

RF EXPOSURE REPORT

Applicant:	Otis High Rise Elevator (Shanghai) Co., Ltd.
Address:	Room 101, Building 3, No. 1599, Xinjinqiao Road, China (Shanghai) Pilot Free Trade Zone.

Manufacturer or Supplier:	Otis High Rise Elevator (Shanghai) Co., Ltd.
Address:	Room 101, Building 3, No. 1599, Xinjinqiao Road, China (Shanghai) Pilot Free Trade Zone.
Product:	4G IoT Wireless Gateway
Brand Name:	Otis ONE[®]
Model Name:	C9200-4L
FCC ID:	2AUTDC9200-4L
Date of tests:	Oct. 23, 2019 ~ Nov. 06, 2019

The submitted sample of the above equipment has been tested for according to the requirements of the following standards:

- ☒ IEEE C95.1
- ☒ FCC Part 2.1091
- ☒ KDB 447498 D01 General RF Exposure Guidance v06

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Alex Chen Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: Nov. 08, 2019	 Date: Nov. 08, 2019

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Test Report No.: SA191023W005

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA191023W005	Original release	Nov. 08, 2019

1 GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF EUT

PRODUCT	4G IoT Wireless Gateway	
BRAND NAME	Otis ONE®	
MODEL NAME	C9200-4L	
NOMINAL VOLTAGE	DC 12V	
MODULATION TYPE	BT_LE	GFSK
	WCDMA	BPSK/QPSK
	LTE	QPSK, 16QAM
OPERATING FREQUENCY	BT_LE	2402MHz ~ 2480MHz
	WCDMA	1852.4MHz ~ 1907.6MHz(FOR WCDMA Band 2) 1712.4MHz ~ 1752.5MHz(FOR WCDMA Band 4) 826.4MHz ~ 846.6MHz (FOR WCDMA Band 5)
	LTE	1850.7MHz ~ 1909.3MHz (FOR LTE Band2) 1710.7MHz ~ 1754.3MHz (FOR LTE Band4) 699.7MHz ~ 715.3MHz (FOR LTE Band12)
ANTENNA TYPE	BT_LE	Ant 0: Fixed External Antenna with 3dBi gain Ant 1: Fixed External Antenna with 3dBi gain
	WCDMA	Ant 0: Fixed External Antenna with 3dBi gain Ant 1: Fixed External Antenna with 3dBi gain
	LTE	Ant 0:Fixed External Antenna with 3dBi gain Ant 1: Fixed External Antenna with 3dBi gain
HW VERSION	V1.0.3	
SW VERSION	V1.0.0	
CABLE SUPPLIED	N/A	
ACCESSORY DEVICES	Refer to note as below	



NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT was powered by the following adapter:

ADAPTER	
BRAND:	ShenZhen Mass Power Electronic Limited
MODEL:	NBS18C120150D5
INPUT:	AC 100-240V, 600mA
OUTPUT:	DC 12V, 1500mA
Power Cord:	1.2 meter
Manufacturer:	Dongguan NB Power Electronic Limited

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

List of Accessory:

ACCESSORIES	BRAND	MODEL
WWAN Ant1	ASIAN CREATION COMMUNICATION CO.,LTD	AC-Q7027-I15
WWAN Ant2	ASIAN CREATION COMMUNICATION CO.,LTD	AC-Q7027-24W
BT Ant1	ASIAN CREATION COMMUNICATION CO.,LTD	AC-Q24I01(3M)
BT Ant2	ASIAN CREATION COMMUNICATION CO.,LTD	AC-Q24-24W

2 RF EXPOSURE

2.1 LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(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 ²	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 ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = Frequency in MHz

2.2 MPE CALCULATION FORMULA

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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



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2.3 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

**2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER****BLE**

Mode	Frequency (MHz)	Operating Mode	Antenna Gain (dBi)	Tune-up Power (dBm)	Tune-up Power (mW)	Power Density (mW/cm ²)	limit (mW/cm ²)	PASS / FAIL
BLE	2402~2480	GFSK	3	2.5	1.78	0.001	1.00	PASS

WCDMA

Mode	Frequency (MHz)	Operating Mode	Antenna Gain (dBi)	Tune-up Power (dBm)	Tune-up Power (mW)	Power Density (mW/cm ²)	limit (mW/cm ²)	PASS / FAIL
WCDMA II	1850 ~ 1910	RMC12.2K	3	23.5	223.87	0.089	1.00	PASS
WCDMA IV	1710 ~ 1755	RMC12.2K	3	23.5	223.87	0.089	1.00	PASS
WCDMA V	824 ~ 849	RMC12.2K	3	23.5	223.87	0.089	0.55	PASS

LTE

Mode	Frequency (MHz)	Operating Mode	Antenna Gain (dBi)	Tune-up Power (dBm)	Tune-up Power (mW)	Power Density (mW/cm ²)	limit (mW/cm ²)	PASS / FAIL
Band2	1850 ~ 1910	QPSK	3	23.5	223.87	0.089	1.00	PASS
Band4	1710 ~ 1755	QPSK	3	23.5	223.87	0.089	1.00	PASS
Band12	699 ~ 716	QPSK	3	23.5	223.87	0.089	0.47	PASS



2.5 CONCLUSION OF SIMULTANEOUS TRANSMITTER

Both of the BLE and WWAN can transmit simultaneously, the formula of calculated the MPE is:

$$\text{CPD1/LPD1} + \text{CPD2/LPD2} + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

Therefore the worst-case situation is

$0.001/1.00 + 0.089/1.00 + 0.089/1.00 + 0.089/0.55 + 0.089/1.00 + 0.089/1.00 + 0.089/0.47$
 $= 0.708180$, which is less than "1", This confirmed that the device comply with FCC
1.1310 MPE limit.

--END--