

# Gantner Electronic TEST REPORT

**SCOPE OF WORK**

RADIO TESTING FCC – GAT ECO.SIDE LOCK 7010 NW F/ISO

**REPORT NUMBER**

2231426KAU-014b

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**DOCUMENT CONTROL NUMBER**

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**MODEL:** GAT ECO.Side Lock 7010  
**TYPE:** NW F/ISO  
**DESCRIPTION:** Electronic battery lock for ISO 14443 (MIFARE®) and 15693 data carrier and wireless interface (Bluetooth)  
**SERIAL NO:** 1804000003  
1804000001 (Modified lock - Radiated emission 30 MHz- 1 GHz)

All measurement results refer to the equipment which was tested

**MANUFACTURER:** Gantner Electronic GmbH  
**CUSTOMER NAME:** Gantner Electronic GmbH  
**ADDRESS (CUSTOMER):** Montafonerstrasse 8  
AT-6780 SCHRUNS  
AUSTRIA

**REPORT NO:** 2231426KAU-014b

**TEST RESULT:** The equipment doesn't comply to 47 CFR Part 15, Subpart C, Intentional radiators, section 15.225 / RSS-210, Issue 9 and RSS-GEN, Issue 4 (Referring to the operating modes specified in this report).

**TEST LABORATORY:** Intertek Deutschland GmbH  
Innovapark 20, 87600 Kaufbeuren  
Germany

**FCC DESIGNATION  
NUMBER:** DE0014

**FCC TEST FIRM  
REGISTRATION NUMBER.** 359260

**INDUSTRY CANADA  
REGISTRATION.** 8882A-1; 8882A-2


**TEST ENGINEER:** R. Dressler  
Technical Manager EMC/ Radio

**REVIEWER:** U. Gronert  
Senior Project Engineer







## Details about Accreditations/Acceptances


### EMC / Radio National

	<p>The Intertek Deutschland EMC-Lab is accredited by the Deutsche Akkreditierungsstelle GmbH (DAkKS)</p> <p>Registration Number (EMC general): <b>D-PL-12085-01-01</b></p> <p>Registration Number (EMC Med): <b>D-PL-12085-01-03</b></p>
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### International

	<p>The Intertek Deutschland EMC-Lab is accepted to participate in the IECEE (IEC Conformity assessment for Electrotechnical Equipment and Components) CB-Scheme</p> <p>CB Test Laboratory: <b>TL118</b></p>
	<p>The Intertek Deutschland EMC-Lab is listed at the Federal Communications Commission (FCC)</p> <p>Designation Number: <b>DE0014</b></p> <p>Test Firm Registration Number: <b>359260</b></p>
	<p>The <i>Bundesnetzagentur</i> recognizes Intertek Deutschland GmbH as Conformity Assessment Body in the sector electromagnetic compatibility (EMC).</p>
	<p>The Intertek Deutschland EMC-Lab is listed at Industry Canada</p> <p>No. <b>8882A-1</b> (OATS) and <b>8882A-2</b> (3 m alternative test site)</p>

### Automotive

 <p>Anerkennungsstelle</p> <p>Anerkannt unter <b>KBA-P 00046-03</b></p>	<p>The Intertek Deutschland EMC-Lab is recognized as technical service of the Kraftfahrt-Bundesamt (KBA)</p> <p>Registration Number: <b>KBA-P 00046-03</b></p>
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## SECTION 2

### MEASUREMENT AND TEST SPECIFICATION

47 CFR Part 15, Subpart C, Intentional radiators, section 15.225 /  
RSS-210, Issue 9 and RSS-GEN, Issue 4

Test methods in:

ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices

No additions, deviations or exclusions have been made from standards and accreditation.

The test results detailed in this report apply only to the GAT ECO.Side Lock 7010 NW F/ISO with the test setup described. Any modification such as a change, addition to or inclusion of another device into this product will require an additional evaluation.

The support equipment listed as part of the emission tests is required to properly exercise and test the device under test.

## SECTION 3

### GENERAL INFORMATION

Possible test case verdicts:

Test case does not apply to the test object: N/A (Not Applicable)

Test object does meet the requirement: P (Pass)

Test object does not meet the requirements: F (Fail)

Samples arrived: 2018-01-31

Testing: 2018-02-01 to 2018-02-21

Decimal separator: ☒ Point ☐ Comma

Environmental conditions during testing:

Temperature: 15 °C - 35 °C

Humidity: 20 % - 60 %

Atmospheric pressure: 900 mbar - 1000 mbar

If explicitly required by a basic standard the measured climatic conditions are documented in the corresponding test section.

Test sites:

Measurement Chamber	Type of chamber	IC Site filing #
ANECHOIC CHAMBER 1	Semi-anechoic 3 m	8882A-2

## SECTION 4

### SUMMARY OF TESTING

#### 4.1 General annotation

The tests were performed in the order of the right column in the “Test Results – Overview” table.

#### 4.2 Measurement uncertainty

For each test method, an uncertainty evaluation was carried out. The results of the evaluation can be provided upon request from Intertek Deutschland GmbH.

#### 4.3 Document History

REVISION	DATE	REPORT	CHANGES	AUTHOR
Initial release	2018-05-16	2231426KAU-014b	Initial issue	RDR

## SECTION 5

### TEST RESULTS – OVERVIEW

EMISSION	VERDICT	DATE	NO
Field strength (13.110 MHz – 14.010 MHz)	P	2018-02-15	2
Radiated emissions (< 30 MHz)	P	2018-02-15	1
Radiated emissions (30 MHz - 1 GHz)	P*	2018-04-10	5
Frequency Stability Test	P	2018-02-21	4
Occupied bandwidth test	P	2018-02-20	3

\*Pass with modification explained in section 8

As a wish of the manufacturer/customer the previously applied tests No. 1 up to No. 4 were not repeated after the modification. Professional judgement: the modification (the time between read attempts has been increased to 900ms) will not lead to worse test results of the tests No. 1 up to No. 4

#### Omission of tests:

Conducted emissions is not applicable, because the EUT is battery operated.



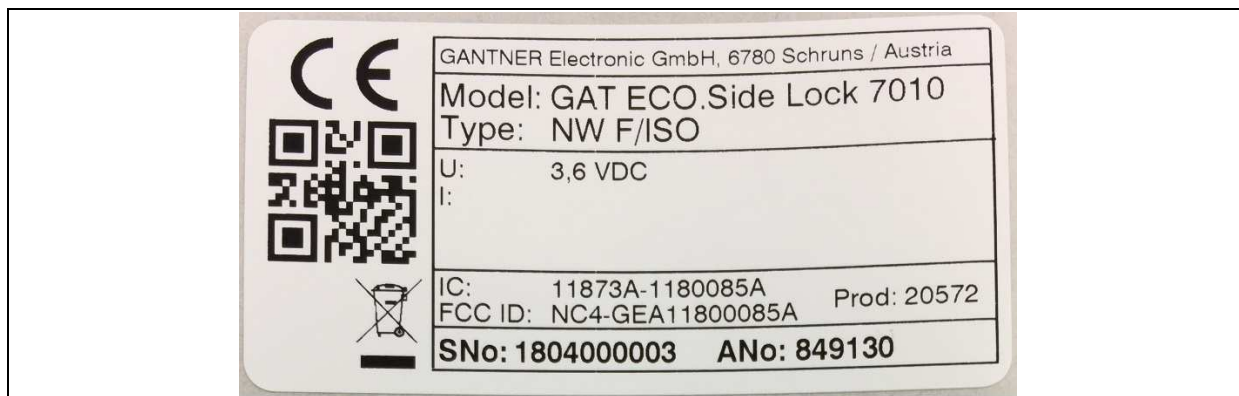
## SECTION 6

### INFORMATION ABOUT THE EUT

#### 6.1 Description of the EUT

<input checked="" type="checkbox"/> table-top EUT		<input type="checkbox"/> floor-standing EUT	
Dimensions:	Height:	Width:	Length:
	100 mm	25 mm	125 mm
Software version:	<p>A special test firmware was written for the EMC/Radio tests, to have a continuous transmission.</p> <p>In reality the RFID and Bluetooth modules are just transmitting, when the lock button is pushed. They are never transmitting at the same time.</p>		
Product version:	3.1		
<p>Description: With the GAT ECO.Side Lock 7xxx (NW) xx, lockers and depot boxes can be electronically locked and unlocked. The user simply presses the locker door shut and holds their data carrier next to the RFID reading center on the locker door. This action activates the lock electronics and the authorization of the user's data carrier is checked. If the authorization is valid, the locker door is locked or unlocked by the GAT ECO.Side Lock 7xxx (NW) xx accordingly.</p> <p>System users are identified at the lock using contactless RFID data carriers (Radio Frequency Identification).</p>			
Transmitter frequency range: 13.56 MHz			
Frequency agile or hopping:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Antenna:	<input checked="" type="checkbox"/> Internal antenna	<input type="checkbox"/> External antenna	
Antenna connector:	<input checked="" type="checkbox"/> None, internal antenna	<input type="checkbox"/> Yes, type	
Type of used TAG:	GAT Testcard Mifare		
EUT - Temperature range:	-15°C to +55°C		
Transmitter stand by mode supported:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

### 6.1.1 Photo/ Sketch of the rating plate



## 6.2 Power interface

MODE	VOLTAGE (V)	FREQUENCY (Hz)	COMMENT
1	3.6 V	DC	SIZE AA

### Power sources/associated test equipment

DESCRIPTION	MANUFACTURER	TYPE	SN	ASSET NO.
Lithium battery	TADIRAN	High Energy, 3.6 V	-	-

## 6.3 Configuration mode

MODE	DESCRIPTION
1	A tag card was placed in front of the RFID reader

## 6.4 Operation mode

MODE	DESCRIPTION
1	Continuous transmission
2	Pulsing transmission with an interval of 130 ms

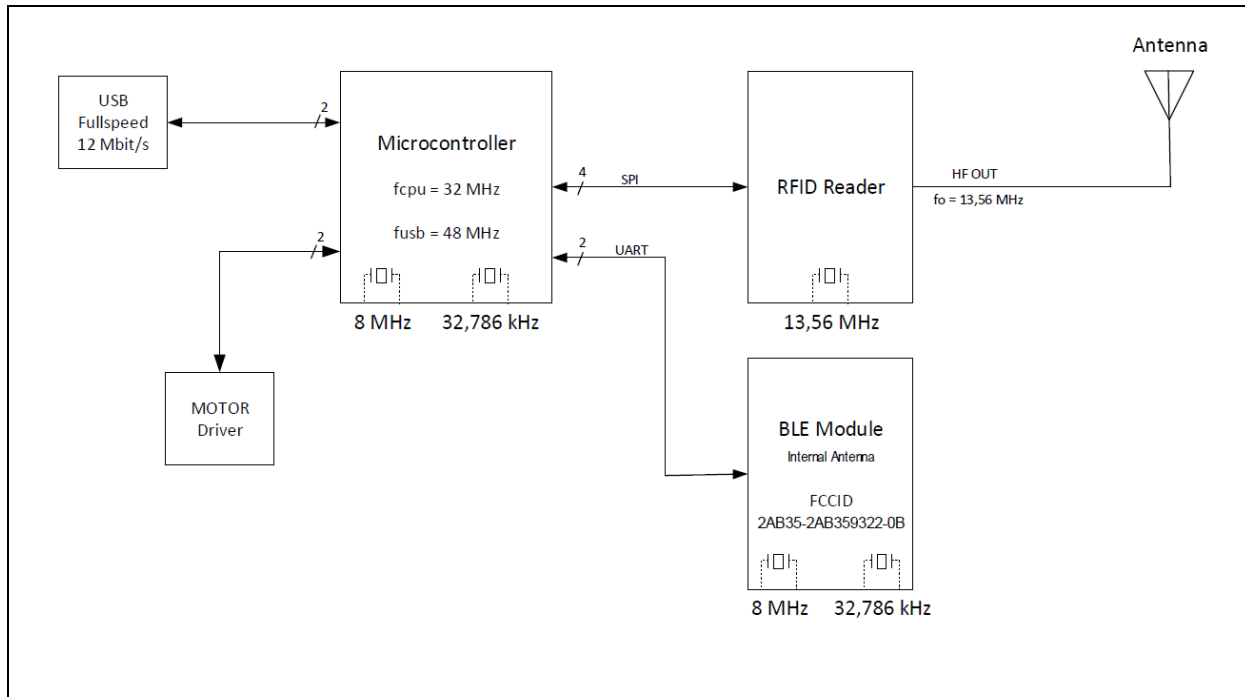
## 6.5 Peripheral devices used for testing

DEVICE	MANUFACTURER	TYPE	FID	FCC ID
GAT Testcard	Gantner	Legic	9999	-

## 6.6 Supply and interconnecting cables used for testing

LINE	LENGTH (cm)	SHIELDING
none		

## 6.7 Block diagram of the EUT



## SECTION 7

### 7.1 Field strength 13.110 MHz – 14.010 MHz (Emission Mask)

NORMATIVE REFERENCES			RESULT
Limits according to:	FCC §15.225 (a) – (c) RSS-210, Issue 9, section B4		P
Methods of measurement according to:	ANSI C63.10, section 6.3, 6.4 RSS-Gen 6.13, 8.9		
Equipment mode	Power interface	1	
	EUT configuration mode	1	
	Operation mode	1	
Test requirements	Frequency range	13.110 MHz – 14.010 MHz	
	Measurement time	150 ms	
	Class	B	
	Antenna height	1 m	

#### Limits

The limits below 30 MHz are given for different measurement distances. The limits below 30 MHz are converted to 3 m by using the extrapolation factor 40 dB/decade (according to §15.31).

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)	Field strength (dBμV/m)	Measurement distance (m)
13.110 - 13.410	106	40.5	30	80.5	3
13.410 - 13.553	334	50.5	30	90.5	3
13.553 - 13.567	15848	84.0	30	124.0	3
13.567 - 13.710	334	50.5	30	90.5	3
13.710 - 14.010	106	40.5	30	80.5	3

#### Test setup details

Compliance with the spectrum mask is tested using a spectrum analyzer with resolution bandwidth set to 10 kHz or 9 kHz CISPR. The video bandwidth shall be at least three times greater than the resolution bandwidth.

The test was carried out automatically by the test receiver.

The EUT is a table-top EUT and was standing on a table made of Styrodur with a Pertinax plate on top and the dimensions 1.6 m x 1.0 m x 0.8 m (Length x Width x Height).

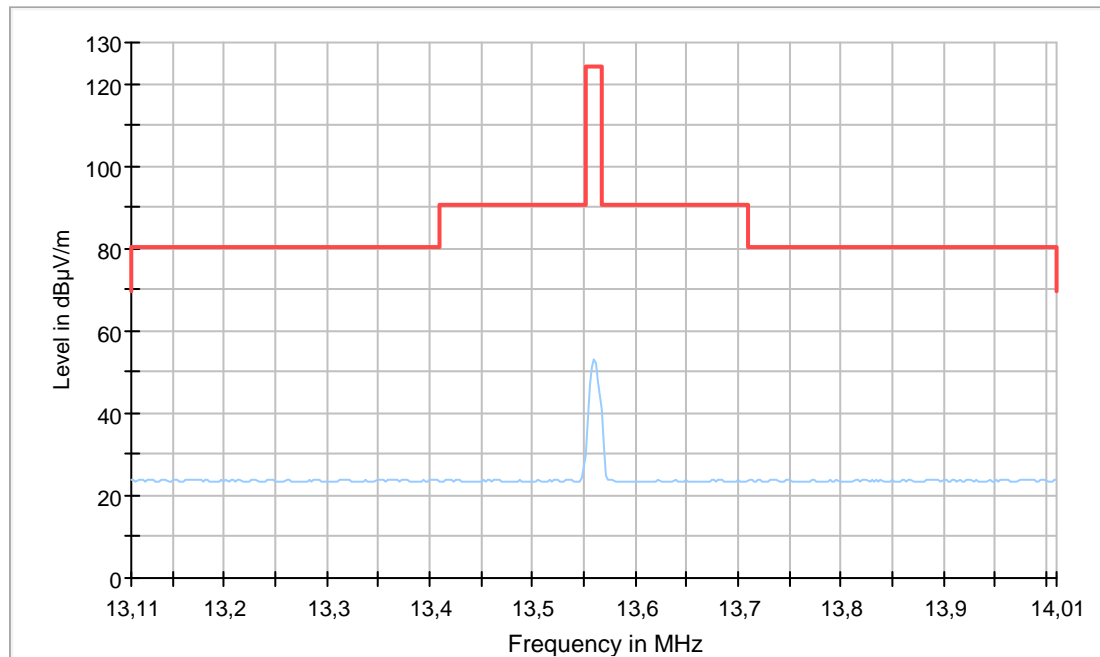
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector.

#### Test equipment

DESCRIPTION	MANUFACTURER	TYPE	SN	ASSET NO.	CALIBRATION
Semi-Anechoic chamber	Siepel	REF W460SLB	-	PM KF 1150-01	2016-12 (3 years)
Turntable	Inn-Co	-	-	PM KF 2949-04	-
Receiver 10 Hz - 7 GHz	Rohde & Schwarz	ESR7	101095	PM KF 2441	2017-10 (1 year)
Loop antenna 9 kHz- 30 MHz	Rohde & Schwarz	HFH2-Z2	881058/48	PM KF 1401	2017-10 (2 years)
Test software	Rohde & Schwarz	EMC 32 V.10.01.00	-	PM KF 2983-2	-

## Measurement results – Field strength 13.110 MHz – 14.010 MHz (Emission Mask):

EUT: GAT ECO.Side Lock 7010 NW F ISO  
Test Verdict: pass  
Test Description: FCC 15.225 / RSS-210, RSS-Gen  
Operating Conditions: continuous field with tag  
Operator Name: RDR  
Project Number: 31426  
Date: 2018-02-15  
Comment: NO.: 1804000003



— Preview Result 2-AVG [Preview Result 2.Result:2]  
— Preview Result 1-QPK [Preview Result 1.Result:1]  
\* Critical\_Freqs AVG [Critical\_Freqs.Result:5]  
\* Critical\_Freqs QPK [Critical\_Freqs.Result:4]  
— FCC 15\_225\_9kHz\_to\_30MHz\_d=3m [.\zF radiated\FCC Part 15C]  
◆ Final\_Result QPK [Final\_Result.Result:4]  
◆ Final\_Result AVG [Final\_Result.Result:5]

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)
13.56	53.5	124	70.5	1000	9

## EMI Auto Test Template: zf-FCC-RE-R12-AN23

Hardware Setup: EN-RE-R12-AN23  
Measurement Type: Open-Area-Test-Site  
Frequency Range: 9 kHz - 30 MHz  
Graphics Level Range: 0 dB $\mu$ V/m - 130 dB $\mu$ V/m

### Preview Measurements:

Antenna height: 0 - 1000 cm , Step Size = 0 cm , Positioning Speed = 1  
Polarization: H + V  
Turntable position: 0 - 352 deg , Step Size = 22 deg , Positioning Speed = 8  
Scan Test Template: zF-FCC-RE-R12-AN23\_PRE

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
Receiver: [ESR 7]					
9 kHz - 90 kHz	50 Hz	AVG	200 Hz	1 s	0 dB
90 kHz - 110 kHz	50 Hz	QPK	200 Hz	1 s	0 dB
110 kHz - 150 kHz	50 Hz	AVG	200 Hz	1 s	0 dB
150 kHz - 490 kHz	2,25 kHz	AVG	9 kHz	1 s	0 dB
490 kHz - 30 MHz	2,25 kHz	QPK	9 kHz	1 s	0 dB

## 7.2 Radiated emissions < 30 MHz

NORMATIVE REFERENCES			RESULT
Limits according to:	FCC §15.225 (d), §15.209 RSS-210, Issue 9, section B4		P
Methods of measurement according to:	ANSI C63.10, section 6.3, 6.4 RSS-Gen 6.13, 8.9		
Equipment mode	Power interface	1	
	EUT configuration mode	1	
	Operation mode	1	
Test requirements	Frequency range	9 kHz - 30 MHz	
	Class	B	
	Antenna height	1 m	

### Limits

The limits below 30 MHz are given for different measurement distances. The limits below 30 MHz are converted to 3 m by using the extrapolation factor 40 dB/decade (according to §15.31).

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	67.6 - 20 · log(F(kHz))	300
0.490 - 1.705	24000/F(kHz)	87.6 - 20 · log(F(kHz))	30
1.705 - 13.110	30	29.5	30
14.010 - 30.000	30	29.5	30

Additionally, the level of any unwanted emissions shall not exceed the level of the fundamental emission.

### Test setup details

Compliance with the spectrum mask is tested using a spectrum analyzer with resolution bandwidth set to 10 kHz or 9 kHz CISPR. The video bandwidth shall be at least three times greater than the resolution bandwidth.

The test was carried out automatically by the test receiver.

The EUT is a table-top EUT and was standing on a table made of Styrodur with a Pertinax plate on top and the dimensions 1.6 m x 1.0 m x 0.8 m (Length x Width x Height).

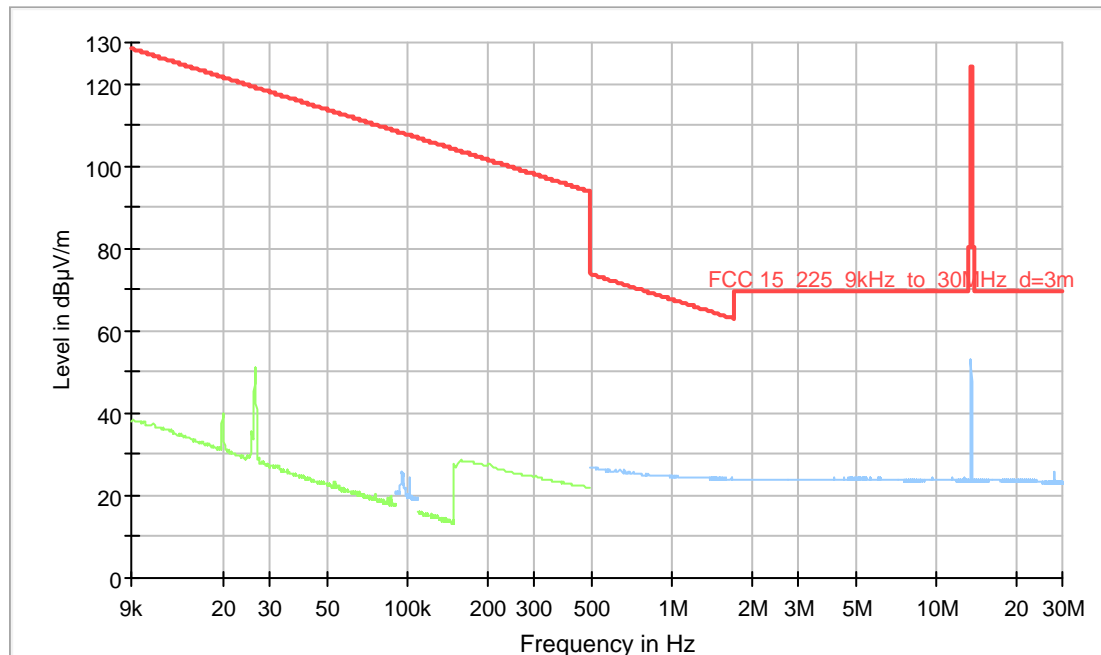
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

### Test equipment

DESCRIPTION	MANUFACTURER	TYPE	SN	ASSET NO.	CALIBRATION
Semi-Anechoic chamber	Siepel	REF W460SLB	-	PM KF 1150-01	2016-12 (3 years)
Turntable	Inn-Co	-	-	PM KF 2949-04	-
Receiver 10 Hz - 7 GHz	Rohde & Schwarz	ESR7	101095	PM KF 2441	2017-10 (1 year)
Loop antenna 9 kHz- 30 MHz	Rohde & Schwarz	HFH2-Z2	881058/48	PM KF 1401	2017-10 (2 years)
Test software	Rohde & Schwarz	EMC 32 V.10.01.00	-	PM KF 2983-2	-

## Measurement results – Radiated emissions < 30 MHz:

EUT:	GAT ECO.Side Lock 7010 NW F ISO
Test Verdict:	pass
Test Description:	FCC 15.225 / RSS-210, RSS-Gen
Operating Conditions:	continuous field with tag
Operator Name:	RDR
Project Number:	31426
Date:	2018-02-15
Comment:	N0.: 1804000003



- Preview Result 2-AVG [Preview Result 2.Result:2]
- Preview Result 1-QPK [Preview Result 1.Result:1]
- \* Critical\_Freqs AVG [Critical\_Freqs.Result:5]
- \* Critical\_Freqs QPK [Critical\_Freqs.Result:4]
- FCC 15\_225\_9kHz\_to\_30MHz\_d=3m [.\zF radiated\FCC Part 15C]
- ◆ Final\_Result QPK [Final\_Result.Result:4]
- ◆ Final\_Result AVG [Final\_Result.Result:5]



## EMI Auto Test Template: zf-FCC-RE-R12-AN23

Hardware Setup: EN-RE-R12-AN23  
Measurement Type: Open-Area-Test-Site  
Frequency Range: 9 kHz - 30 MHz  
Graphics Level Range: 0 dB $\mu$ V/m - 130 dB $\mu$ V/m

Preview Measurements:  
Antenna height: 0 - 1000 cm , Step Size = 0 cm , Positioning Speed = 1  
Polarization: H + V  
Turntable position: 0 - 352 deg , Step Size = 22 deg , Positioning Speed = 8  
Scan Test Template: zF-FCC-RE-R12-AN23\_PRE

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
Receiver: [ESR 7]					
9 kHz - 90 kHz	50 Hz	AVG	200 Hz	1 s	0 dB
90 kHz - 110 kHz	50 Hz	QPK	200 Hz	1 s	0 dB
110 kHz - 150 kHz	50 Hz	AVG	200 Hz	1 s	0 dB
150 kHz - 490 kHz	2,25 kHz	AVG	9 kHz	1 s	0 dB
490 kHz - 30 MHz	2,25 kHz	QPK	9 kHz	1 s	0 dB

### 7.3 Radiated emissions 30 MHz to 1 GHz

NORMATIVE REFERENCES			RESULT
Limits according to:	FCC §15.225 (d), §15.209 RSS-210, Issue 9, section B4		P*
Methods of measurement according to:	ANSI C63.10, section 6.3, 6.5 RSS-Gen 6.13, 8.9		
Equipment mode	Power interface	1	
	EUT configuration mode	1	
	Operation mode	2	
Test requirements	Frequency range	30 MHz – 1 GHz	
	Class	B	
	Antenna height	1 m	

\*Pass with modification explained in section 8

#### Limits

Frequency (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
30 – 88	100	40.0	3
88 – 216	150	43.5	3
216 – 960	200	46.0	3
Above 960	500	54.0	3

#### Test setup details

The EUT is a table-top EUT and was standing on a table made of Styrodur with a Pertinax plate on top and the dimensions 1.6 m x 1.0 m x 0.8 m (Length x Width x Height).

Overview sweeps performed with peak detectors and final measurement with quasi-peak detectors.

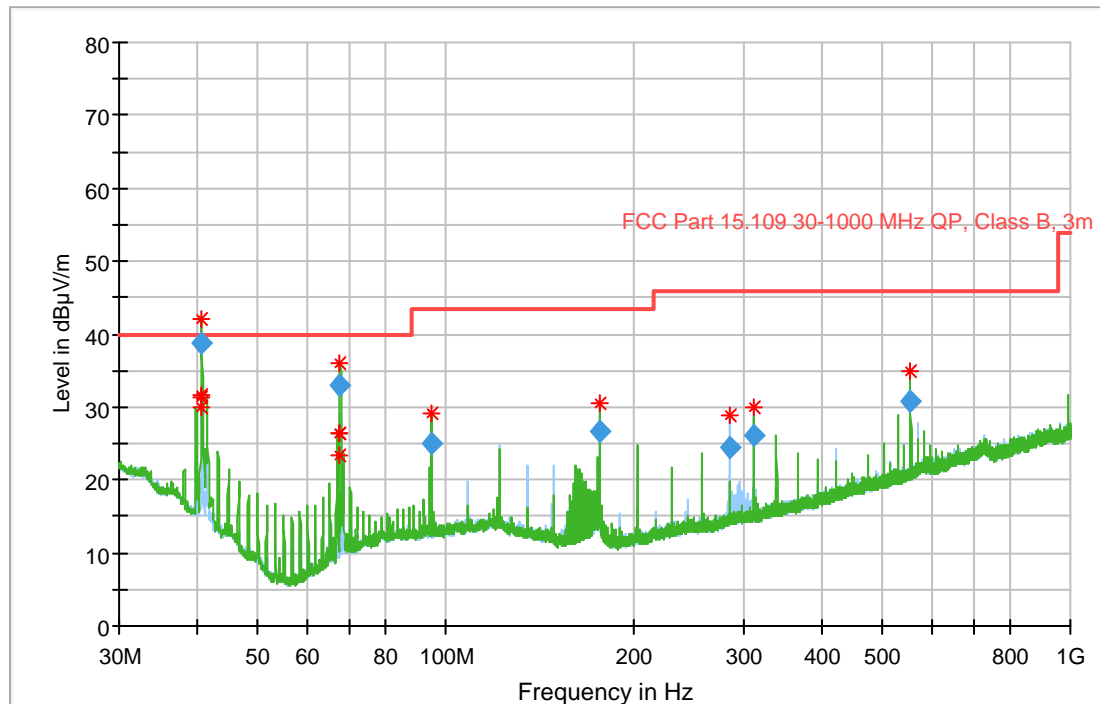
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector.

#### Test equipment

DESCRIPTION	MANUFACTURER	TYPE	SN	ASSET NO.	CALIBRATION
Semi-Anechoic chamber	Siepel	REF W460SLB	-	PM KF 1150-01	2016-12 (3 years)
Turntable	Inn-Co	-	-	PM KF 2949-04	-
Receiver 10 Hz - 7 GHz	Rohde & Schwarz	ESR7	101095	PM KF 2441	2017-10 (1 year)
Antenna 30 MHz - 3GHz	Rohde & Schwarz	HL 562	100354	PM KF 1123	2018-03 (2 years)
Test software	Rohde & Schwarz	EMC 32 V.10.01.00	-	PM KF 2983-2	-

## Measurement results – Radiated emissions 30 MHz to 1 GHz:

EUT: GAT ECO.Side Lock 7010 NW F ISO  
Test Verdict: Passed  
Test Description: Radiated emissions, FCC Part 15.109  
Operating Conditions: Pulse mode with tag  
Operator Name: RDR  
Project Number: 31426  
Date: 2018-04-10  
Comment: NO.: 1804000001



— Preview Result 1H-PK+ [Preview Result 1H.Result:2]  
— Preview Result 1V-PK+ [Preview Result 1V.Result:2]  
\* Critical\_Freqs PK+ [Critical\_Freqs.Result:4]  
— FCC Part 15.109 30-1000 MHz QP, Class B, 3m [..\EMI radiated\FCC Part 15B]  
◆ Final\_Result QPK [Final\_Result.Result:4]

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
40.680000	38.74	40.00	1.26	1000.0	120.000	97.0	V	6.0	14.4
67.800000	32.90	40.00	7.11	1000.0	120.000	139.0	V	9.0	8.9
94.920000	25.11	43.50	18.39	1000.0	120.000	98.0	V	3.0	11.8
176.280000	26.77	43.50	16.73	1000.0	120.000	98.0	V	180.0	12.0
284.760000	24.58	46.00	21.42	1000.0	120.000	99.0	H	337.0	12.8
311.880000	26.00	46.00	20.00	1000.0	120.000	98.0	H	333.0	13.5
555.990000	30.87	46.00	15.13	1000.0	120.000	97.0	V	100.0	18.4

## EMI Auto Test Template: FCC-RE-R12-AN08\_1s

Hardware Setup: EN-RE-R12-AN08  
Measurement Type: Open-Area-Test-Site  
Frequency Range: 30 MHz - 1 GHz  
Graphics Level Range: 0 dBμV/m - 80 dBμV/m

Preview Measurements:  
Antenna height: 100 - 355 cm , Step Size = 85 cm , Positioning Speed = 8  
Polarization: H + V  
Turntable position: 0 - 352 deg , Step Size = 22 deg , Positioning Speed = 8  
Graphics Display: Show separate traces for horizontal and vertical polarization  
Scan Test Template: EN-RE-R12-AN08\_PRE\_1s

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
Receiver: [ESR 7]					
30 MHz - 1 GHz	30 kHz	PK+	120 kHz	1 s	20 dB
1 GHz - 3 GHz	250 kHz	PK+	1 MHz	1 s	20 dB

Frequency Zoom:  
Zoom Scan Template: EN-RE-R12-AN08\_ZOOM

Adjustment:  
Antenna height: Range = 90 cm , Measuring Speed = 1  
Turntable position: Range = 30 deg , Measuring Speed = 1  
Template for Single Meas.: EN-RE-R12-AN08\_MAX\_1s

Final Measurements:  
Template for Single Meas.: EN-RE-R12-AN08\_FIN

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
Receiver: [ESR 7]					
30 MHz - 1 GHz	40 kHz	QPK	120 kHz	1 s	20 dB
1 GHz - 3 GHz	40 kHz	QPK	1 MHz	1 s	20 dB

## 7.4 Frequency stability measurement

NORMATIVE REFERENCES			RESULT
Limits according to:	FCC §15.225 (e) RSS-210, Issue 9, section B6 RSS-Gen Issue 4, section 6.11		P
Methods of measurement according to:	ANSI C63.10, section 9.14		
Equipment mode	Power interface	1	
	EUT configuration mode	1	
	Operation mode	1	

### Limits

Limit:	The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ ( $\pm 100$ ppm) of the carrier frequency under nominal conditions.
EUT temperature range:	-15°C to +55°C
Test temperature range:	-30°C to +55°C
Nominal battery voltage:	3.6 V DC
Lower voltage limit (85%):	3.06 V DC

### Test equipment

DESCRIPTION	MANUFACTURER	TYPE	SN	ASSET NO.	CALIBRATION
Temperature chamber	Heraeus-Vötsch	HT4010	45021	PM KF 1402	2018-02 (1 year)
Spectrum analyser	Rohde & Schwarz	FSV40	837356/012	PM KF 2783	2017-09 (1 year)
Near field probes	EMCO	EMCO 7405	1405	PM KF 0139	2017-12 (1 year)

### Measurement results – Frequency stability measurement:

Temperature °C	Carrier MHz	Upper limit:	13.696 MHz
		Lower limit:	13.424 MHz
		Measured value under temperature influence:	
+55	13.560	13.560	
+50	13.560	13.560	
+40	13.560	13.560	
+30	13.560	13.560	
+20	13.560	13.560	
+10	13.560	13.560	
0	13.560	13.560	
-10	13.560	13.560	
-20	13.560	13.560	
-30	13.560	13.560	

### Comment

The DC voltage reduction from 3.6 V to 3.06 V at a temperature of 20°C had no influence on the frequency of the carrier.

## 7.5 Occupied bandwidth

NORMATIVE REFERENCES			RESULT
Limits according to:	RSS-Gen, Issue 4, 6.6		P
Methods of measurement according to:	RSS-Gen, Issue 4, 6.6		
Equipment mode	Power interface	1	
	EUT configuration mode	1	
	Operation mode	1	

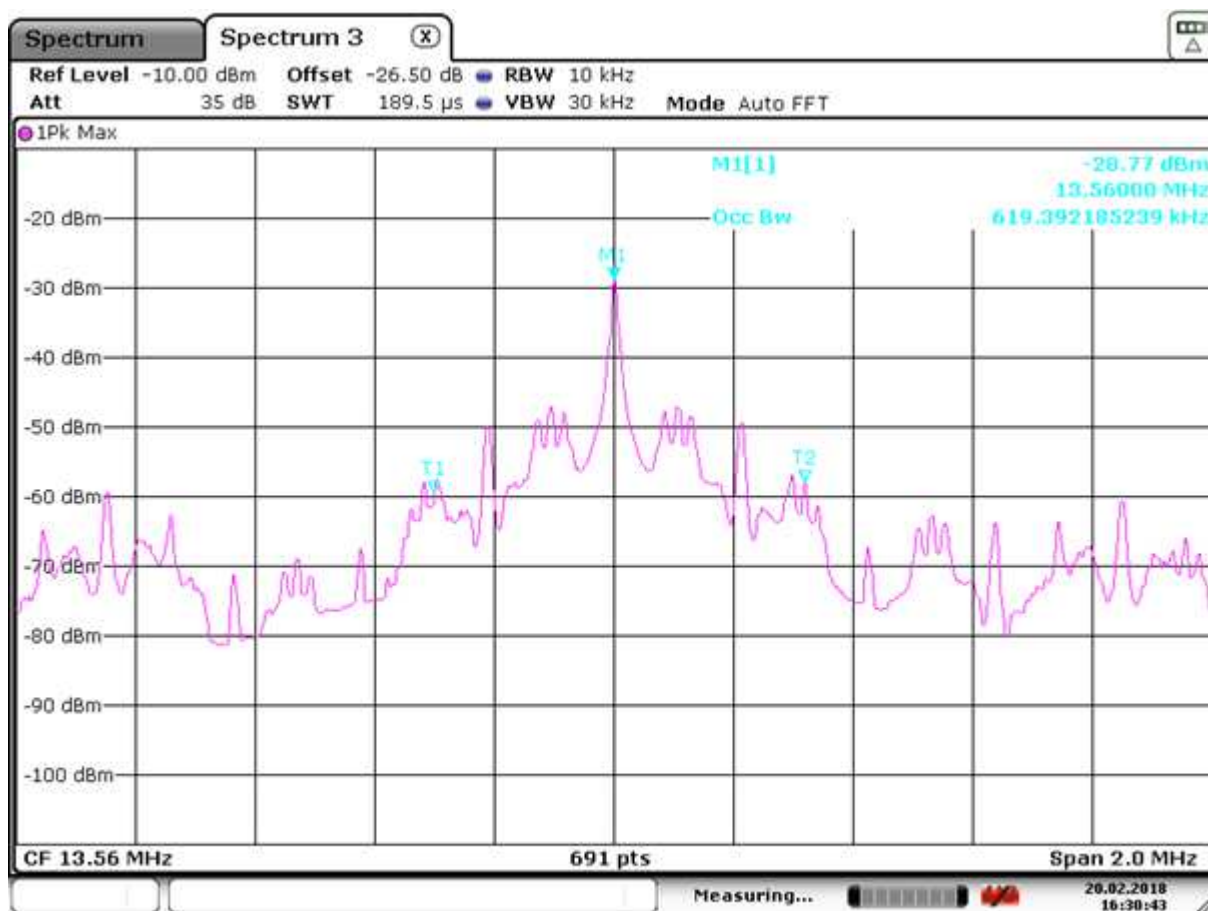
### Test equipment

DESCRIPTION	MANUFACTURER	TYPE	SN	ASSET NO.	CALIBRATION
Spectrum analyser	Rohde & Schwarz	FSV40	837356/012	PM KF 2783	2017-09 (1 year)
Near field probes	EMCO	EMCO 7405	1405	PM KF 0139	2017-12 (1 year)

### Comment

The 99% occupied bandwidth is 619.392 kHz.

### Measurement results – 99% occupied bandwidth:



## SECTION 8

### ANNEX

#### 8.1 Modifications

To pass the radiated emissions between 30 MHz and 1 GHz, the lock under test was modified the following way: the time between read attempts has been increased to 900ms.

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**End of test report**