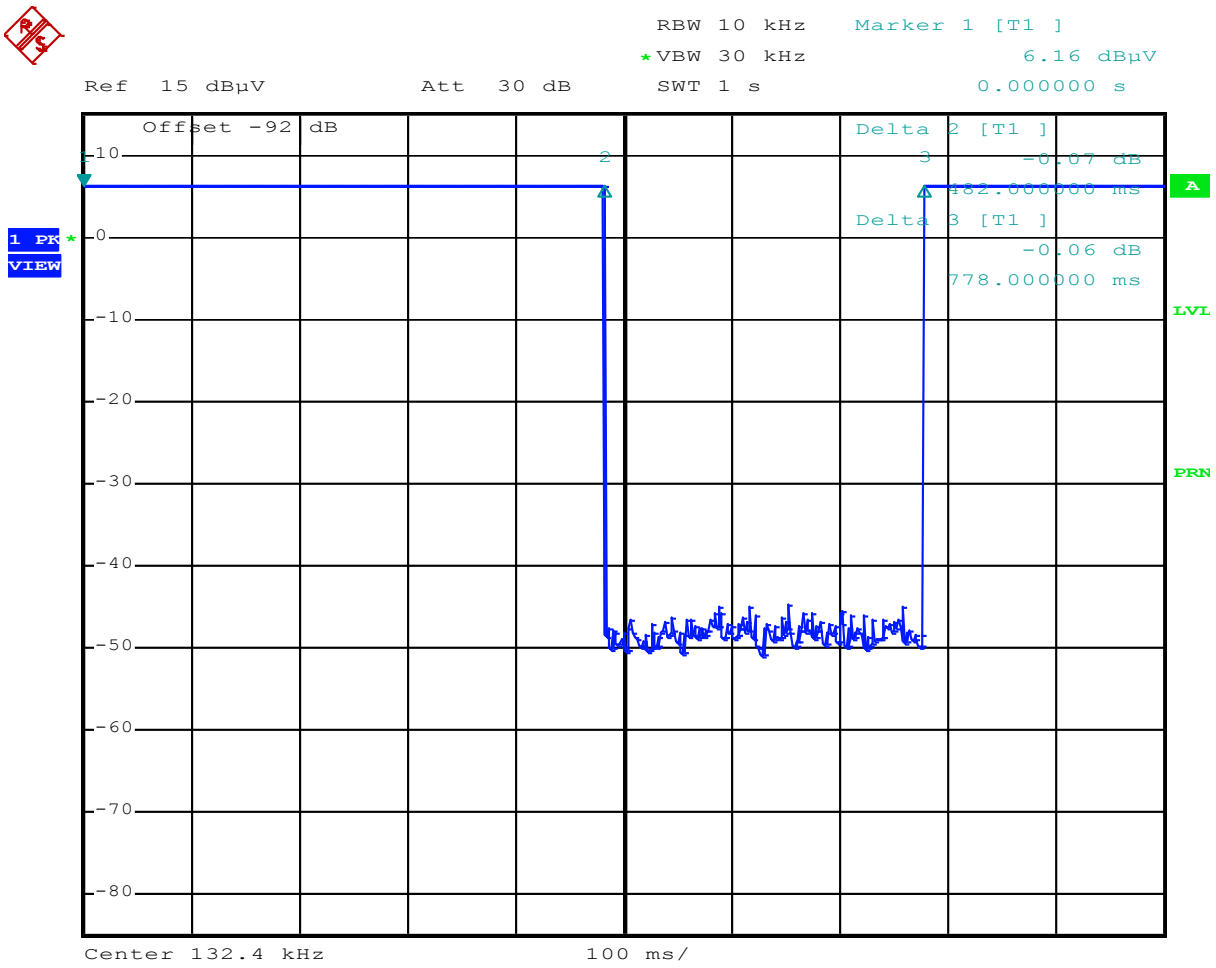
Average value = Peak value – Duty cycle factor

The duty cycle factor is obtained from the actual RF On time in a 100ms period. From plot 9 and plot 10 it can be seen that the RF On time of the EUT is more than 100ms. In this case the Duty cycle factor results in:

Duty cycle factor = 20 Log (T^{ON} / 0,1) = 20 Log (0,1 / 0,1) = 0 dB.



Plot 9: Duty cycle in a 100ms period, measured on a spectrum analyzer



Plot 10: actual RF ON time of the EUT (while reading a card), measured on a spectrum analyzer

7 List of utilized test equipment.

Inventory number	Description	Brand	Model	Last cal.	Next cal.
12476	Antenna mast	EMCO	TR3	NA	NA
12512	LISN	EMCO	3625/2	01/2012	01/2014
13313	Pulse Limiter	R&S	ESH3-Z2	02/2013	02/2014
15453	Active loopant. 60 cm	Chase	HLA6120	05/2013	05/2014
99877	Biconilog Testantenna	Teseq	CBL 6111D	06/2013	06/2014
15667	Measuring receiver	R&S	ESCS30	06/2013	06/2014
99107	Controller	Heinrich Deisel	4630-100	NA	NA
99161	Variac 250V 6A	RFT	LTS006	NA	NA
99538	Spectrum analyzer	R&S	FSP40	05/2013	05/2014
99852/ 99857	Temperature-Humiditymeter	Extech	SD500	02/2013	02/2014
99580/ 99847	Anechoic Room	Siepel	FCC listed: 90828 IC: 2932G-2	02/2012	02/2015
99861	Controller	Maturo	SCU/088/8090811	NA	NA
99609	Antenna mast	EMCS	AP-4702C	NA	NA
99683	Loop antenna, 6cm	NA	7405-901	9/2014	9/2014
99699	Measuring receiver	R&S	ESCI	03/2013	03/2014
99858	RF Cable S-AR	Gigalink	APG0500	01/2013	01/2014

NA= Not Applicable

Attestation of Similarity

The **INID SmartProx** reader product family consists of different models that incorporate an identical PWA (**NGRP-LF**) that has integral: Power Section, I/O Section, Digital Processing Section, RF Section and Antenna. The PWA has optional integral keyboard. The integral I/O Section of the PWA is equipped with one out of three possible interfaces. This board is then placed within different plastic enclosures that do not impact compliance for Safety, Radio, Emissions and immunity requirements. In cases where the basic geometries may affect compliance, prescans are performed in order to identify the worst case model. All Engineering justifications and or compliance impacts are addressed within the report in the form of additional testing and/or notes.

Models 5200, 5210, 5220, 5240, 5250 and 5260

Reader Type #1 - Mullion - with keyboard

Model number	Enclosure	PWA	Key-board	WG C&D TTL	RS485 RS422	RS232
5240	Plastic	NGRP-LF	Y	Y	-	-
5250	Plastic	NGRP-LF	Y	-	Y	-
5260	Plastic	NGRP-LF	Y	-	-	Y
Differences	These models only differ in the integral I/O section on the PWA.					

Reader Type #2 - Mullion – without keyboard

Model number	Enclosure	PWA	Key-board	WG C&D TTL	RS485 RS422	RS232
5200	Plastic	NGRP-LF	-	Y	-	-
5210	Plastic	NGRP-LF	-	-	Y	-
5220	Plastic	NGRP-LF	-	-	-	Y
Differences	1. These models only differ in the integral I/O section on the PWA. 2. The only difference with **reader type #1** is the absence of the keyboard.					

Supporting product photos are on the following pages, under the signature below

Company Representative Signature:
Mark de Olde / Chief Technical Officer

March 28th, 2014

Statement date:

Attestation of Similarity

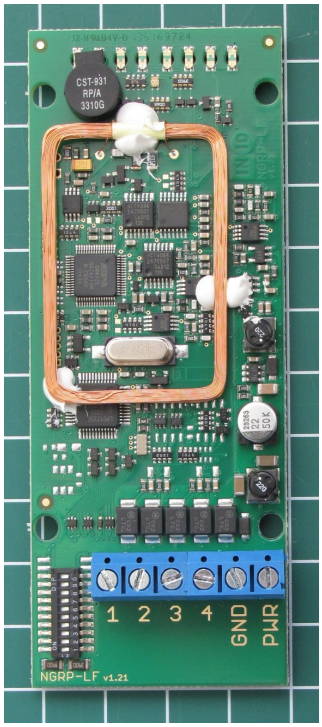
Product photos

left: INID SmartProx reader, Model numbers: 5200, 5210, 5220.

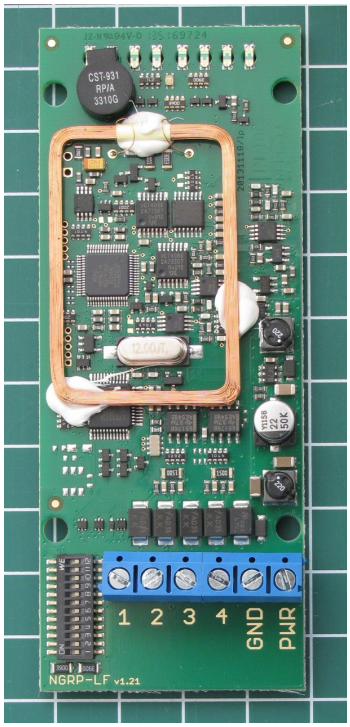
right: INID SmartProx PIN reader, Model numbers: 5240, 5250, 5260.

Attestation of Similarity

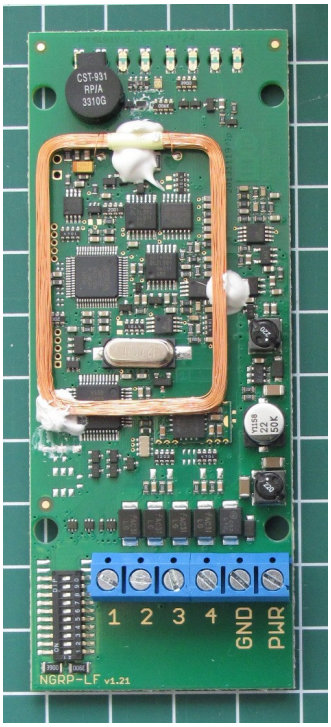
Connector side



model numbers 5200, 5240

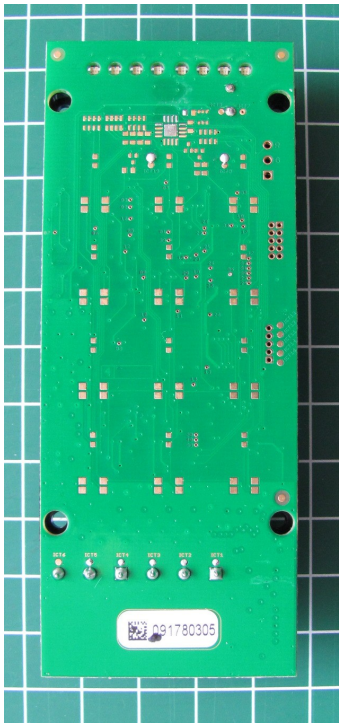


model numbers 5210, 5250

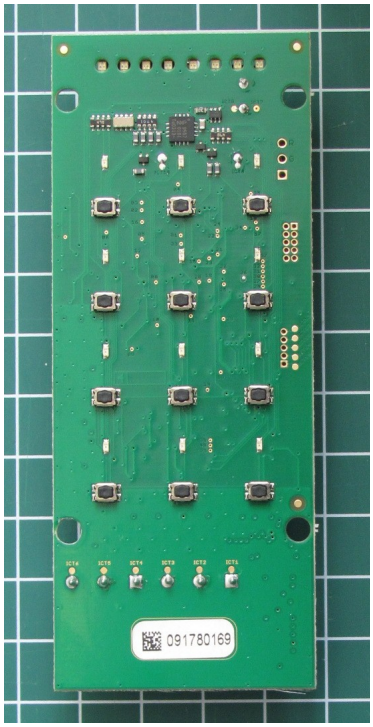


model numbers 5220, 5260

PIN pad side



model numbers 5200, 5210, 5220



model numbers 5240, 5250, 5260