



Test Report No.: SA180724W011R1



# RF EXPOSURE REPORT

**Product:** Lenovo Smart Dock  
**Model Name:** Lenovo HA-200  
**FCC ID:** O57HA200  
**Applicant:** Lenovo(Shanghai) Electronics Technology Co., Ltd.  
**Address:** NO.68 BUILDING, 199 FENJU RD, China (Shanghai) Pilot Free Trade Zone, 200131, CHINA  
**Manufacturer:** Lenovo PC HK Limited  
**Address:** 23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong  
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**Report No.:** SA180724W011R1  
**Received Date:** Jul. 24, 2018  
**Test Date:** Jul. 25, 2018 ~ Aug. 15, 2018  
**Issued Date:** Sep. 17, 2018

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**BUREAU**  
**VERITAS**

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA180724W011R1	Original release	Sep. 17, 2018



# 1 CERTIFICATION

**PRODUCT:** Lenovo Smart Dock  
**BRAND NAME:** Lenovo  
**MODEL NAME:** Lenovo HA-200  
**APPLICANT:** Lenovo(Shanghai) Electronics Technology Co., Ltd.  
**TESTED:** Jul. 25, 2018 ~ Aug. 15, 2018  
**TEST SAMPLE:** Production Unit  
**STANDARDS:** **FCC Part 2 (Section 2.1091)**  
**FCC OET Bulletin 65, Supplement C (01-01)**  
**KDB 447498 D01 General RF Exposure Guidance v06**  
**IEEE C95.1**

The above equipment has been tested by **BV 7Layers Communications Technology (Shenzhen) Co. Ltd** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**PREPARED BY :** , **DATE:** Sep. 17, 2018  
(Roger Li/ Engineer)

**APPROVED BY :** , **DATE:** Sep. 17, 2018  
( Sam Tung / Manager)



## 2 GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Lenovo Smart Dock	
MODEL NAME	Lenovo HA-200	
NOMINAL VOLTAGE	12Vdc (adapter or host equipment)	
OPERATING TEMPERATURE RANGE	0 ~ 45°C	
MODULATION TYPE	BT_LE	DTS
	Bluetooth	GFSK, π/4-DQPSK, 8DPSK
OPERATING FREQUENCY	Bluetooth/BT_LE	2402MHz ~ 2480MHz
ANTENNA GAIN	PCB Antenna with 2dBi gain	
HW VERSION	40-HA2825-MA&PG&SEB4G/40-HOMEAS-MIC2G	
FW VERSION	V007	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	

**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:	XinSPower
MODEL:	A241-1202000U
INPUT:	AC 100-240V, 800mA
OUTPUT:	DC 12V, 2000mA
SIGNAL LINE:	1.5 METER

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



### 3 RF EXPOSURE

#### 3.1 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 (minutes)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

#### 3.2 MPE CALCULATION FORMULA

$$Pd = (Pout * G) / (4 * pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

Pout = 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

#### 3.3 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**.

### 3.4 CONDUCTED POWER

#### Bluetooth

##### GFSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	6.57	N/A
39	2441	<b>7.54</b>	N/A
78	2480	7.53	N/A

##### $\pi/4$ DQPSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	5.68	N/A
39	2441	6.59	N/A
78	2480	6.78	N/A

##### 8DPSK

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	5.63	N/A
39	2441	6.56	N/A
78	2480	6.70	N/A

#### BT-LE (GFSK)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	6.43	N/A
19	2440	7.48	N/A
39	2480	7.53	N/A



### 3.5 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

#### TUNE-UP POWER TABLE

Band	Frequency (MHz)	Operating Mode	Tune-Up Power And Tolerance (dBm)
Bluetooth	2441	GFSK	7.0 ± 1.0

BT:

Band	Frequency (MHz)	Operating Mode	Antenna Gain (dBi)	Tune-up Power (dBm)	E.I.R.P Power (mW)	Power Density (mW/cm <sup>2</sup> )	limit (mW/cm <sup>2</sup> )	PASS / FAIL
Bluetooth	2441	GFSK	2	8.0	10.000	0.002	1.00	PASS

--END--