



EUROFINS PRODUCT SERVICE GMBH



TEST-REPORT

**FCC 47 CFR PART 15 SUBPART C
IC RSS 210 ISSUE 8**

Handheld RFID Tag Read/Writer

LOC100

**FCC ID: YCB-LOC100
IC: 5879A-LOC100**

TEST REPORT NUMBER: G0M-1106-1188-C-1



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1 General Information

1.1 Notes

The results of this test report relate exclusively to the item tested as specified in chapter "Description of test item" and are not transferable to any other test items.

Eurofins Product Service GmbH is not responsible for any generalizations and conclusions drawn from this report. Any modification of the test item can lead to invalidity of test results and this test report may therefore be not applicable to the modified test item.

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Operator:

24.08.2011

M. Handrik



Date

Eurofins-Lab.

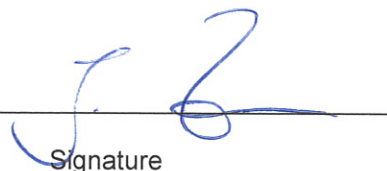
Name

Signature

Technical responsibility for area of testing:

24.08.2011

J. Zimmermann



Date

Eurofins

Name

Signature

1.2 Testing laboratory

EUROFINS PRODUCT SERVICE GMBH
Storkower Strasse 38c
D-15526 Reichenwalde b. Berlin
Germany
Telephone :+49 33631 888 00
Telefax :+49 33631 888 660

DAKKS ACCREDITED TESTING LABORATORY
DAKKS-REGISTRATION NUMBER: D-PL-12092-01-01

RECOGNIZED NOTIFIED BODY EMC
REGISTRATION NUMBER: BNetzA-bS EMV-07/61

RECOGNIZED NOTIFIED BODY R&TTE
REGISTRATION NUMBER: BNetzA-bS-02/51-53

FCC FILED TEST LABORATORY
REG.-No. 96970

A2LA ACCREDITED TESTING LABORATORY
CERTIFICATE No. 1983.01

BLUETOOTH QUALIFICATION TEST FACILITY (BQTF)
ACCREDITED BY BLUETOOTH QUALIFICATION REVIEW BOARD

INDUSTRY CANADA FILED TEST LABORATORY
REG. NO. IC 3470

Test location, where different:

Name	: ./.
Street	: ./.
Town	: ./.
Country	: ./.
Telephone	: ./.
Fax	: ./.

1.3 Details of approval holder

Name : HACH LANGE GmbH
Street : Willstaetterstr. 11
Town : 40549 Duesseldorf
Country : Germany
Telephone : +49 211 5288 140
Fax : +49 211 5288 234

Contact : Herr Michael Schuster
Telephone : +49 211 5288 140

Manufacturer:
(if applicable)

Name : HACH LANGE GmbH
Street : Willstaetterstr. 11
Town : 40549 Duesseldorf
Country : Germany

1.4 Application details

Date of receipt of application : 17.06.2011
Date of receipt of test item : 17.06.2011
Date of test : 09. – 10.05.2011

1.5 Acronyms and abbreviations

EUT : Equipment under Test
TX : Transmission
RX : Reception
RBW : Measurement Resolution Bandwidth
Pol : Measurement Polarization
e.i.r.p. : Equivalent isotropic radiated power
 T_{nom} : Nominal Temperature
 T_{min} : Minimum Temperature
 T_{max} : Maximum Temperature
 V_{nom} : Nominal Supply Voltage
 V_{min} : Minimum Supply Voltage
 V_{max} : Maximum Supply Voltage
VDC : DC voltage
N/A : Not applicable
IC : Industry Canada

1.6 Test standards

Technical standard : ☒ **FCC 47 CFR PART 15 SUBPART C**
☒ **IC RSS 210 ISSUE 8**

1.7 Test item

Description of test item : Handheld RFID Tag Read/Writer
Type identification : LOC100
Brand Name : Hach Lange
Serial number : Unspecified
Hardware version : Cont Brd-XMF810-G, RF Brd-XMF812-E
Software version : 2.85
Equipment type : End product

Technical data

Radio type : Transceiver
Radio technology : RFID
Frequency range : 13.56MHz
Assigned frequency band : 13.410–13.553MHz
Tested frequencies : F₁ 13.56MHz
Antenna type(s) : integral
Antenna model(s) : PCB loop antenna
Number of antennas : 1
Antenna gain(s) : -29.7381dB
Power supply : 2.4VDC (Battery)
Modulation(s) : Amplitude
Device classification : Portable Device (Human Body distance < 20 cm)

1.8 Additional information

Radio part is switched off in charging mode. Frequency stability testing with voltage variation has been omitted.

2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed.

☒

or

The deviations as specified in 2.5 were ascertained in the course of the tests performed.

☐

2.2 Test environment

Temperature : 22 ... 26°C

Relative humidity content : 20 ... 75%

Air pressure : 86 ... 103kPa

Extreme conditions parameters:

V_{nom} : 2.4VDC
 V_{min} : N/A
 V_{max} : N/A

T_{nom} : 20°C
 T_{min} : -20°C
 T_{max} : 50°C

Other parameter: None

2.3 Test equipment utilized

Measurement Equipment List					
No.:	Measurement device:	Type:	Manufacturer:	Last Cal.	Next Cal.
ETS 0086	Semi-anechoic chamber	AC1	Frankonia	09.12.2010	09.12.2012
ETS 0253	Spectrum Analyzer	FSIQ26	Rohde & Schwarz	04.11.2010	04.11.2012
ETS 0265	Loop Antenna	HFRA 9150	Schwarzbeck		
ETS 0030	Biconical Antenna	HK 116	Rohde & Schwarz	10.02.2011	20.02.2012
ETS 0295	LPD Antenna	HL 223	Rohde & Schwarz	09.02.2011	09.02.2012
ETS 0018	Horn Antenna	BBHA 9120D	Schwarzbeck	26.08.2010	26.08.2011
ETS 0432	Amplifier-Matrix			02.06.2010	02.06.2012
ETS 0496	Spectrum Analyzer	FSP30	Rohde & Schwarz	26.08.2010	26.08.2011
ETS 0288	LISN	ESH2-Z5	Rohde & Schwarz	07.09.2010	07.09.2012

2.4 Sample emission level calculation

The following is a description of terms and a sample calculation, as appears in the radiated emissions data table. The numbers used in the calculation are for example only. There is no direct correlation to the specific data taken for the product described in this document:

Reading:

This is the reading obtained on the spectrum analyzer in dB μ V. Any external preamplifiers used are taken into account through internal analyzer settings.

A.F.:

This is the antenna factor for the receiving antenna. It is a conversion factor, which converts electric fields strengths to voltages, which can be measured directly on the spectrum analyzer. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

$$\text{Reading on Analyzer (dB}\mu\text{V)} + \text{A.F. (dB)} = \text{Net field strength (dB}\mu\text{V/m)}$$

Net:

This is the net field strength measurement (as shown above).

Limit:

This is the FCC Class B radiated emission limit (in units of dB μ V/m). The FCC limits are given in units of μ V/m. The following formula is used to convert the units of μ V/m to dB μ V/m:

$$\text{Limit (dB}\mu\text{V/m)} = 20 \cdot \log(\mu\text{V/m})$$

Margin:

This is the margin of compliance below the FCC limit. The units are given in dB. A negative margin indicates the emission was below the limit. A positive margin indicates that the emission exceeds the limit.

Example only:

Reading	+	AF	=	Net Reading	:	Net reading - FCC limit = Margin
21.5 dB μ V	+	26 dB	=	47.5 dB μ V/m	:	47.5 dB μ V/m - 57.0 dB μ V/m = -9.5 dB

2.5 Test results

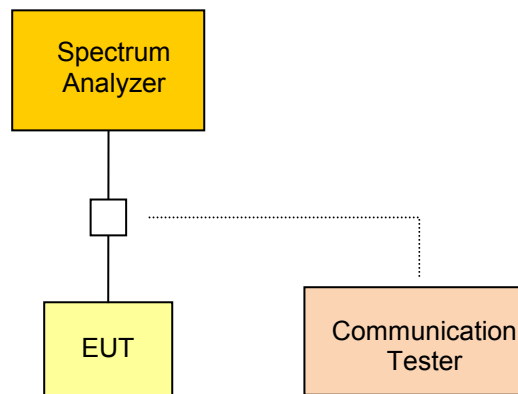
Test case	Clause	Required	Result	Remarks
INFORMATIONAL TRANSMITTER PARAMETERS				
Occupied Bandwidth	IC RSS-Gen. 4.6.1	<input checked="" type="checkbox"/>	N/A	
TRANSMITTER PARAMETERS				
In-band field strength emissions	FCC § 15.225(a-c) IC RSS-210 A2.6 (a-c)	<input checked="" type="checkbox"/>	PASS	
Emission radiated outside the specified frequency band	FCC § 15.225(d) FCC § 15.209 IC RSS-210 A2.9(d) IC RSS-gen 4.97.2.5 IC RSS-gen 7.2.5	<input checked="" type="checkbox"/>	PASS	
Frequency stability	FCC § 15.225(e) FCC § 15.209 IC RSS-210 A2.6	<input checked="" type="checkbox"/>	PASS	
RECEIVER PARAMETERS				
Radiated spurious emissions	IC RSS-Gen 4.10 IC RSS-Gen 6.1	<input checked="" type="checkbox"/>	PASS	
POWER LINE PARAMETERS				
AC power line conducted emissions	FCC § 15.207 IC RSS-Gen. 7.2.4	<input checked="" type="checkbox"/>	PASS	

3 Informational Transmitter parameters

3.1 Occupied Bandwidth

According RSS-Gen Section 4.6.1 the 99% emission bandwidth occupied by the modulated transmitted signal has to be reported as calculated or measured.

3.1.1 Measurement procedure



The EUT is connected to a spectrum analyzer and set to transmission mode (using a communication tester if needed) with maximum power under normal test conditions. The span of the analyzer is set wide enough to capture all significant emissions of the modulation spectrum. The resolutions bandwidth is set as close as possible to 1% of the selected span without being below 1%. The occupied bandwidth is then measured evaluated by an internal measurement procedure of the analyzer.

3.1.2 Results

Transmitter occupied bandwidth			
Measurement Conditions			
Power occupation		99%	
Channel [MHz]	Lower edge frequency [MHz]	Upper edge frequency [MHz]	Occupied Bandwidth [kHz]
13.56	13.55938	13.560412	1.032
See attached diagram in Annex			

4 Transmitter parameters

4.1 In-band field strength emissions

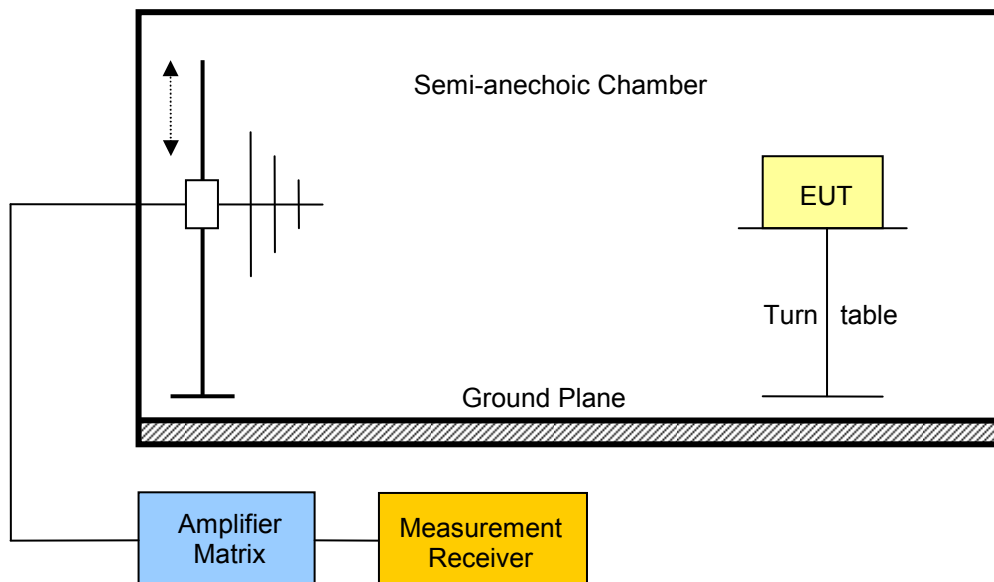
According FCC rules 47 CFR 15.225(a-c) and RSS-210 Section A2.6(a-c) the maximum emitted field strength has to comply with the following limits.

4.1.1 Limits

The field strength measured at 30 metres shall not exceed the limits in the following table:

Maximum emitted field strength	
Frequency range	field strength @ 30m
13.553 – 13.567	15848 μ V/m (84dB μ V/m)
13.410 – 13.553 13.567 – 13.710	334 μ V/m (50.5dB μ V/m)
13.110 – 13.410 13.710 – 14.010	106 μ V/m (40.5dB μ V/m)
< 13.110 > 14.010	30 μ V/m (29.5dB μ V/m)

4.1.2 Measurement procedure



The EUT is placed on a table in a semi-anechoic chamber. The EUT is activated with the transmission modes stated in the test report. The emission level of is scanned. To obtain the peak emission level the EUT is rotated through 360° and the height of the measurement antenna is changed.

Emission measurement is performed at a distance of 3m and the measurement results are corrected using an extrapolation of 40dB/decade at frequencies below 30MHz or 20dB/decade at frequencies above 30MHz according to 15.31 (f)(1) & 15.31 (f)(2)

4.1.3 Results

Fundamental maximum field strength emissions @ 30m				
Emission [MHz]	Max. field strength [dB μ V/m]	Detector	Limit [dB μ V/m]	Margin [dB]
13.56	13.84	peak	84	-70.16
See attached diagrams in Annex				
Verdict				PASS

Comment: Due to the fact that the peak emission field-strength is below the quasi-peak emission limit, the corresponding quasi-peak measurement has been omitted and compliance with the limits is shown for the peak emissions.

4.2 Emission radiated outside the specified frequency band

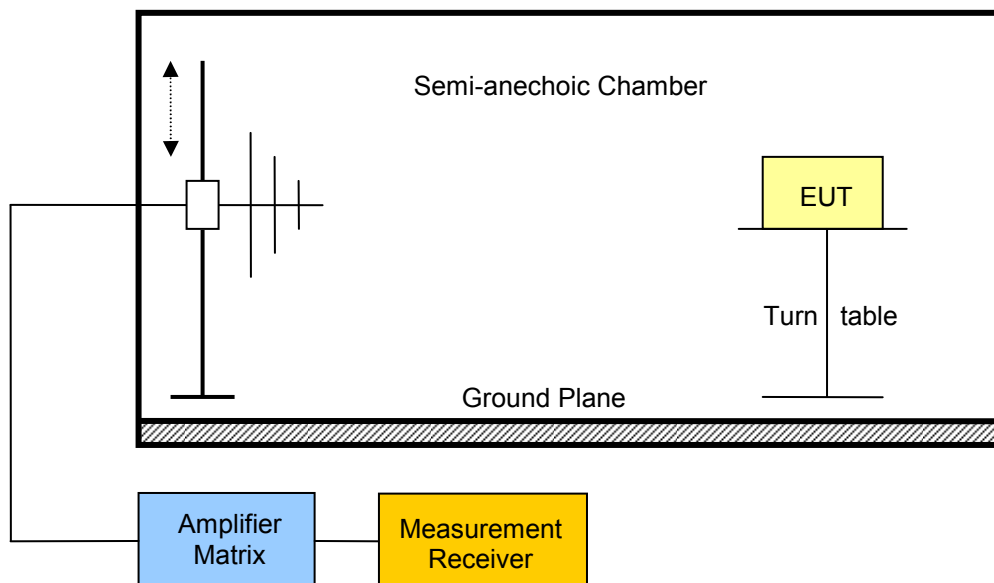
According FCC rules 47 CFR 15.209, 15.225(d) and RSS-210 Section A2.6(d) unwanted emissions in the spurious domain are power limited as given below.

4.2.1 Limits

General spurious emission limits				
Frequency range [MHz]	Detector	Limit [$\mu\text{V/m}$]	Calculated Limit 3m [$\text{dB}\mu\text{V/m}$]	Measurement Distance [m]
0.009 – 0.490	Quasi-Peak	2400/F[kHz]	48.5 – 13.8	300
0.490 – 1.705	Quasi-Peak	2400/F[kHz]	13.8 – 1.4	30
1.705 – 13.110	Quasi-Peak	30	29.5	30
14.010 – 13.110	Quasi-Peak	30	29.5	30
30 – 88	Quasi-Peak	100	40	3
88 – 216	Quasi-Peak	150	43.5	3
216 – 960	Quasi-Peak	200	46	3
960 – 1000	Quasi-Peak	500	54	3
> 1000	Average	500	54	3

Measurement procedure

The spurious emission measurement is performed on 3m a semi-anechoic test site.



The EUT is placed on a non-metallic table. Any emission is received by the measurement antenna and measured via a measurement receiver connected to the antenna.

To obtain the maximum emission the EUT is rotated through 360°.

Due to practical reasons the spurious emission level check is first performed with a peak detector and the quasi-peak and average limits.

If any emission is detected that gets close to the emission limit the detector is changed and the quasi-peak or average detector is used. Which detector is used is determined by the emission frequency. If pulsed transmission is used, averaging over the pulse train is used.

The measurement values are also corrected to obtain the field strength values at the defined measurement distances of the emission limits. Below 30MHz and extrapolation factor of 40dB/decade is used and at 30MHz and above an extrapolation factor of 20dB/decade is used (47 CRF 15.31(f)).

The measurement is performed over the frequency range of 9kHz up to 1GHz.

4.2.2 Results

Transmitter radiated spurious emissions						
Measurement Conditions						
Measurement distance		3m				
Modulated		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Channel Frequency [MHz]	Emission Frequency [MHz]	Polarization	Measured Field Strength [dBµV/m]	Limit [dBµV/m]	Detector	Margin [dB]
13.56	0.019	N/A	-35.02	41.92	peak	-76.94
	0.100	N/A	-45.99	27.60	peak	-73.59
	0.163	N/A	-52.34	23.36	peak	-75.70
	352	h	30.08	46	peak	-15.92
	352	v	35.25	46	peak	-10.75
See attached diagrams in Annex						
Verdict					PASS	

Comment: Due to the fact that the peak emission field-strength is below the average/quasi-peak emission limit, the corresponding average/quasi-peak measurement has been omitted and compliance with the limits is shown for the peak emissions.

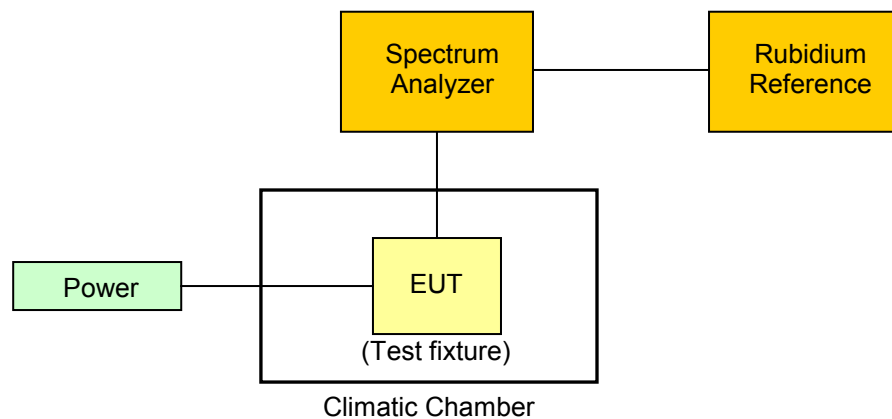
4.3 Frequency stability

According FCC rules 47 CFR 15.225(e) and RSS-210 Section A2.6 the frequency stability has to comply with the requirements given below.

4.3.1 Limits

Frequency error limits		
Temperature	Voltage	Frequency error limit
-20	V_{nom}	$\pm 0.01\%$ ($\pm 100\text{ppm}$)
-10	V_{nom}	$\pm 0.01\%$ ($\pm 100\text{ppm}$)
0	V_{nom}	$\pm 0.01\%$ ($\pm 100\text{ppm}$)
10	V_{nom}	$\pm 0.01\%$ ($\pm 100\text{ppm}$)
20	V_{nom}	$\pm 0.01\%$ ($\pm 100\text{ppm}$)
30	V_{nom}	$\pm 0.01\%$ ($\pm 100\text{ppm}$)
40	V_{nom}	$\pm 0.01\%$ ($\pm 100\text{ppm}$)
50	V_{nom}	$\pm 0.01\%$ ($\pm 100\text{ppm}$)
20	$0.85 \cdot V_{nom}$	$\pm 0.01\%$ ($\pm 100\text{ppm}$)
20	$1.15 \cdot V_{nom}$	$\pm 0.01\%$ ($\pm 100\text{ppm}$)

4.3.2 Measurement procedure



Measurement:

The EUT is connected to the spectrum analyzer. The supply voltage and ambient temperature of the EUT is set to nominal. The transmitter of the EUT is activated without modulation and the peak carrier frequency is measured. The frequency error is calculated as the deviation from the nominal carrier frequency stated by the provider. The measurement is performed under normal and extreme conditions.

4.3.3 Results

Frequency error			
Measurement Conditions			
Nominal frequency		13.56MHz	
Nominal Voltage		2.4VDC	
Conditions		Frequency [MHz]	Frequency error [ppm]
T = -20°C	V _{nom} = 2.4VDC	13.5599266	-5.41
T = -10°C	V _{nom} = 2.4VDC	13.5599505	-3.65
T = 0°C	V _{nom} = 2.4VDC	13.5599401	-4.42
T = 10°C	V _{nom} = 2.4VDC	13.5599151	-6.26
T = 20°C	V _{nom} = 2.4VDC	13.5598433	-11.56
T = 30°C	V _{nom} = 2.4VDC	13.5598385	-11.91
T = 40°C	V _{nom} = 2.4VDC	13.5597975	-14.93
T = 50°C	V _{nom} = 2.4VDC	13.5597715	-16.85
T _{nom} = 20°C	V _{min} = N/A	N/A	N/A
	V _{max} = N/A	N/A	N/A
Measurement uncertainty			148Hz
Verdict			PASS

Comment: Voltage variation has been omitted because the radio is switched off when battery charging mode is active. Therefore the EUT is exclusively battery operated when the radio is operating.

5 Receiver parameters

5.1 Receiver spurious emissions

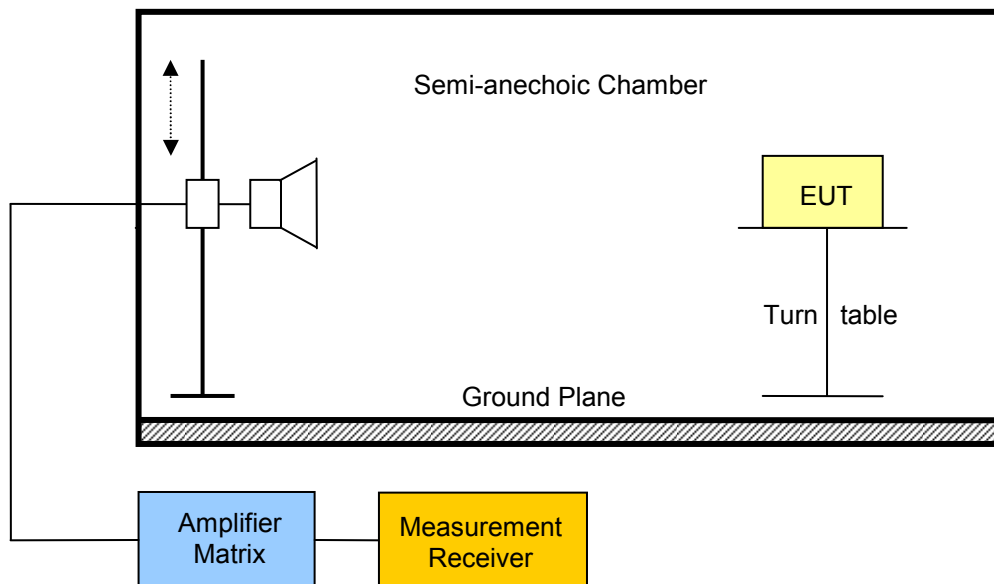
According RSS-Gen Section 4.9 the emissions of unintentional radiators have to comply with limits stated in the rules.

5.1.1 Limits

Receiver spurious emission limits @ 3m				
Frequency range [MHz]	Detector	Limit@3m [$\mu\text{V/m}$]	Calculated Limit @ 3m [dB $\mu\text{V/m}$]	Measurement Distance [m]
30 – 88	Quasi-Peak	100	40	3
88 – 216	Quasi-Peak	150	43.5	3
216 – 960	Quasi-Peak	200	46	3
960 – 1000	Quasi-Peak	500	54	3
> 1000	Average	500	54	3

5.1.2 Measurement procedure

The spurious emission measurement is performed on a 3m open area test site.



The EUT is placed on a non-metallic table. Any emission is received by a loop antenna and measured via a measurement receiver connected to the loop antenna. To obtain the maximum emission the EUT is rotated through 360°.

Due to practical reasons the spurious emission level check is first performed with a peak detector and the quasi-peak and average limits.

If any emission is detected that gets close to the emission limit the detector is changed and the quasi-peak or average detector is used. Which detector is used is determined by the emission frequency. If pulsed transmission is used, averaging over the pulse train is used.

The measurement values are also corrected to obtain the field strength values at the defined measurement distances of the emission limits.

The measurement is performed over the frequency range of 30MHz up to 1GHz harmonic.

5.1.3 Results

Receiver spurious Emissions						
Measurement Conditions						
Measurement distance		3m				
Channel Frequency [MHz]	Emission Frequency [MHz]	Polarization	Measured Field Strength [μV/m]	Limit@3m [μV/m]	Detector	Margin [μV/m]
Standby	195.43	ver	44.72	150	peak	-105.28
	182.85	hor	45.81	150	peak	-104.19
See attached diagrams in Annex						
Verdict					PASS	

* **Note** : If needed the measured field strength values are corrected to reflect the field strength values at the measurement distance stated in the table. Correction acc. $20 \cdot \log_{10}(\text{measurement distance}/\text{limit distance})$.

6 Power Line parameters

6.1 AC power line conducted emissions

According FCC rules 47 CFR 15.207 and RSS-Gen Section 7.2.2 for any 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 given below.

6.1.1 Limits

AC power line emission limits		
Frequency [MHz]	Conducted Limit [dB μ V]	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56	56 to 46
0.5 - 5	56	46
5 - 30	60	50

6.1.2 Measurement procedure

The ac power line emissions are measured using a 50 μ H / 50 Ω line impedance stabilization network (LINS). The radio frequency voltage between each power line and ground at the power terminal is measured.

6.1.3 Results

AC power line emissions	
Conducted emission level	
See attached Diagram	
Verdict	PASS

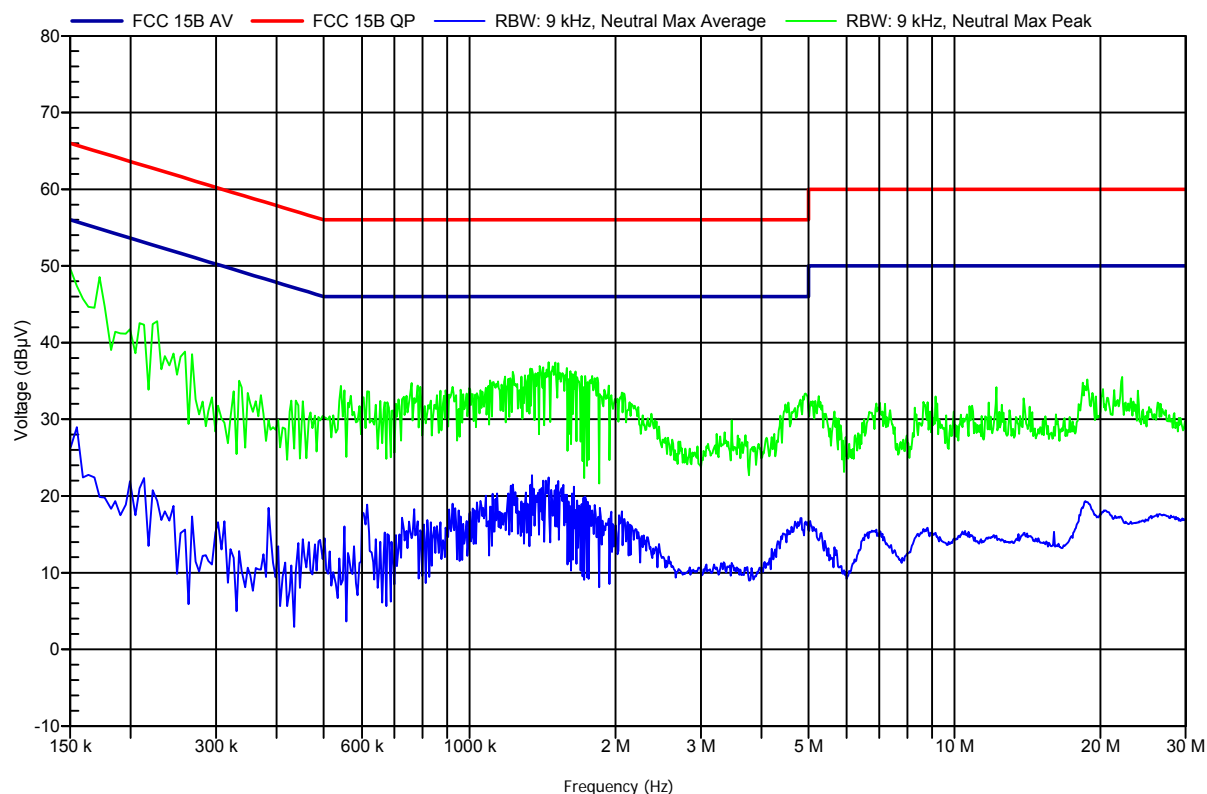
Annex B AC Power line Conducted Emissions

EMI voltage test in the ac-mains according to FCC part 15B

Order number: G0M-1106-1188

Manufacturer:	Hach Lange GmbH
EUT Name:	Handheld RFID Tag Read/Writer
Model:	LOC100
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Marquardt
Test Conditions:	Tnom: 23°C, Unom: 2.4 V DC
LISN:	ESH2-Z5 N
Mode:	charging
Test Date:	20.07.2011
Note:	

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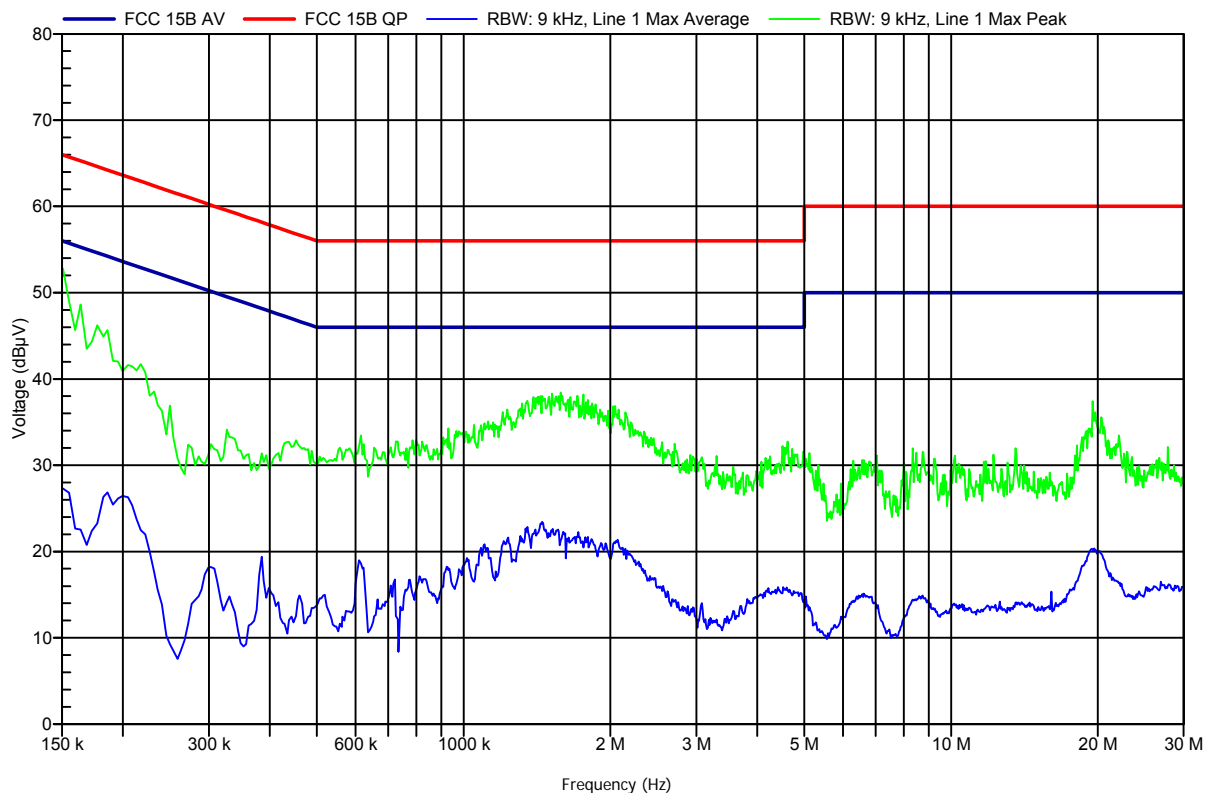


EMI voltage test in the ac-mains according to FCC part 15B

Order number: G0M-1106-1188

Manufacturer: Hach Lange GmbH
 EUT Name: Handheld RFID Tag Read/Writer
 Model: LOC100
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Marquardt
 Test Conditions: Tnom: 23°C, Unom: 2.4 V DC
 LISN: ESH2-Z5 L
 Mode: charging
 Test Date: 20.07.2011
 Note:

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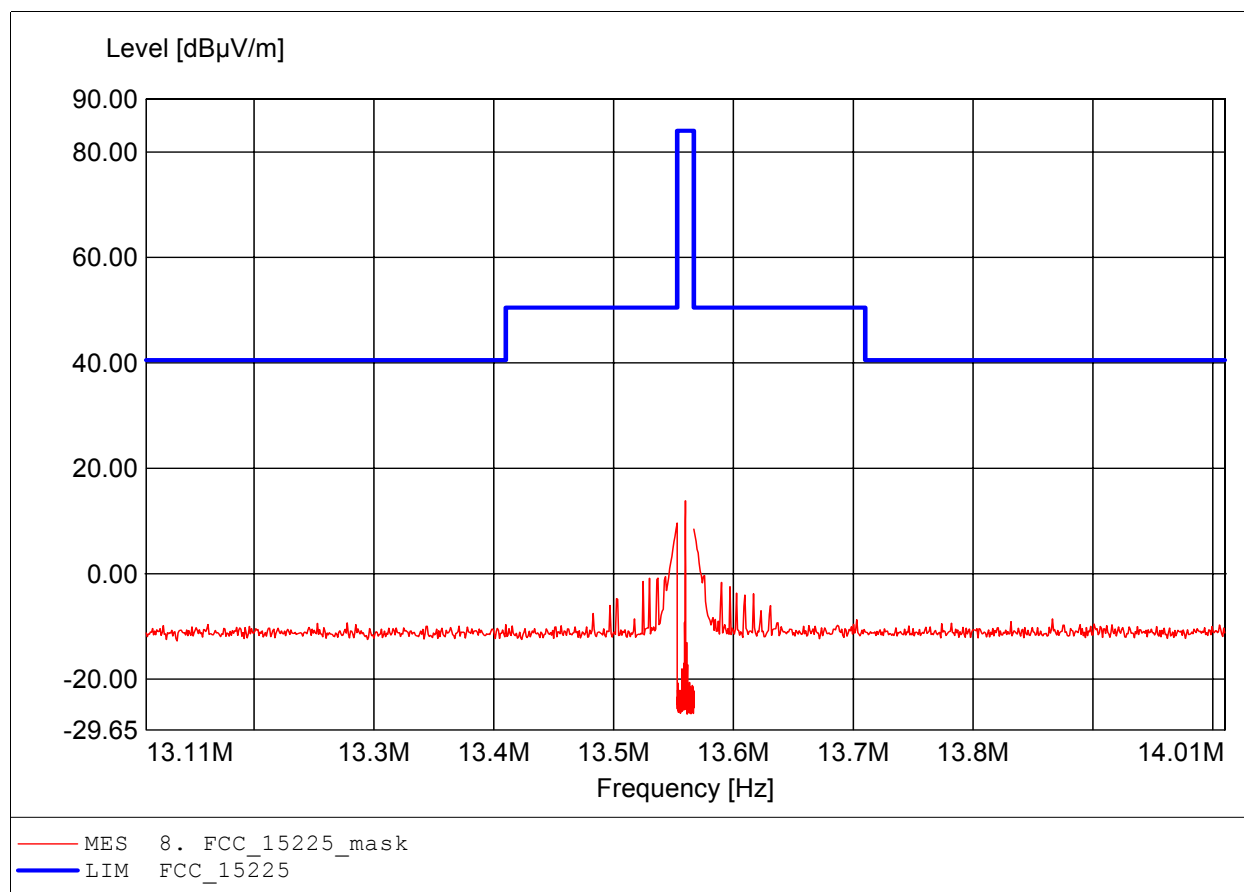


Annex C In-band field strength emissions

Spectrum mask

FCC rules part 15.225

Approval Holder: HACH LANGE GmbH / G0M-1106-1188
EUT: Handheld RFID Tag Read/Writer
Model: LOC100
Operator: Eurofins Product Service GmbH / Mr. Handrik
Test Conditions: Tnom: 22°C / Vnom: 2.4 V DC (battery)
Test Specification: according to §15.209, peak detector
Comment 1: Dist.: 30m, Ant.: HFH2-Z2
Comment 2: Freq: 13.560MHz, Emax: 13.84dBµV/m, RBW: 0.2-10kHz

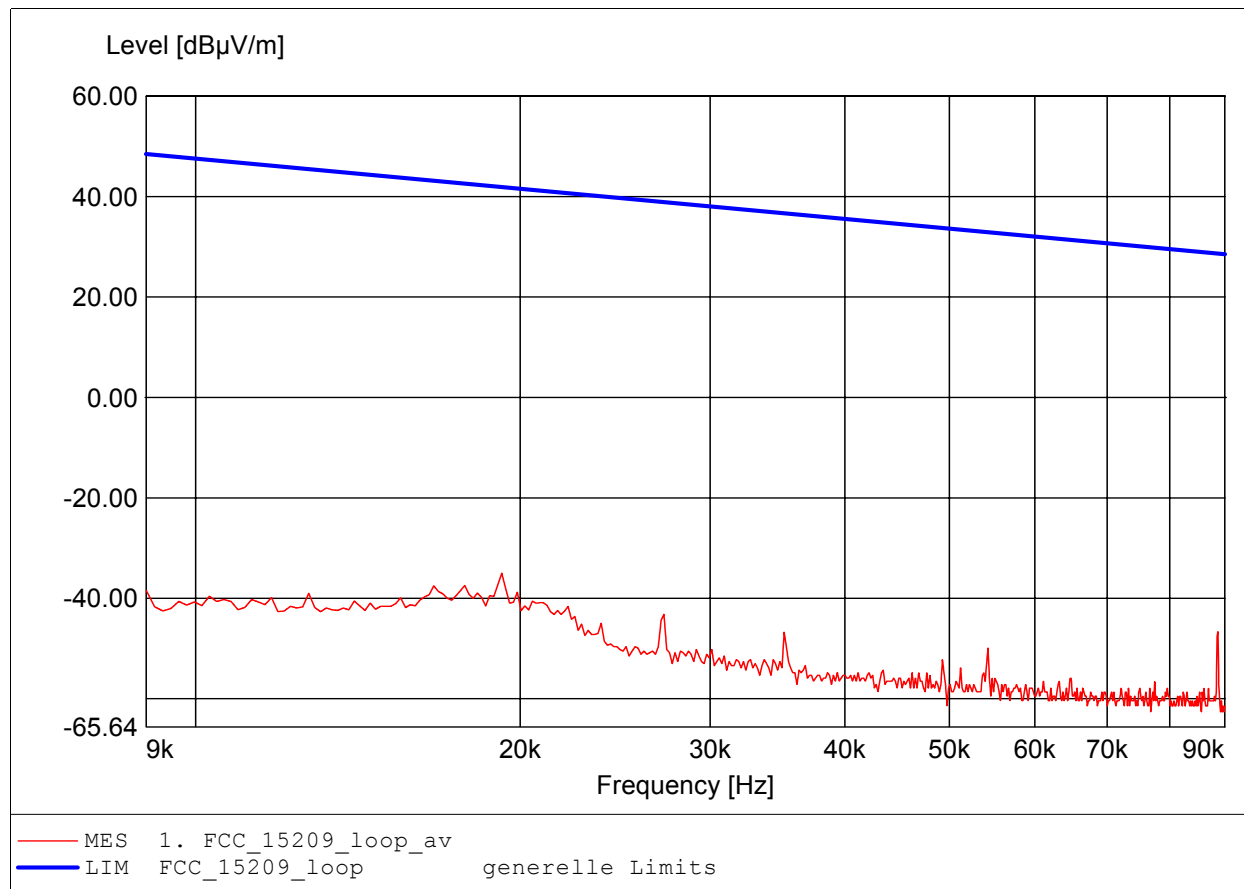


Annex D Out-of-band radiated spurious emissions

Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

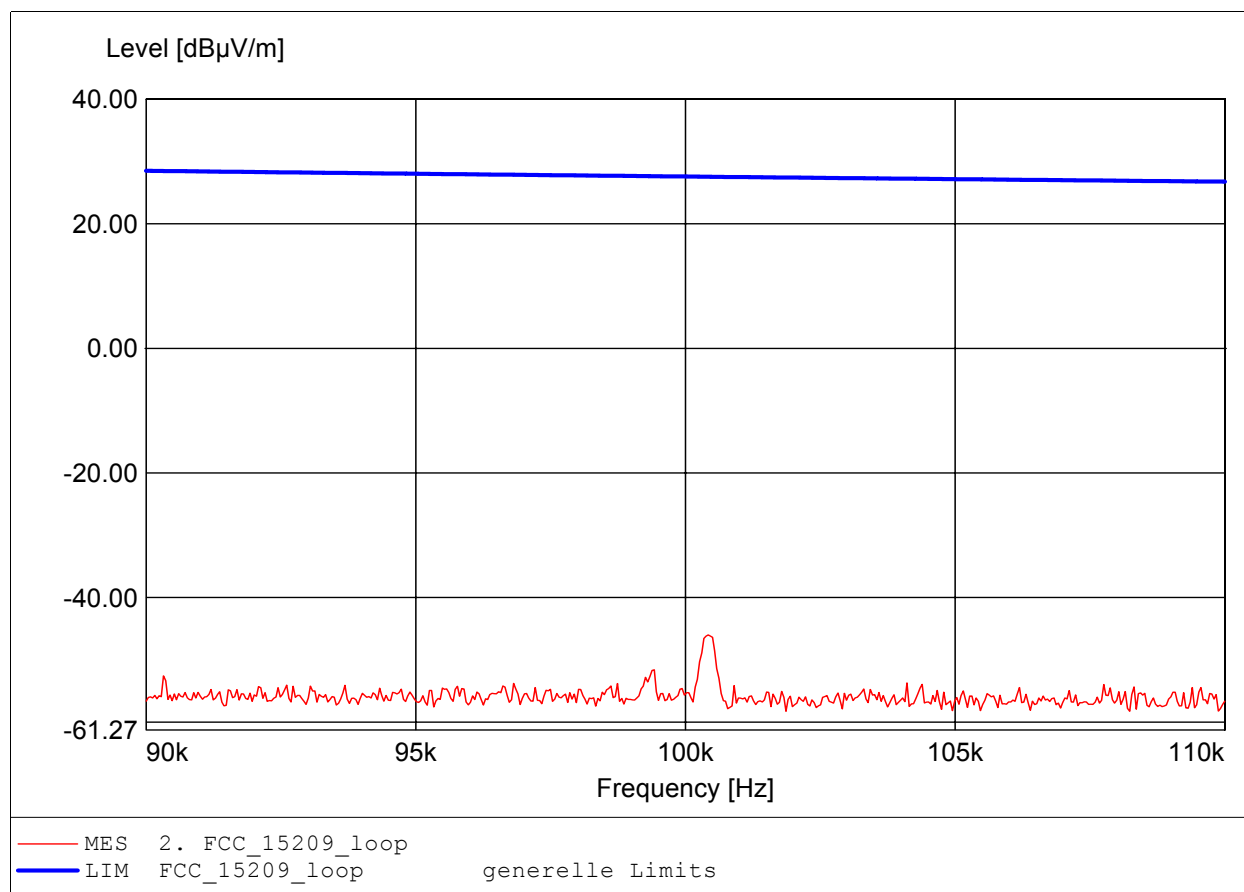
Approval Holder: HACH LANGE GmbH / GOM-1106-1188
EUT: Handheld RFID Tag Read/Writer
Model: LOC100
Operator: Eurofins Product Service GmbH / Mr. Handrik
Test Conditions: Tnom: 22°C / Vnom: 2.4 V DC (battery)
Test Specification: according to §15.209, average detector
Comment 1: Dist.: 300m, Ant.: HFH2-Z2
Comment 2: Freq: 19.226kHz, Emax: -35.02dBµV/m, RBW: 200Hz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

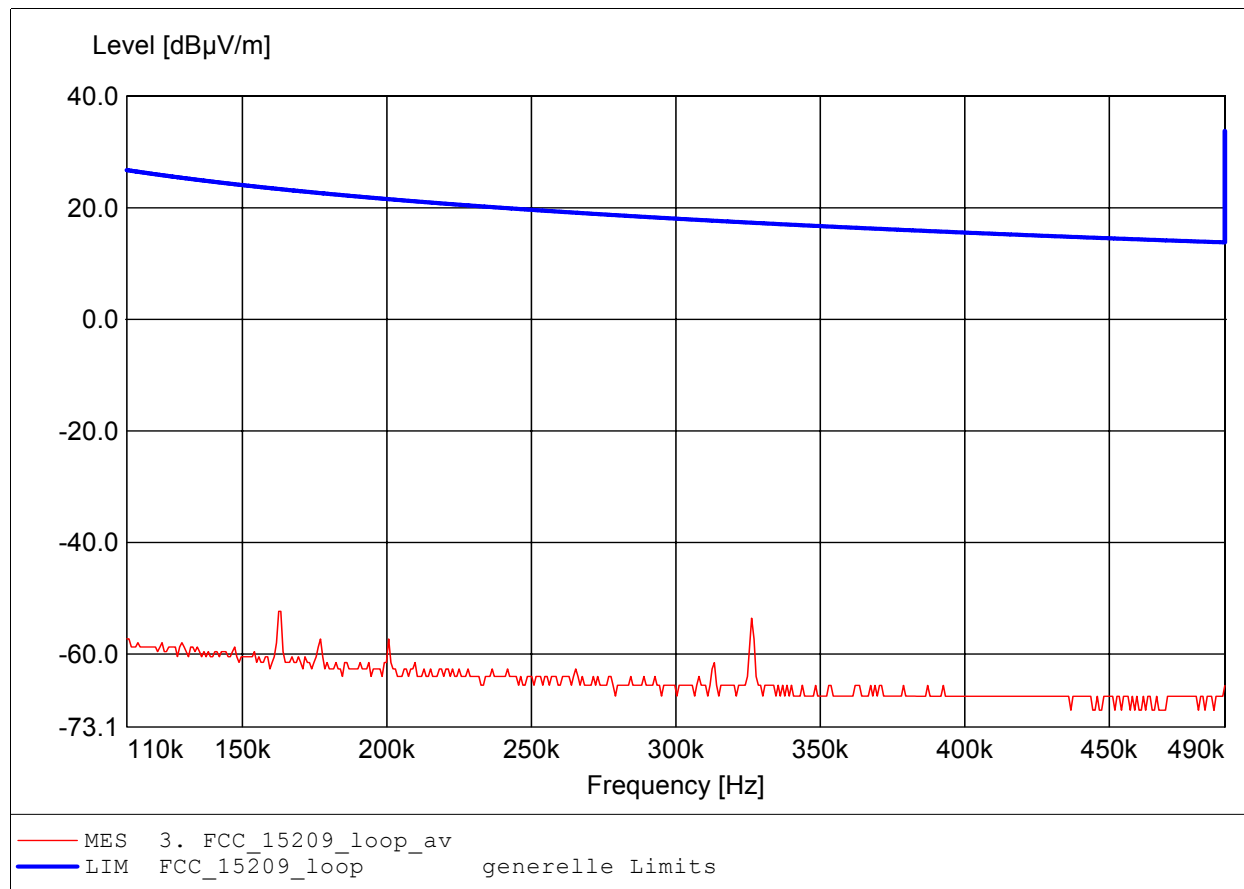
Approval Holder: HACH LANGE GmbH / G0M-1106-1188
EUT: Handheld RFID Tag Read/Writer
Model: LOC100
Operator: Eurofins Product Service GmbH / Mr. Handrik
Test Conditions: Tnom: 22°C / Vnom: 2.4 V DC (battery)
Test Specification: according to §15.209, peak detector
Comment 1: Dist.: 300m, Ant.: HFH2-Z2
Comment 2: Freq: 100.421kHz, Emax: -45.99dBµV/m, RBW: 200Hz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

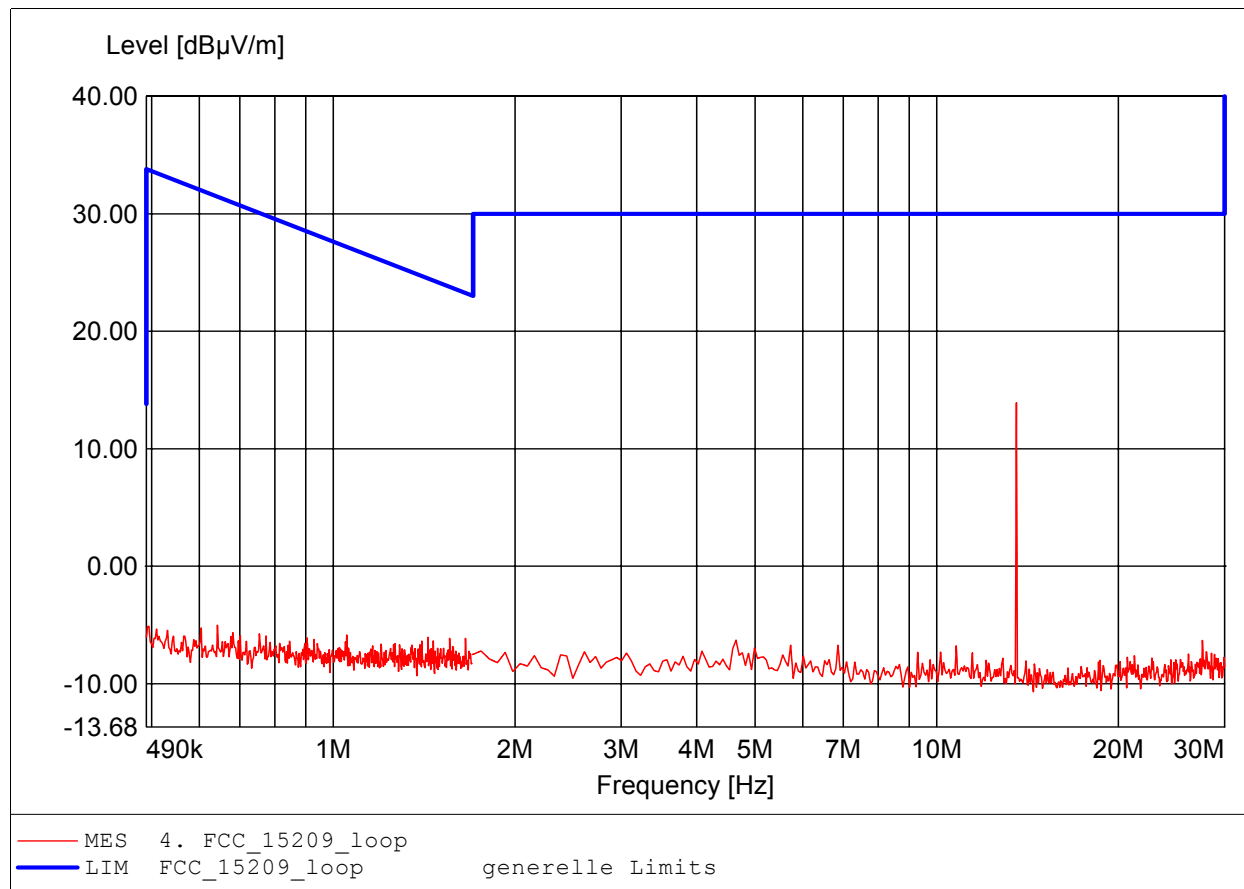
Approval Holder: HACH LANGE GmbH / GOM-1106-1188
EUT: Handheld RFID Tag Read/Writer
Model: LOC100
Operator: Eurofins Product Service GmbH / Mr. Handrik
Test Conditions: Tnom: 22°C / Vnom: 2.4 V DC (battery)
Test Specification: according to §15.209, average detector
Comment 1: Dist.: 300m, Ant.: HFH2-Z2
Comment 2: Freq: 162.545kHz, Emax: -52.34dBµV/m, RBW: 200Hz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

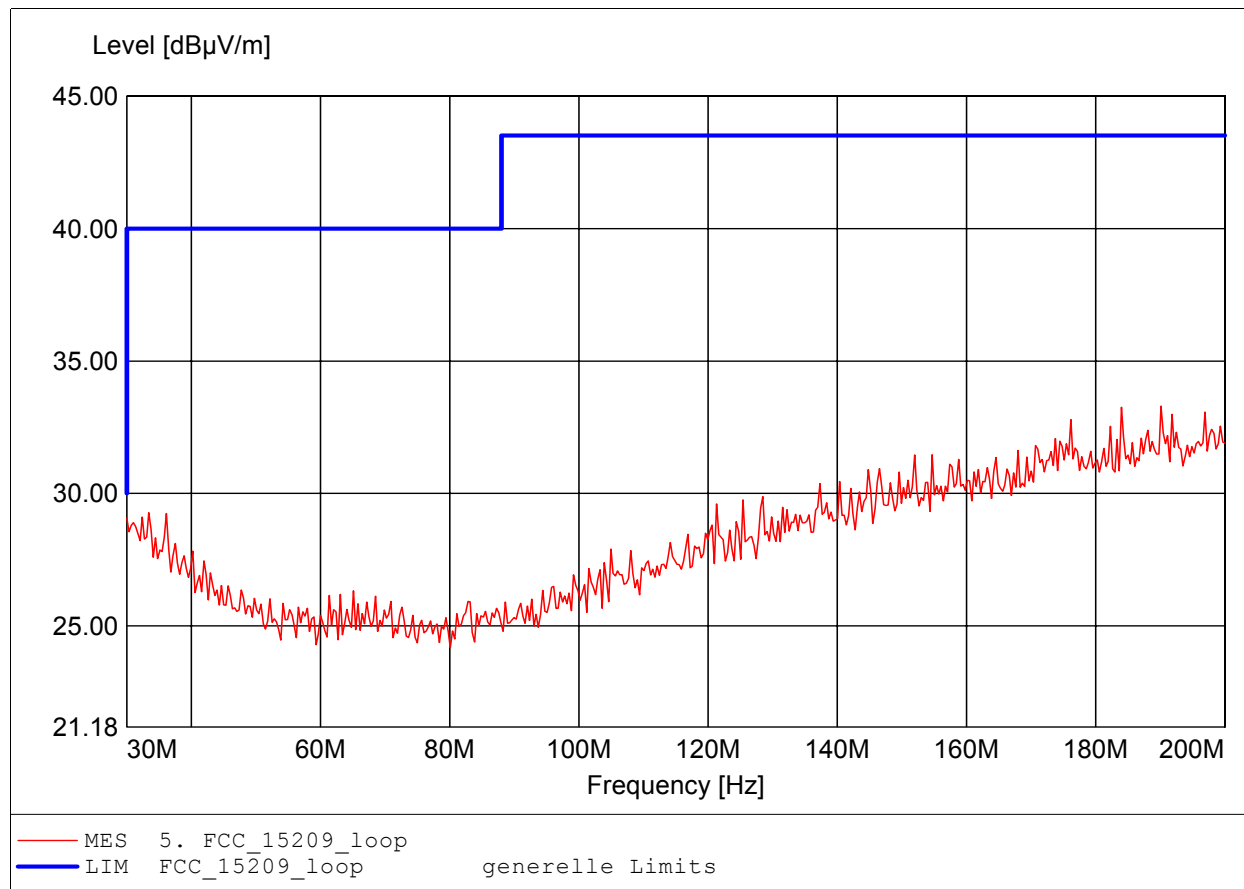
Approval Holder: HACH LANGE GmbH / G0M-1106-1188
EUT: Handheld RFID Tag Read/Writer
Model: LOC100
Operator: Eurofins Product Service GmbH / Mr. Handrik
Test Conditions: Tnom: 22°C / Vnom: 2.4 V DC (battery)
Test Specification: according to §15.209, peak detector
Comment 1: Dist.: 30m, Ant.: HFH2-Z2
Comment 2: Freq: 13.553MHz, Emax: 13.91dBµV/m, RBW: 10kHz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

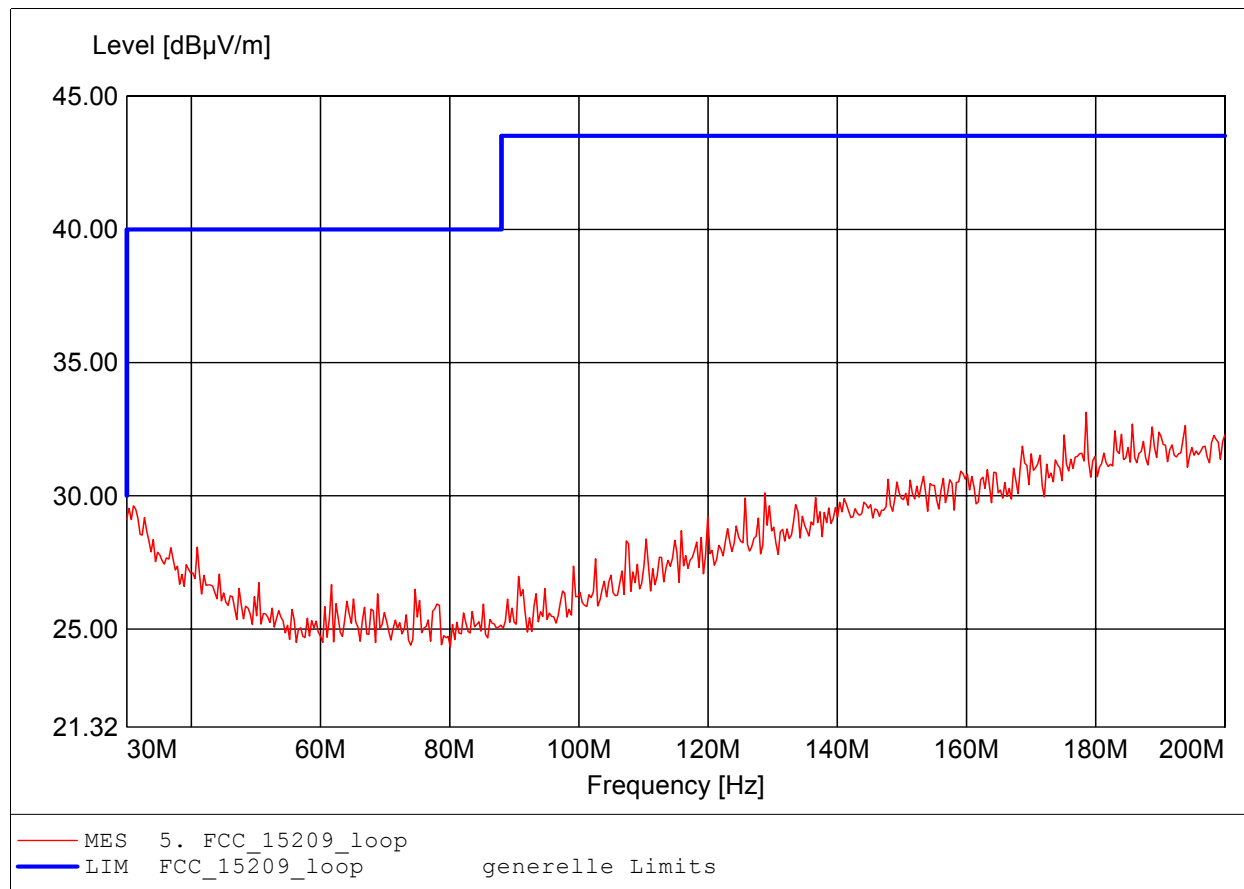
Approval Holder: HACH LANGE GmbH / GOM-1106-1188
EUT: Handheld RFID Tag Read/Writer
Model: LOC100
Operator: Eurofins Product Service GmbH / Mr. Handrik
Test Conditions: Tnom: 22°C / Vnom: 2.4 V DC (battery)
Test Specification: according to §15.209, peak detector
Comment 1: Dist.: 3m, Ant.: HK 116
Comment 2: Freq: 190.120MHz, Emax: 33.30dBµV/m, RBW: 100kHz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

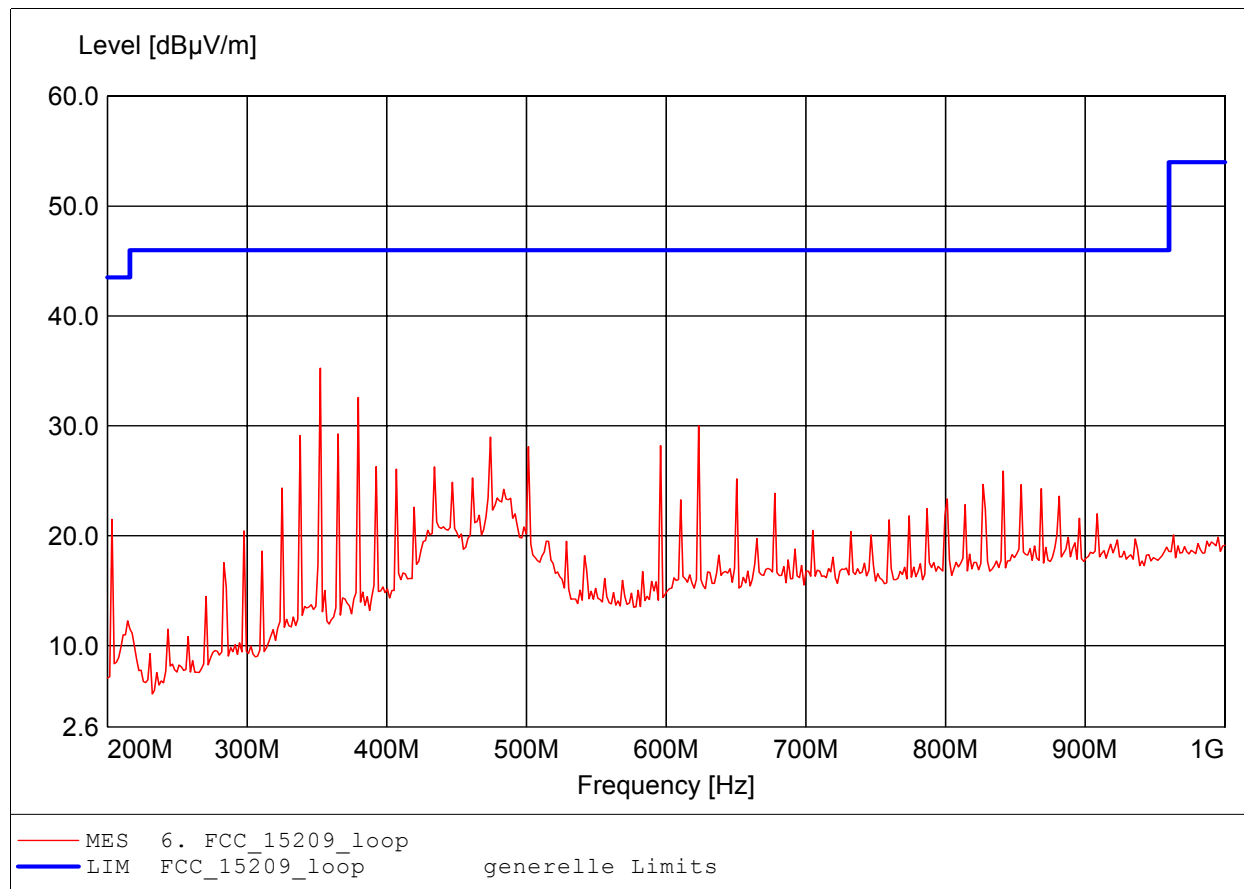
Approval Holder: HACH LANGE GmbH / G0M-1106-1188
EUT: Handheld RFID Tag Read/Writer
Model: LOC100
Operator: Eurofins Product Service GmbH / Mr. Handrik
Test Conditions: Tnom: 22°C / Vnom: 2.4 V DC (battery)
Test Specification: according to §15.209, peak detector
Comment 1: Dist.: 3m, Ant.: HK 116
Comment 2: Freq: 178.537MHz, Emax: 33.14dBµV/m, RBW: 100kHz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

Approval Holder: HACH LANGE GmbH / GOM-1106-1188
EUT: Handheld RFID Tag Read/Writer
Model: LOC100
Operator: Eurofins Product Service GmbH / Mr. Handrik
Test Conditions: Tnom: 22°C / Vnom: 2.4 V DC (battery)
Test Specification: according to §15.209, peak detector
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Comment 2: Freq: 352.305MHz, Emax: 35.25dBµV/m, RBW: 100kHz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

Approval Holder: HACH LANGE GmbH / GOM-1106-1188
EUT: Handheld RFID Tag Read/Writer
Model: LOC100
Operator: Eurofins Product Service GmbH / Mr. Handrik
Test Conditions: Tnom: 22°C / Vnom: 2.4 V DC (battery)
Test Specification: according to §15.209, peak detector
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Comment 2: Freq: 352.305MHz, Emax: 30.08dBµV/m, RBW: 100kHz

