FCC ID: XUY0YX0MU02037

EMI – TEST REPORT

- FCC Part 15.209 / 15.225 -

DAkkS Deutsche Akkreditierungsstelle D-PL-12030-01-01

Test Report No. : T36735-01-01KG	16. April 2013 Date of issue

Type / Model Name : MU02037

Product Description : USB Card reader

Applicant : Y SOFT Corporation

Address : Czech Technology Park, Podnikatelska 2902/4

612 00 BRNO, Czech Republic

Manufacturer : Y SOFT Corporation

Address : Czech Technology Park, Podnikatelska 2902/4

612 00 BRNO, Czech Republic

Licence holder : Y SOFT Corporation

Address : Czech Technology Park, Podnikatelska 2902/4

612 00 BRNO, Czech Republic

Test Result according to the standards listed in clause 1 test standards:	**POSITIVE**

ilac-MRA

The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test results without the written permission of the test laboratory.

mikes-testingpartners gmbh
Ohmstrasse 2-4 · 94342 Strasskirchen
Tel.:+49(0)9424-94810 · Fax:+49(0)9424-9481240

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1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules and Regulations Part 15 Subpart A - General (September, 2012)

Part 15, Subpart A, Section 15.31	Measurement standards
Part 15, Subpart A, Section 15.33	Frequency range of radiated measurements
Part 15, Subpart A, Section 15.35	Measurement detector functions and bandwidths

FCC Rules and Regulations Part 15 Subpart C- Intentional Radiators (September, 2012)

Part 15, Subpart C, Section 15.225	Operation within the band 13.110-14.010 MHz
Part 15, Subpart C, Section 15.207(c)	Conducted limits
Part 15, Subpart C, Section 15.209(a)	Radiated emissions, general requirements

ANSI C63.4: 2009	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
CISPR 22: 2005 EN 55022: 2006	Information technology equipment

2 SUMMARY

GENERAL REMARKS:

The EuT is working at frequencies of 125 kHz and 13.56 MHz.

FINAL ASSESSMENT:

The equipment under test **fulfills** the EMI requirements cited in clause 1 test standards.

Date of receipt of test sample : acc. to storage records

Testing commenced on : 22. February 2013

Testing concluded on : 28. March 2013

Checked by:

Thomas Weise
I confirm the correctness and integrity of this document
2013.04.16 11:08:21 +02'00'

Thomas Weise
Dipl.-Ing.(FH)
Laboratory Manager

Tested by:

Klaus Gegenfurtner
I`m the author of this document
2013.04.16 11:06:51 +02'00'

Klaus Gegenfurtner
Dipl.-Ing. (FH)

3 EQUIPMENT UNDER TEST

3.1 Photo documentation of the EuT

Side view

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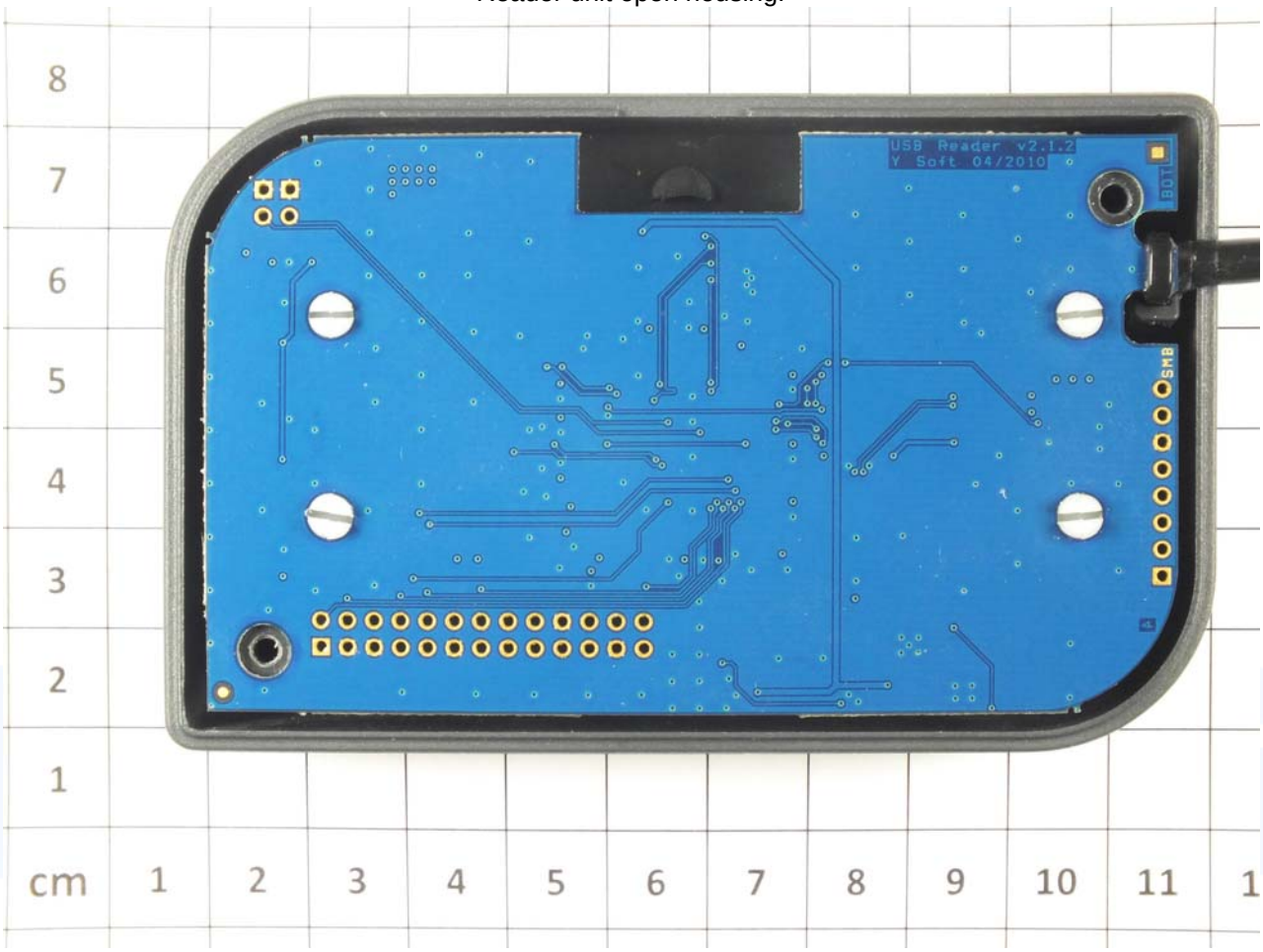
Front view

Rear view

FCC ID: XUY0YX0MU02037

Reader unit open housing:



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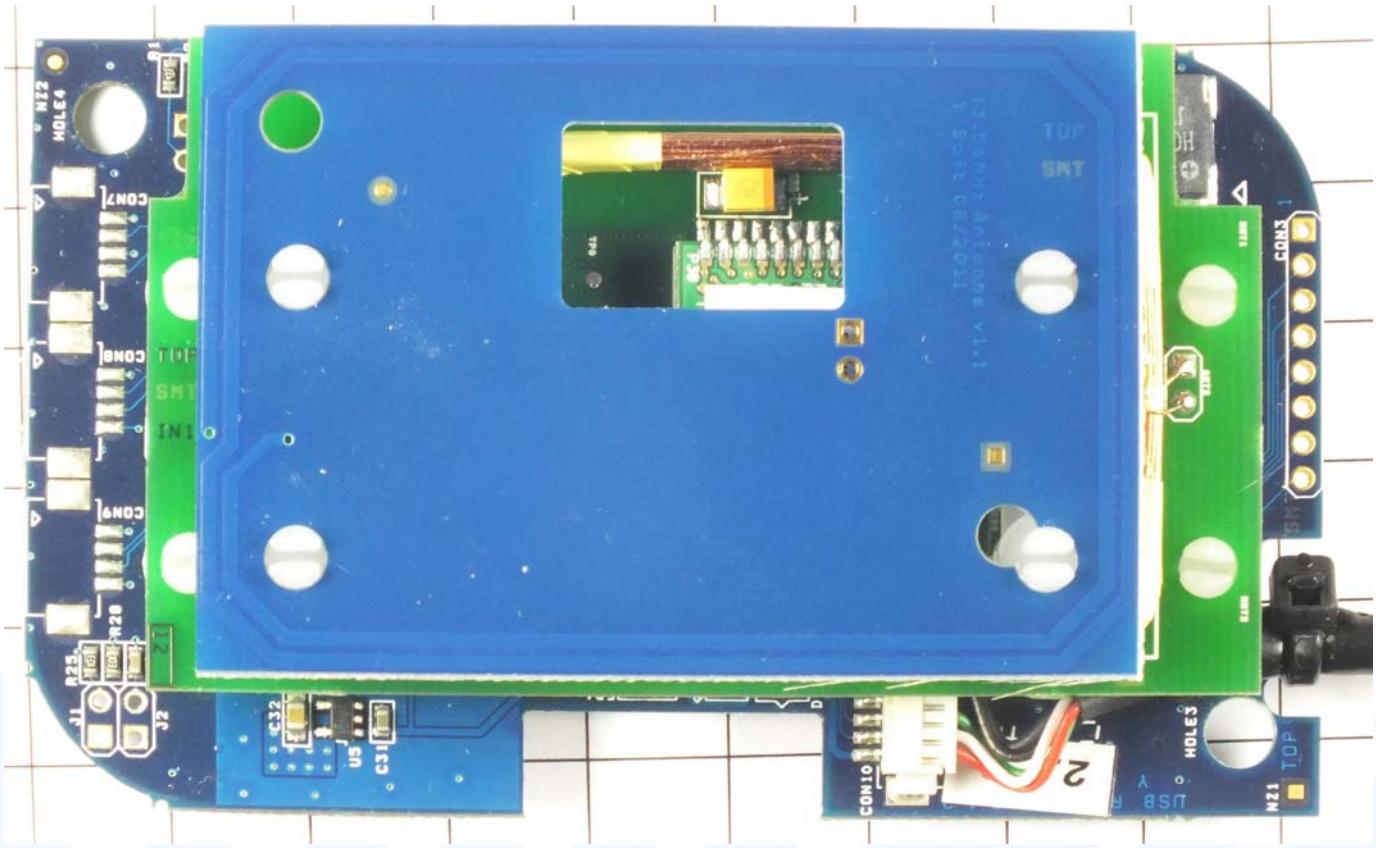

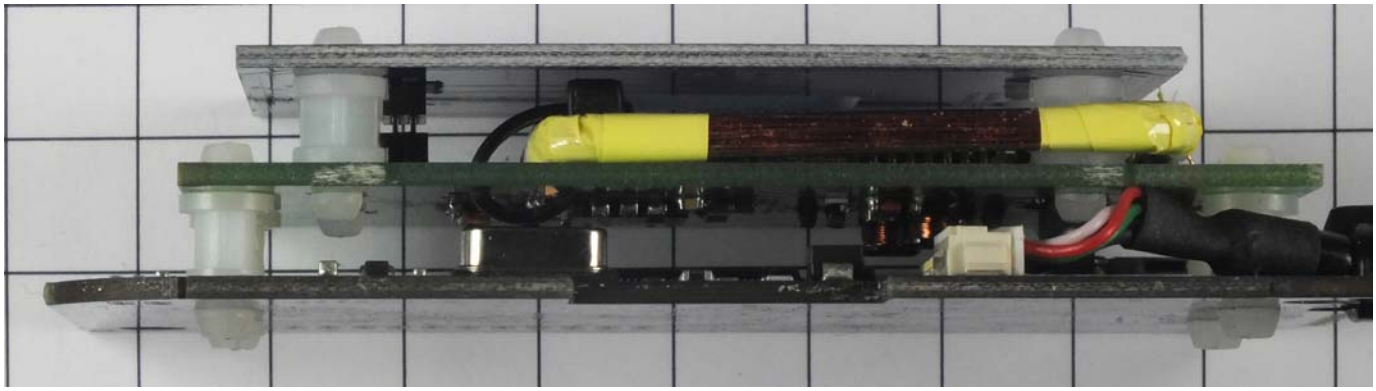

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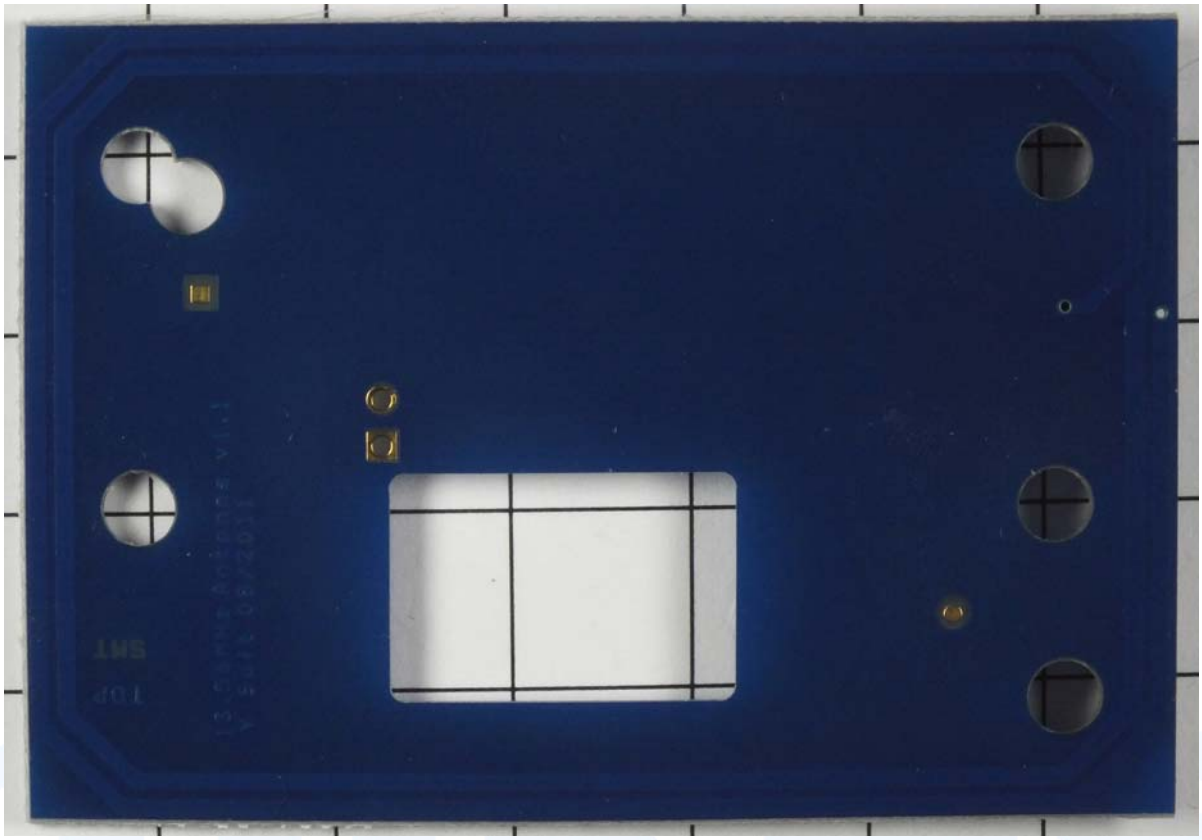

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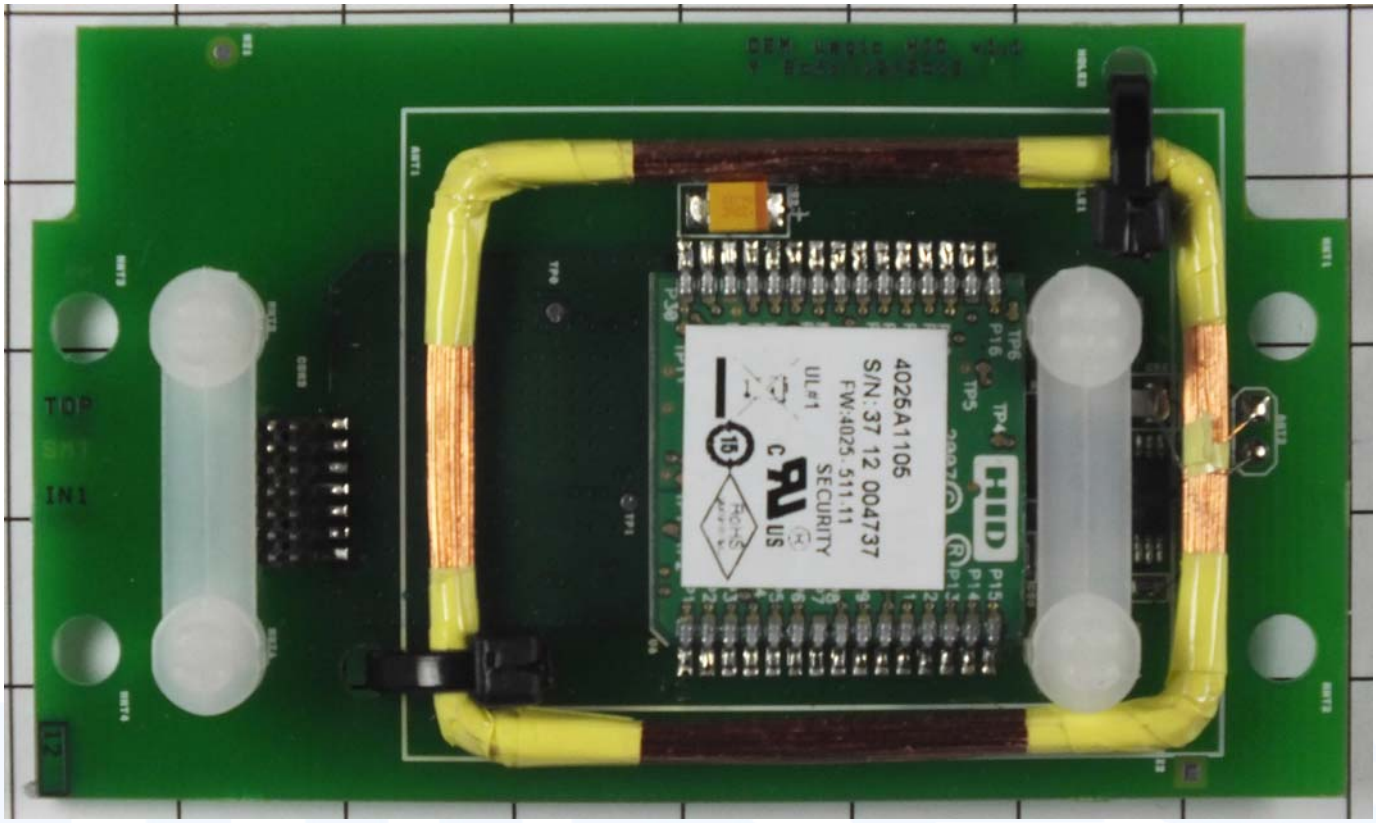

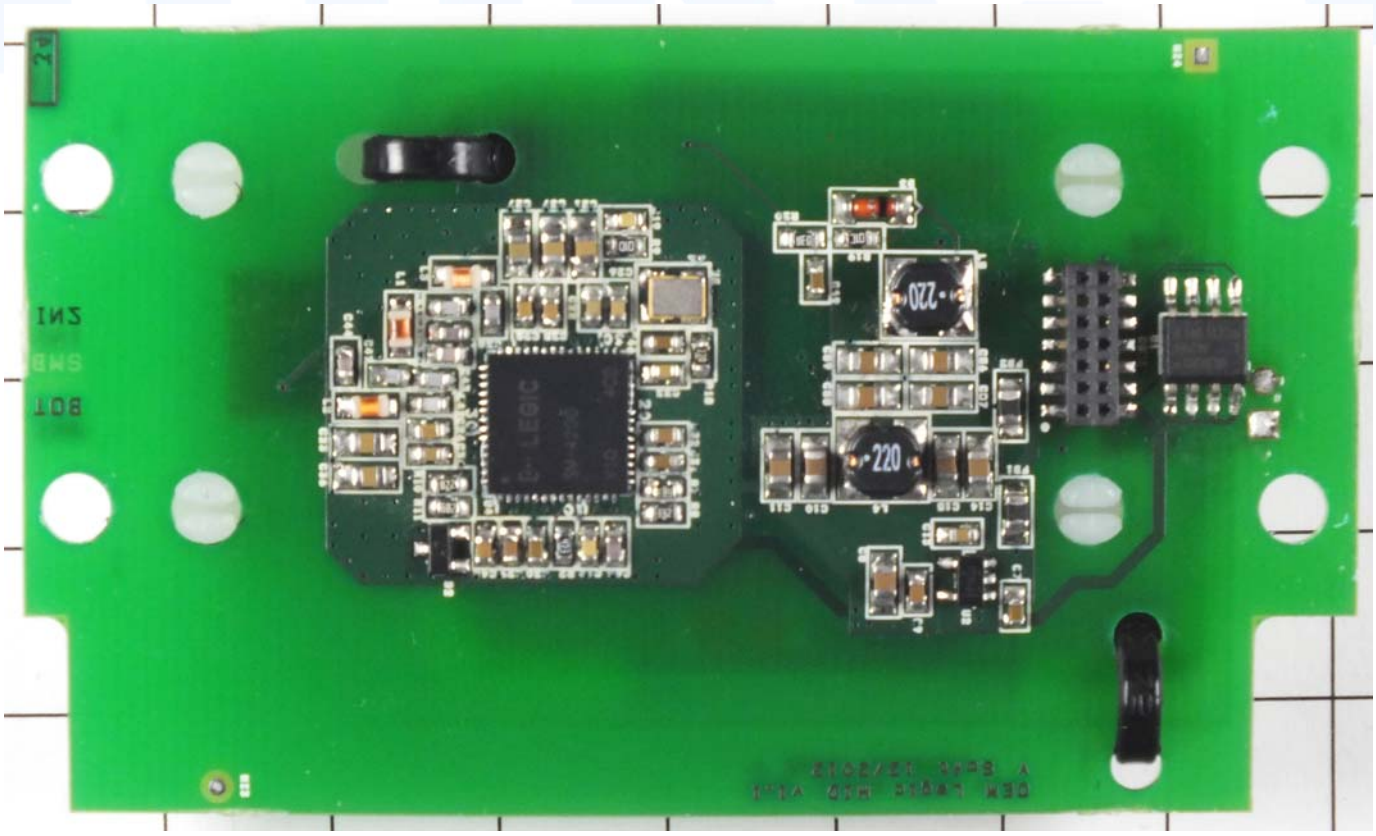

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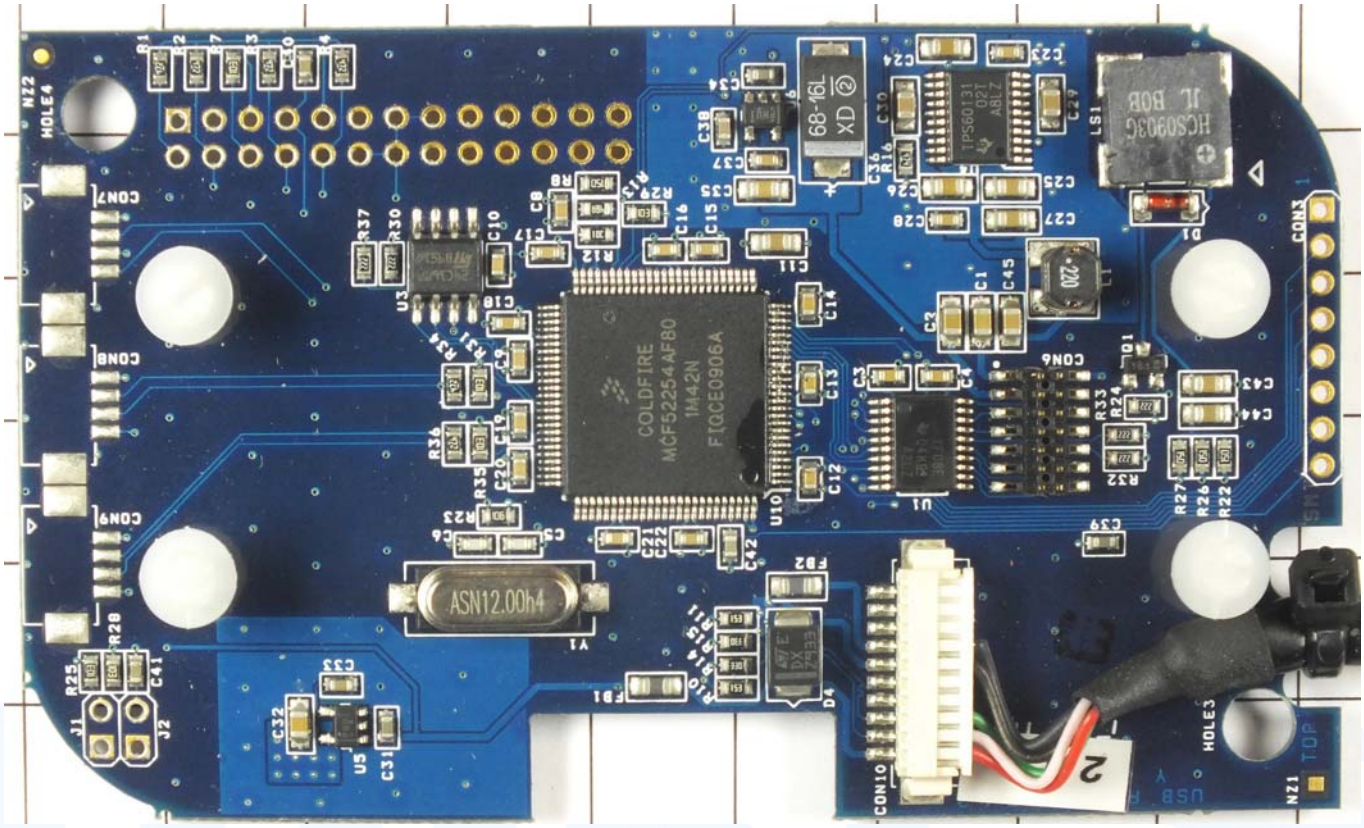

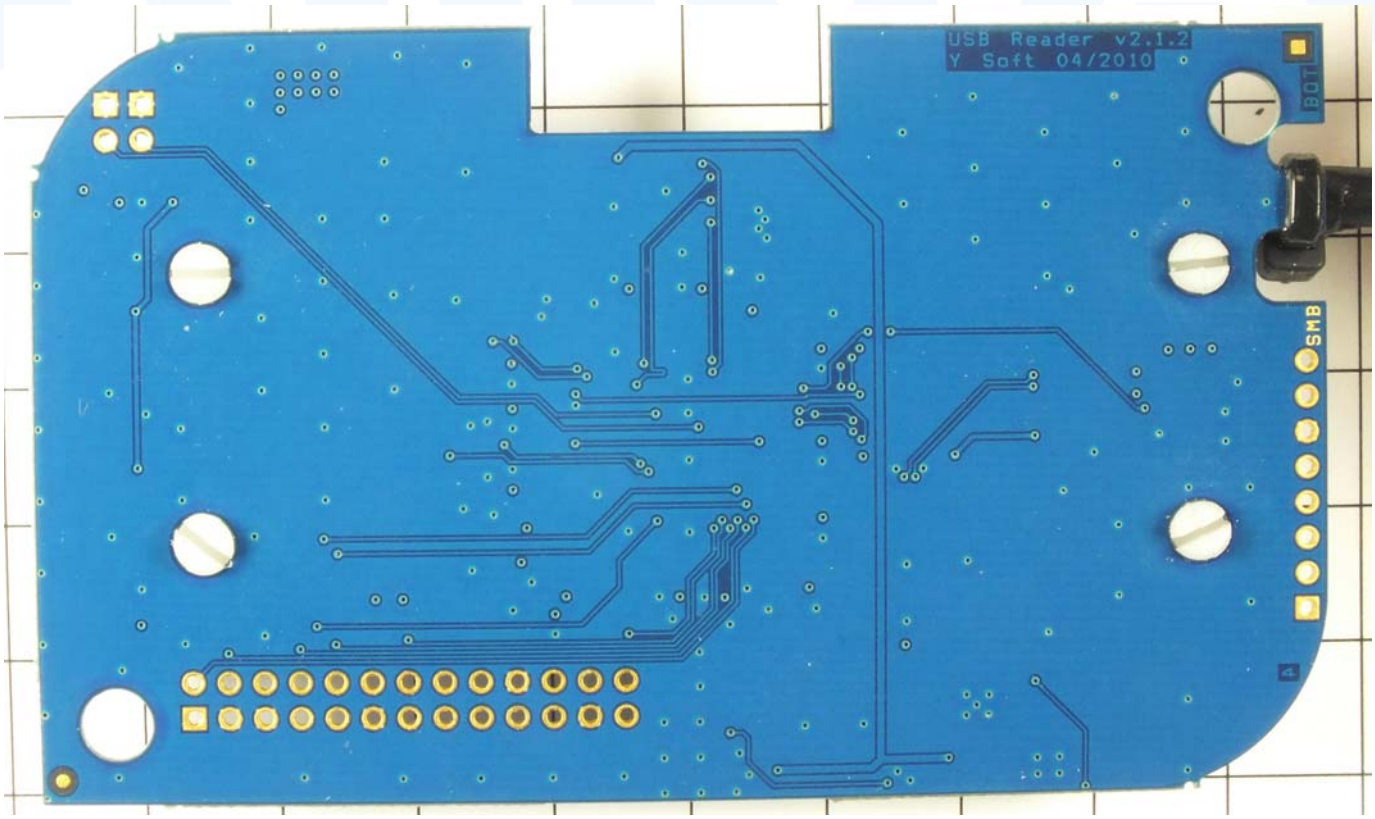

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Peripheral Device for Conducted emission test

FCC ID: XUY0YX0MU02037

3.2 Power supply system utilised

Power supply voltage : Reader 5V DC
USB-Hub 115V AC / 60Hz

3.3 Short description of the Equipment under Test (EuT)

The EuT is a card reader for reading of authentication cards.

Number of tested samples: 1
Serial number: see Photo documentation of the EuT under Point 3 / Equipment Under Test

EuT operation mode:

The equipment under test was operated during the measurement under the following conditions:

- Tx mode at 13.56 MHz

- Tx mode at 125 kHz

EuT configuration:

(The CDF filled by the applicant can be viewed at the test laboratory.)

The following peripheral devices and interface cables were connected during the measurements:

- Laptop Mikes Intern Model : 02-01/01-07-007
- USB-Hub Model : Trust
- Model :
- Model :
- Model :
- Model :

- customer specific cables

4 TEST ENVIRONMENT

4.1 Address of the test laboratory

mikes-testingpartners gmbh
Ohmstrasse 2-4
94342 Strasskirchen
Germany

4.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	86-106 kPa

4.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16-4-2 /11.2003 „Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements“ and is documented in the quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

4.4 Measurement Protocol for FCC, VCCI and AUSTEL

4.4.1 GENERAL INFORMATION

4.4.1.1 Test Methodology

Conducted and radiated disturbance testing is performed according to the procedures in International Special Committee on Radio Interference (CISPR) Publication 22, European Standard EN 55022 as shown under section 1 of this report.

In compliance with 47 CFR Part 15 Subpart A Section 15.38 testing for FCC compliance may be done following the ANSI C63.4-2009 procedures and using the CISPR 22 Limits.

4.4.1.2 Justification

The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral using the appropriate impedance characteristic or left unterminated. Where appropriate, cables are manually manipulated with respect to each other thus obtaining maximum disturbances from the unit.

4.4.2 DETAILS OF TEST PROCEDURES

General Standard Information

The test methods used comply with CISPR Publication 22, EN 55022 – " Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement" and with ANSI C63.4-2009 – "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz."

5 TEST CONDITIONS AND RESULTS

5.1 Conducted emissions

For test instruments and accessories used see section 6 Part **A 4**.

5.1.1 Description of the test location

Test location: Shielded room S2

5.1.2 Photo documentation of the test set-up

5.1.3 Applicable standard

According to FCC Part 15, Section 15.207(a):
Except as shown in paragraphs (b) and (c) of this Section, for an intentional radiator that is designed to be connected tot he 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 given limits.

5.1.4 Description of Measurement

The measurements are performed following the procedures set out in ANSI C63.4 described under item 4.4.3. If the minimum limit margin appears of less than 20 dB with a peak mode measurement, the emissions are remeasured using a tuned receiver with quasi-peak and average detection and recorded on the data sheets.

5.1.5 Test result

Frequency range: 0.15 MHz – 30 MHz

Min. limit margin 1.0 dB at 13.56 MHz

Limit according to FCC Part 15, Section 15.207(a):

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

* Decreases with the logarithm of the frequency

The requirements are **FULFILLED.**

Remarks: To show the compliance with the FCC requirements the reader was connected to a standard USB-Hub of company Trust.

For detailed test result please refer to following test protocol

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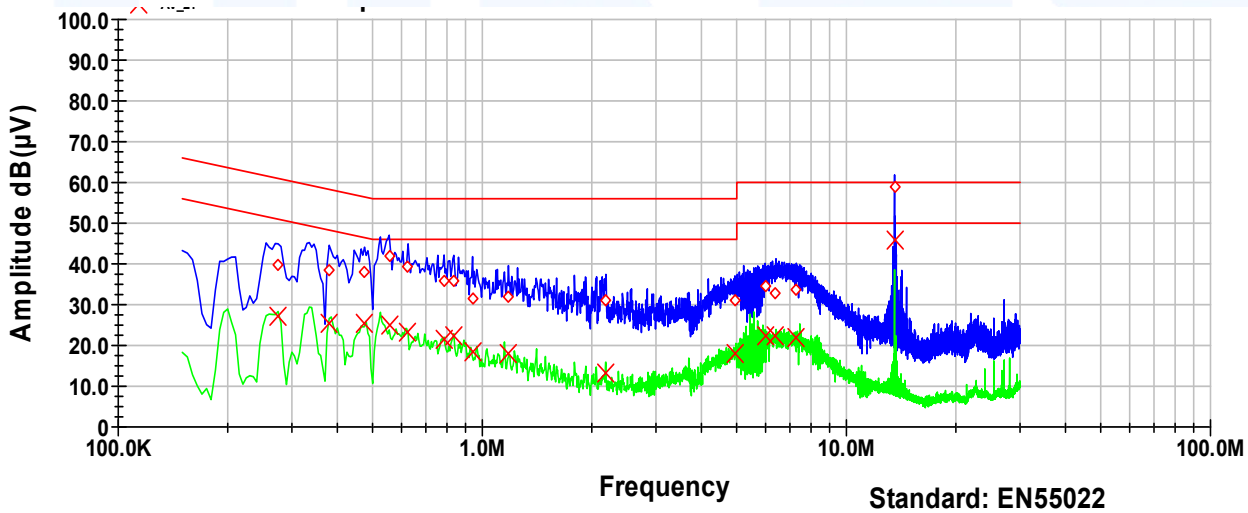
5.1.6 Test protocol

Test point N
Operation mode: Tx mode at 13.56 MHz
Remarks: 115V AC / 60Hz

Result: Passed

Frequency	QP Level	QP Margin	QP Limit	AV Level	AV Margin	AV Limit
MHz	dB(µV)	dB	dB	dB(µV)	dB	dB
0.275	39.9	-21.1	61.0	27.1	-23.9	51.0
0.38	38.3	-20.0	58.3	25.5	-22.8	48.3
0.475	37.9	-18.5	56.4	25.2	-21.2	46.4
0.555	42.1	-13.9	56.0	24.8	-21.2	46.0
0.625	39.5	-16.5	56.0	23.3	-22.7	46.0
0.785	35.9	-20.1	56.0	21.4	-24.6	46.0
0.835	36.0	-20.0	56.0	22.3	-23.8	46.0
0.94	31.6	-24.4	56.0	18.4	-27.6	46.0
1.18	32.1	-23.9	56.0	17.9	-28.1	46.0
2.185	30.9	-25.1	56.0	13.4	-32.6	46.0
4.94	31.0	-25.0	56.0	17.9	-28.1	46.0
5.98	34.6	-25.4	60.0	22.5	-27.5	50.0
6.405	33.0	-27.0	60.0	22.6	-27.4	50.0
7.285	33.7	-26.3	60.0	21.7	-28.3	50.0
13.555	59.0	-1.0	60.0	45.8	-4.2	50.0



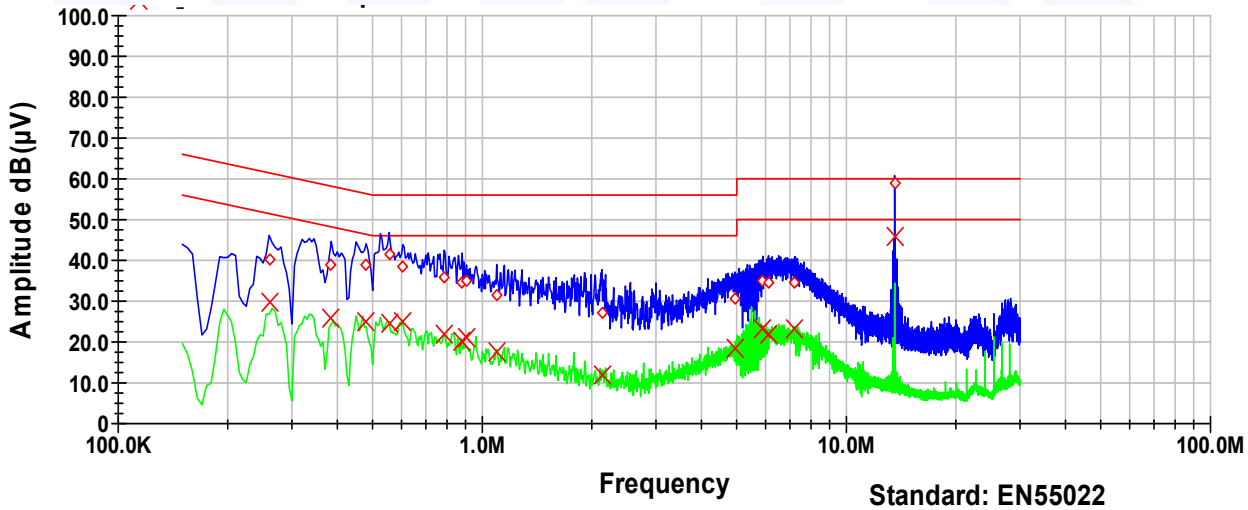
Standard: EN55022
File Number: T36735

FCC ID: XUY0YX0MU02037

Test point: L1
Operation mode: Tx mode at 13.56 MHz
Remarks: 115 V / 60Hz

Result: Passed

Frequency	QP Level	QP Margin	QP Limit	AV Level	AV Margin	AV Limit
MHz	dB(µV)	dB	dB	dB(µV)	dB	dB
0.26	40.3	-21.1	61.4	29.6	-21.8	51.4
0.385	39.0	-19.2	58.2	25.9	-22.2	48.2
0.48	38.8	-17.5	56.3	25.0	-21.3	46.3
0.555	41.5	-14.5	56.0	24.7	-21.3	46.0
0.605	38.3	-17.7	56.0	24.8	-21.2	46.0
0.785	35.7	-20.3	56.0	21.7	-24.3	46.0
0.88	34.6	-21.4	56.0	20.2	-25.8	46.0
0.905	34.8	-21.2	56.0	20.9	-25.1	46.0
1.095	31.6	-24.4	56.0	17.7	-28.3	46.0
2.13	27.2	-28.8	56.0	11.8	-34.2	46.0
4.935	30.5	-25.5	56.0	18.4	-27.6	46.0
5.9	35.1	-24.9	60.0	23.3	-26.7	50.0
6.11	34.7	-25.3	60.0	22.0	-28.0	50.0
7.225	34.8	-25.3	60.0	23.4	-26.6	50.0
13.56	59.0	-1.0	60.0	45.7	-4.3	50.0



Standard: EN55022
File Number: T36735

5.2 Field strength of the fundamental wave

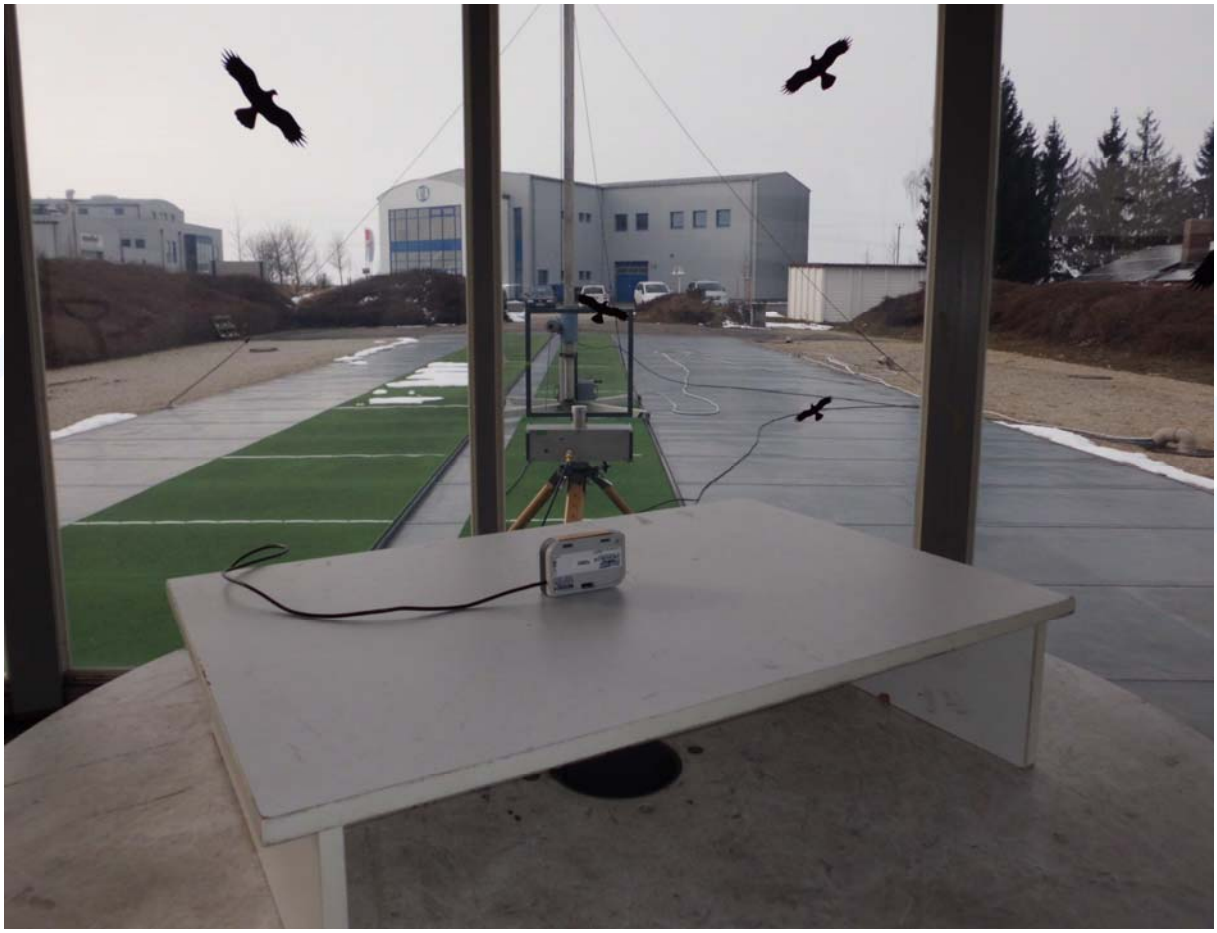
For test instruments and accessories used see section 6 Part **CPR 1**.

5.2.1 Description of the test location

Test location: OATS1

Test distance: 3 metres

5.2.2 Photo documentation of the test set-up



5.2.3 Description of Measurement

The magnetic field strength from the EuT will be measured on an open area test site in the frequency range of 9 kHz to 30 MHz using a tuned receiver and a shielded loop antenna. The set up of the Equipment under test will be in accordance to ANSI C63.4. The antenna was positioned 3, 10 or 30 meters horizontally from the EuT. Measurements have been made in all three orthogonal axes and the shielded loop antenna was rotated to locate the maximum of the emissions. In the case where larger measuring distances are required the results will extrapolated based on the values measured on the closer distances according to Section 15.31 (f) (2) [2]. The final measurement will be performed with an EMI Receiver set to Quasi Peak detector except for the frequency bands 9 kHz to 90 kHz and 110 to 490 kHz where an average detector will be used according to Section 15.209 (d) [2].

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The final level, expressed in dBµV/m, is arrived at by taking the reading from the EMI receiver (Level dBµV) and adding the antenna correction factor and cable loss factor (Factor dB) to it. This result then has to be compared with the relevant FCC limit.
The resolution bandwidth during the measurement is as follows:
9 kHz – 150 kHz: ResBW: 200 Hz
150 kHz – 30 MHz: ResBW: 9 kHz

Example:

Frequency (MHz)	Level (dBµV)	+	Factor (dB)	=	Level (dBµV/m)	Limit (dBµV/m)	=	Delta (dB)
1.705	5	+	20	=	25	30	=	5

5.2.4 Test result

125 kHz Transmitter:

Measured value at 3m

Frequency [MHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
0.125	59.2	36.0	52.0	20.0	79.2	56.0	72.0	105.7	-33.7

Calculated value at 300m:

Frequency [MHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
0.125	-20.8	-44.0	-28.0	20.0	-0.8	-24.0	-8.0	25.7	-33.7

Limit according to FCC Part 15 Subpart 15.209(a)

Frequency (MHz)	Field strength of spurious emissions		Measurement distance (meters)
	(µV/m)	dB (µV/m)	
0.009-0.490	2400/F(kHz)	--	300
0.490-1.705	24000/F (kHz)	--	30
1.705-30.0	30	29.5	30

Frequency (MHz)	Field strength of fundamental wave		Measurement distance (meters)
	(µV/m)	dB (µV/m)	
0.125	**19.2**	**25.7**	**300**

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13.56MHz Transmitter:

Measured value at 3m

Frequency [MHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
13.56	50.5	40.0	46.9	20.0	70.5	60.0	66.9	124.0	-57.1

Calculated value at 30m:

Frequency [MHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
13.56	10.5	0.0	6.9	20.0	30.5	20.0	26.9	84.0	-57.1

Limit according to FCC Part 15 Subpart 15.225(a)

Frequency (MHz)	Field strength of fundamental wave		Measurement distance (meters)
	(µV/m)	dB (µV/m)	
13.553-13.567	**15848**	**84**	**30**

The requirements are **FULFILLED.**

Remarks: _____

5.3 Spurious emissions (Magnectic field) 9 kHz – 30 MHz

For test instruments and accessories used see section 6 Part **SER 1**.

5.3.1 Description of the test location

Test location: OATS1

Test distance: 3 metres

5.3.2 Photo documentation of the test set-up

5.3.3 Description of Measurement

The spurious emissions from the EuT will be measured on an open area test site in the frequency range of 9 kHz to 30 MHz using a tuned receiver and a shielded loop antenna. The antenna was positioned 3, 10 or 30 meters horizontally from the EuT. Measurements have been made in all three orthogonal axes and the shielded loop antenna was rotated to locate the maximum of the emissions. In the case where larger measuring distances are required the results will extrapolated based on the values measured on the closer distances according to Section 15.31 (f) (2) [2]. The final measurement will be performed with an EMI Receiver set to Quasi Peak detector except for the frequency bands 9 kHz to 90 kHz and 110 to 490 kHz where an average detector will be used according to Section 15.209 (d) [2].

The final level, expressed in dBμV/m, is arrived at by taking the reading from the EMI receiver (Level dBμV) and adding the antenna correction factor and cable loss factor (Factor dB) to it. This result then has to be compared with the relevant FCC limit.
The resolution bandwidth during the measurement is as follows:
9 kHz – 150 kHz: ResBW: 200 Hz
150 kHz – 30 MHz: ResBW: 9 kHz

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Example:

Frequency (MHz)	Level (dBµV)	+	Factor (dB)	=	Level (dBµV/m)	Limit (dBµV/m)	=	Delta (dB)
1.705	5	+	20	=	25	30	=	5

5.3.4 Test result

125kHz Transmitter:

Measured value at 3m

Frequency [MHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
0.250	34.0	22.6	26.4	20.0	54.0	42.6	46.4	99.6	-53.2
0.375	32.2	15.2	25.0	20.0	52.2	35.2	45.0	96.1	-51.1

Calculated value at 300m:

Frequency [MHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
0.250	-46.0	-57.4	-53.6	20.0	-26.0	-37.4	-33.6	19.6	-53.2
0.375	-47.8	-64.8	-55.0	20.0	-27.8	-44.8	-35.0	16.1	-51.1

13.56 MHz Transmitter:

Measured value at 3m

Frequency [MHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
27.12	10.3	-1.7	3.2	20.0	30.3	18.3	23.2	69.5	-46.3

Calculated value at 30m:

Frequency [MHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
27.12	-29.7	-41.7	-36.8	20.0	-9.7	-21.7	-16.8	29.5	-46.3

Limit according to FCC Part 15 Subpart 15.209(a)

Frequency (MHz)	Field strength of spurious emissions		Measurement distance (meters)
	(µV/m)	dB (µV/m)	
0.009-0.490	2400/F(kHz)	--	300
0.490-1.705	24000/F (kHz)	--	30
1.705-30.0	30	29.5	30

The requirements are **FULFILLED.**

Remarks: Measurement has been performed up to the 10th harmonics of the fundamental frequency (125 kHz) designed to be emitted by the intentional radiator (1.25 MHz).

5.4 Radiated emissions (electric field) 30 MHz – 1 GHz

For test instruments and accessories used see section 6 Part **SER 2**.

5.4.1 Description of the test location

Test location: OATS1

Test distance: 3 metres

5.4.2 Photo documentation of the test set-up

5.4.3 Description of Measurement

Spurious emissions from the EuT are measured in the frequency range of 30 MHz to 1000 MHz using a tuned receiver and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasi-peak detection. Table top equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimetres above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. The set up of the Equipment under test will be in accordance to ANSI C63.4.
The Interface cables that are closer than 40 centimetres to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimetres from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna was positioned 3, 10 or 30 meters horizontally from the EuT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarization`s and the EuT are rotated 360 degrees.

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The final level, expressed in dBµV/m, is arrived by taking the reading from the EMI receiver (Level dBµV) and adding the correction factors and cable loss factor (Factor dB) to it. This is done automatically in the EMI receiver, where the correction factors are stored. This result then has the FCC or CISPR limit subtracted from it to provide the Delta which gives the tabular data as shown in the data sheets at page.

The resolution bandwidth during the measurement is as follows:
30 MHz – 1000 MHz: ResBW: 120 kHz

Example:

Frequency (MHz)	Level (dBµV)	+	Factor (dB)	=	Level (dBµV/m)	Limit (dBµV/m)	=	Delta (dB)
719	75	+	32.6	=	107.6	110	=	-2.4

5.4.4 Test result

Frequency [MHz]	L: QP [dBµV]	Correct. [dB]	L: QP [dBµV/m]	Limit [dBµV/m]	Delta [dB]
40.68	19.5	14.2	33.7	40.0	-6.3
54.24	10.5	14.9	25.4	40.0	-14.6
67.80	14.0	13.7	27.7	40.0	-12.3
81.36	12.7	10.5	23.2	40.0	-16.8
108.48	11.8	10.8	22.6	43.5	-20.9
122.04	7.0	12.5	19.5	43.5	-24.0
135.60	3.0	13.4	16.4	43.5	-27.1

Limit according to FCC Part 15 Subpart 15.209(a)

Frequency (MHz)	Field strength of spurious emissions		Measurement distance (meters)
	(µV/m)	dB (µV/m)	
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

The requirements are **FULFILLED.**

Remarks: Measurement has been performed up to the 10th harmonics of the fundamental frequency designed to be emitted by the intentional radiator (135.6 MHz).

5.5 Frequency tolerance of the carrier

For test instruments and accessories used see section 6 Part **FE**.

5.5.1 Description of the test location

Test location: AREA4

5.5.2 Photo documentation of the test set-up

5.5.3 Test result

Test conditions		Test result		
		Frequency (MHz)		
T_{min} (-20)°C	V_{nom} (5.0)V	13.559900		
T (-10)°C	V_{nom} (5.0)V	13.559916		
T (0)°C	V_{nom} (5.0)V	13.559924		
T (10)°C	V_{nom} (5.0)V	13.559916		
T_{nom} (20)°C	V_{min} (4.25)V	13.559912		
	V_{nom} (5.0)V	13.559912		
	V_{max} (5.75)V	13.559912		
T (30)°C	V_{nom} (5.0)V	13.559908		
T (40)°C	V_{nom} (5.0)V	13.559908		
T_{max} (50)°C	V_{nom} (5.0)V	13.559926		
Maximum tolerance of carrier frequency (kHz)		-0.012 / +0.014		
Measurement uncertainty		± 10 Hz		

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Limit according to FCC Part 15 Subpart 15.225 €: ± 0.01 % of carrier frequency at 13.560 MHz = ± 1.356 kHz

The requirements are **FULFILLED.**

Remarks: _____

mikes

5.6 Emission Bandwidth

For test instruments and accessories used see section 6 Part **MB**.

5.6.1 Description of the test location

Test location: AREA4

5.6.2 Photo documentation of the test set-up

5.6.3 Description of Measurement

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio of -20 dB. The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or the first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical.
The resolution bandwidth of measuring instrument was set to a value as shown in the following table below according to ANSI C63.4.

Fundamental frequency	Minimum resolution bandwidth
9 kHz to 30 MHz	1kHz
30 to 1000 MHz	10 kHz
1000 MHz to 40 GHz	100 kHz

5.6.4 Test result

Channel Frequency [MHz]	20 dB Bandwidth [kHz]
0.125	4.04
13.56	5.06

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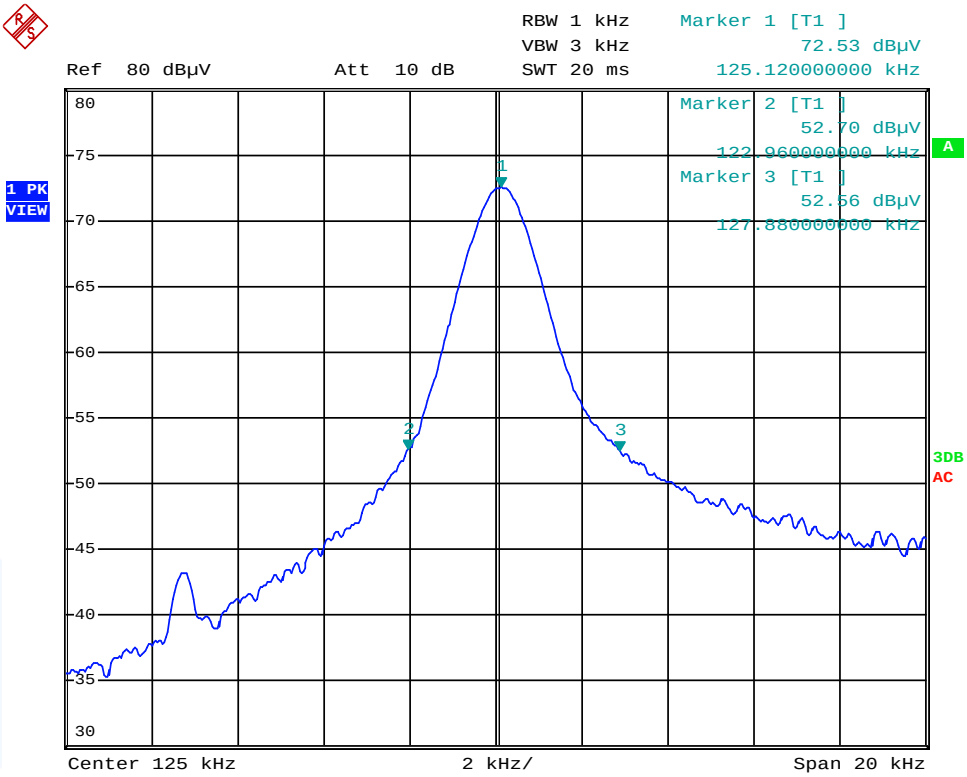
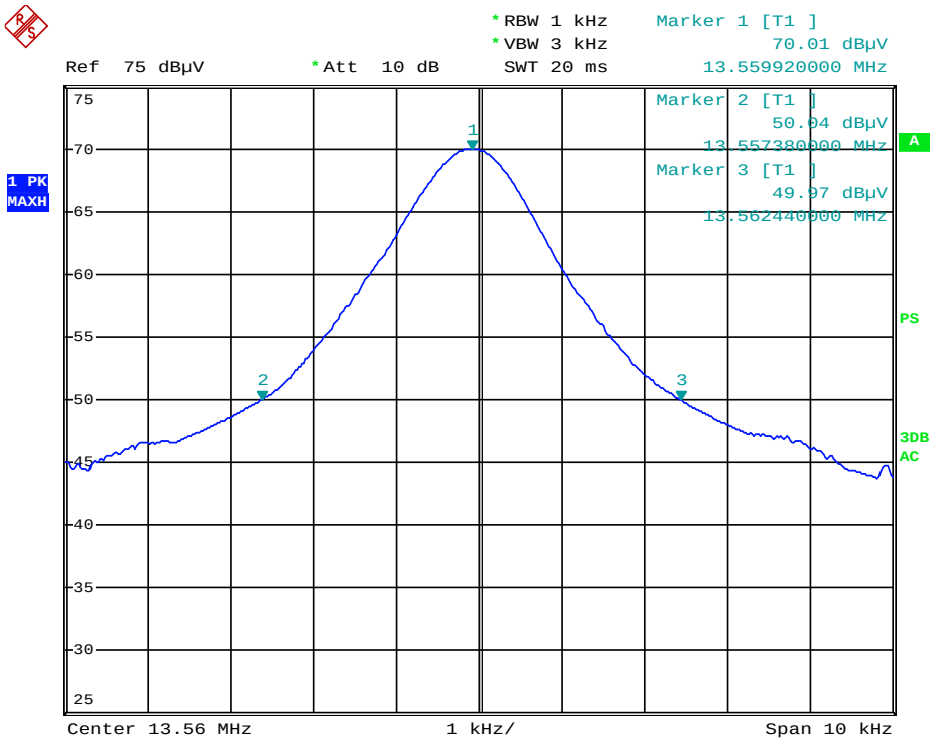
Remarks: For detailed test result please refer to following test protocol.

5.6.5 Test protocol





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5.7 Transmitter spectrum mask

For test instruments and accessories used see section 6 Part **MB**.

5.7.1 Description of the test location

Test location: AREA4

5.7.2 Test result

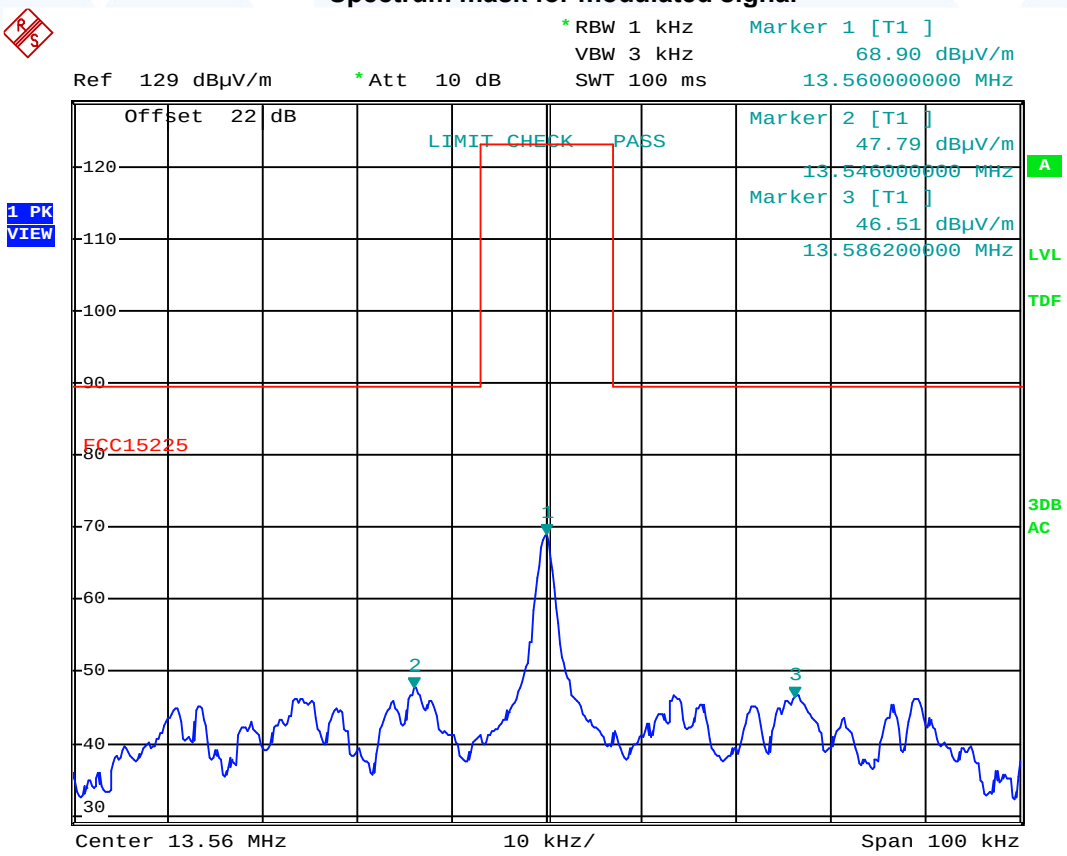
The absolute levels of RF power at any frequency shall not exceed the limits defined in FCC Part §15.225 a-d

The requirements are **FULFILLED.**

Remarks: _____

5.7.3 Test protocol

Spectrum mask for modulated signal



6 USED TEST EQUIPMENT AND ACCESSORIES

All test instruments used, in addition to the test accessories, are calibrated and verified regularly.

The calibration intervals and the calibration history will be given out on request.

Test ID	Model Type	Kind of Equipment	Manufacturer	Equipment No.
A 4	ESHS 30	EMI Test Receiver	Rohde & Schwarz München	02-02/03-05-002
	ESH 2 - Z 5	LISN	Rohde & Schwarz München	02-02/20-05-004
	N-4000-BNC	RF Cable	mikes-testingpartners gmbh	02-02/50-05-138
	N-1500-N	RF Cable	mikes-testingpartners gmbh	02-02/50-05-140
	ESH 3 - Z 2	Pulse Limiter	Rohde & Schwarz München	02-02/50-05-155
CPR 1	FMZB 1516	Magnetic Field Antenna	Schwarzbeck Mess-Elektron	01-02/24-01-018
	ESCI	EMI Test Receiver	Rohde & Schwarz München	02-02/03-05-004
	S10162-B	RF Cable 33 m	Huber + Suhner	02-02/50-05-031
	KK-EF393-21N-16	RF Cable 20 m	Huber + Suhner	02-02/50-05-033
	NW-2000-NB	RF Cable	Huber + Suhner	02-02/50-05-113
FE	ESCI	EMI Test Receiver	Rohde & Schwarz München	02-02/03-05-004
	HFRAE 5161	Passive Loop Antenna	Schwarzbeck Mess-Elektron	02-02/24-11-004
	WK-340/40	Climatic Chamber	Weiss Umwelttechnik GmbH	02-02/45-05-001
	6543A	Power Supply	HP Hewelett-Packard	02-02/50-05-157
MB	ESCI	EMI Test Receiver	Rohde & Schwarz München	02-02/03-05-004
	HFRAE 5161	Passive Loop Antenna	Schwarzbeck Mess-Elektron	02-02/24-11-004
	WK-340/40	Climatic Chamber	Weiss Umwelttechnik GmbH	02-02/45-05-001
	6543A	Power Supply	HP Hewelett-Packard	02-02/50-05-157
SER 1	FMZB 1516	Magnetic Field Antenna	Schwarzbeck Mess-Elektron	01-02/24-01-018
	ESCI	EMI Test Receiver	Rohde & Schwarz München	02-02/03-05-004
	S10162-B	RF Cable 33 m	Huber + Suhner	02-02/50-05-031
	KK-EF393-21N-16	RF Cable 20 m	Huber + Suhner	02-02/50-05-033
	NW-2000-NB	RF Cable	Huber + Suhner	02-02/50-05-113
SER 2	ESVS 30	EMI Test Receiver	Rohde & Schwarz München	02-02/03-05-006
	VULB 9168	Trilog Broadband Antenn	Schwarzbeck Mess-Elektron	02-02/24-05-005
	S10162-B	RF Cable 33 m	Huber + Suhner	02-02/50-05-031
	KK-EF393-21N-16	RF Cable 20 m	Huber + Suhner	02-02/50-05-033
	NW-2000-NB	RF Cable	Huber + Suhner	02-02/50-05-113

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Equipment No.	Next Calib.	Last Calib.	Next Verif.	Last Verif.
A4				
02-02/03-05-002	11/07/2013	11/07/2012		
02-02/20-05-004	12/05/2013	12/05/2012	23/07/2013	23/01/2013
02-02/50-05-138				
02-02/50-05-140				
02-02/50-05-155			02/04/2013	02/10/2012
CPR 1				
01-02/24-01-018			16/03/2013	16/03/2012
02-02/03-05-005	10/10/2013	10/10/2012		
02-02/50-05-031				
02-02/50-05-033				
02-02/50-05-113				
FE				
02-02/03-05-005	10/10/2013	10/10/2012		
02-02/24-05-012				
02-02/45-05-001	31/05/2013	31/05/2012	19/08/2013	19/02/2013
02-02/50-05-157				
MB				
02-02/03-05-005	10/10/2013	10/10/2012		
02-02/24-05-012				
02-02/45-05-001	31/05/2013	31/05/2012	19/08/2013	19/02/2013
02-02/50-05-157				
SER 1				
01-02/24-01-018			16/03/2013	16/03/2012
02-02/03-05-005	10/10/2013	10/10/2012		
02-02/50-05-031				
02-02/50-05-033				
02-02/50-05-113				
SER 2				
02-02/03-05-006	26/06/2013	26/06/2012		
02-02/24-05-005	16/03/2013	16/03/2012	08/04/2013	08/10/2012
02-02/50-05-031				
02-02/50-05-033				
02-02/50-05-113				