

# TEST REPORT

of

FCC CFR 47 part 1, 1.1307(b), 1.1310


FCC ID: 2ABFG-NTB600TSACC

Equipment Under Test : Digital Door Lock  
Model Name : NTB622-ACC  
Variant Model Name(s) : NTB642-ACC  
Applicant : iRevo-ASSA ABLOY Korea  
Manufacturer : iRevo-ASSA ABLOY Korea  
Date of Receipt : 2021.02.17  
Date of Test(s) : 2021.02.17 ~ 2021.04.01  
Date of Issue : 2021.04.06


In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

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- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.
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Tested by:

  
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Technical  
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**SGS Korea Co., Ltd. Gunpo Laboratory**



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## 1. General Information

### 1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

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- Designation number: KR0150

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### 1.2. Details of Applicant

Applicant : iRevo-ASSA ABLOY Korea  
 Address : 205-29, Gasan Digital 1-ro, Geumcheon-gu, Seoul, Korea, 08052  
 Contact Person : Jang, Soo-kyung  
 Phone No. : +82 2 2107 5741

### 1.3. Details of Manufacturer

Applicant : Same as applicant  
 Address : Same as applicant

### 1.4. Description of EUT

<b>Kind of Product</b>	Digital Door Lock
<b>Model Name</b>	NTB622-ACC
<b>Variant Model</b>	NTB642-ACC
<b>Power Supply</b>	DC 6.0 V
<b>Frequency Range</b>	2 402 MHz ~ 2 480 MHz (Bluetooth Low Energy)
<b>Modulation Technique</b>	GFSK
<b>Number of Channels</b>	40 channels (Bluetooth Low Energy)
<b>Antenna Type</b>	Chip antenna
<b>Antenna Gain</b>	-0.51 dB i
<b>H/W Version</b>	PV02
<b>S/W Version</b>	V3.0.4

### 1.5. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL001895	2021.04.06	Initial

### 1.6. Description of variant model(s)

Model	Description
NTM622-ACC	- Basic model
NTM642-ACC	- Same to basic model except below - There is no key cylinder on handles.

## 2. RF Exposure Evaluation

### 2.1. Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1 500	-	-	f/300	6
1 500-100 000	-	-	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	30
30-300	27.5	0.073	0.2	30
300-1 500	-	-	f/1500	30
<b><u>1 500-100 000</u></b>	-	-	<b><u>1.0</u></b>	<b><u>30</u></b>

#### 2.1.1. Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where  $P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

R = distance between observation point and center of the radiator in cm

$P_d$  the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

**2.1.2. Test Result of RF Exposure Evaluation**

Test Item : RF Exposure Evaluation Data  
 Test Mode : Normal Operation

**2.1.3. Output Power into Antenna & RF Exposure Evaluation Distance**

**Bluetooth Low Energy**  
**- Maximum tune up tolerance**

Frequency Range (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm <sup>2</sup> )	Limits (mW/cm <sup>2</sup> )
2 400 ~ 2 483.5	5.0	-0.51	0.000 559	1

**Note;**

- The power density Pd (5th column) at a distance of 20 cm calculated from the friis transmission formula is far below the limit of 1 mW/cm<sup>2</sup>.
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
- This equipment should be installed and operated with minimum 20 cm between the radiator and your body.
- The antenna gain of this transmitter is less than 6 dB i and must not be collocated or operating in conjunction with any other antenna or transmitter unless authorized to do so by the FCC.
- According to KDB 447498 D01 RF Exposure Guidance 4.1.

**- End of the Test Report -**