



**No. I21Z70186-SEM02**

**for**

**Samsung Electronics Co., Ltd.**

**Notebook PC**

**Model Name: XE315XDA**

**Hardware Version: REV1.0**

**Software Version: Chrome**

**FCC ID: ZCAXE315XDA**

**Issued Date: 2021-7-22**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

**Test Laboratory:**

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No.I21Z70186-SEM02

## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Issue Date</b>	<b>Description</b>
I21Z70186-SEM02	Rev.0	2021-7-8	Initial creation of test report
I21Z70186-SEM02	Rev.1	2021-7-16	Remove the information for LTE Band40 on section 7.
I21Z70186-SEM02	Rev.2	2021-7-22	Update the information for applicant information on section 2.1.



## **CONTENTS**

<b>1. TEST LABORATORY .....</b>	<b>4</b>
<b>1.1. TESTING LOCATION .....</b>	<b>4</b>
<b>1.2. TESTING ENVIRONMENT .....</b>	<b>4</b>
<b>1.3. PROJECT DATA .....</b>	<b>4</b>
<b>1.4. SIGNATURE.....</b>	<b>4</b>
<b>2. CLIENT INFORMATION.....</b>	<b>5</b>
<b>2.1. APPLICANT INFORMATION.....</b>	<b>5</b>
<b>2.2. MANUFACTURER INFORMATION.....</b>	<b>5</b>
<b>3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE) .....</b>	<b>6</b>
<b>3.1. ABOUT EUT.....</b>	<b>6</b>
<b>3.2. INTERNAL IDENTIFICATION OF EUT .....</b>	<b>6</b>
<b>3.3. INTERNAL IDENTIFICATION OF AE.....</b>	<b>6</b>
<b>4. REFERENCE DOCUMENTS .....</b>	<b>7</b>
<b>4.1. REFERENCE DOCUMENTS FOR TESTING.....</b>	<b>7</b>
<b>5. RF EXPOSURE LIMIT .....</b>	<b>7</b>
<b>6. CLASSIFICATION .....</b>	<b>8</b>
<b>7. TEST RESULTS .....</b>	<b>8</b>
<b>7.1. THE MAXIMUM ANTENNA GAIN.....</b>	<b>8</b>
<b>7.2. THE MAXIMUM RATED POWER LIMITS .....</b>	<b>9</b>
<b>7.3. OUTPUT POWER INTO ANTENNA &amp; RF EXPOSURE VALUE AT DISTANCE 20CM ....</b>	<b>10</b>



## **1. Test Laboratory**

### **1.1. Testing Location**

Company Name: CTTL(Shouxiang)  
Address: No. 51 Shouxiang Science Building, Xueyuan Road, Haidian District,  
Beijing, P. R. China100191  
Postal Code: 100191  
Telephone: 00861062304633  
Fax: 00861062304793

### **1.2. Testing Environment**

Normal Temperature: 15-35°C  
Relative Humidity: 20-75%

### **1.3. Project data**

Project Leader: Lin Hao  
Testing Start Date: 2021-7-8  
Testing End Date: 2021-7-8

### **1.4. Signature**

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Lin Hao

(Prepared this test report)

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Qi Dianyuan

(Reviewed this test report)

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Lu Bingsong

Deputy Director of the laboratory  
(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

Company Name:	Samsung Electronics Co., Ltd.
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### **2.2. Manufacturer Information**

Company Name:	Samsung Electronics Co., Ltd.
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Fax:	/



### **3. Equipment Under Test (EUT) and Ancillary Equipment (AE)**

#### **3.1. About EUT**

Description	Notebook PC
Model name	XE315XDA
Operation mode	UMTS FDD 1/2/4/5/8, BT, Wi-Fi2.4/5G LTE Band 1/2/3/4/5/7/8/12/13/20/28/30/38/40/41/66

#### **3.2. Internal Identification of EUT**

EUT ID*	IMEI	HW Version	SW Version
EUT1	/	REV1.0	Chrome

\*EUT ID: is used to identify the test sample in the lab internally.

#### **3.3. Internal Identification of AE**

AE ID*	Description	SN
AE1	/	/

\*AE ID: is used to identify the test sample in the lab internally.

## 4. Reference Documents

### 4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

**ANSI C95.1–1999:** IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

**447498 D01 General RF Exposure Guidance v06:** Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies

**Canadian RSS-102:** standard for uncontrolled environment requires the RF-exposure value in W/m<sup>2</sup> unit, therefore the MPE limit value determined in mW/cm<sup>2</sup> unit, should be multiplied by 10 to have the required unit. The MPE limits are the same like on FCC § 1.1301 at table 1.

## 5. RF Exposure Limit

### Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	<b>(100)*</b>	30
1.34-30	824/f	2.19/f	<b>(180/f<sup>2</sup>)*</b>	30
30-300	27.5	0.073	<b>0.2</b>	30
300-1500	--	--	<b>f/1500</b>	30
1500-100,000	--	--	<b>1.0</b>	30

f = frequency in MHz \*Plane-wave equivalent power density

$$\text{Friis transmission formula: } P_d = \frac{P_{out} * G}{4 * \pi * r^2}$$

where

$P_d$  = power density (mW/cm<sup>2</sup>)

$P_{out}$  = output power to antenna (mW)

G = gain of antenna (linear scale)

r = distance between antenna and observation point (cm)



## 6. 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.

## 7. Test Results

### 7.1. The maximum antenna gain

The maximum gain for each frequency band is:

Frequency band	Antenna gain (dBi)
WCDMA1900	-0.01
WCDMA1700	-0.14
WCDMA850	-0.7
LTE Band2	-0.01
LTE Band4	-0.14
LTE Band5	-0.7
LTE Band7	-0.82
LTE Band12	0.63
LTE Band13	1.38
LTE Band30	-2.81
LTE Band38	-0.82
LTE Band41	-0.82
LTE Band66	-0.61



**7.2. The maximum rated power limits**

Maximum peak output power for antenna:

Frequency band	Maximum Rated Power (dBm)
WCDMA1900	24.5
WCDMA1700	24.5
WCDMA850	24.5
LTE Band2	24
LTE Band4	24
LTE Band5	24
LTE Band7	24
LTE Band12	24
LTE Band13	24
LTE Band30	24
LTE Band38	24
LTE Band41	24
LTE Band66	24

### 7.3. Output Power Into Antenna & RF Exposure value at distance 20cm

The worst cases conducted output power for every frequency band is:

Frequency band	Maximum Rated Power (dBm)	Maximum Rated Power (mW)	Antenna gain (dbi)	Antenna gain	d (cm)	Calculation (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Calculation
WCDMA B2	24.5	281.838	-0.01	1.0	20	0.056	1.000	PASS
WCDMA B4	24.5	281.838	-0.14	1.0	20	0.054	1.000	PASS
WCDMA B5	24.5	281.838	-0.7	0.9	20	0.048	0.558	PASS
LTE B2	24	251.189	-0.01	1.0	20	0.050	1.000	PASS
LTE B4	24	251.189	-0.14	1.0	20	0.048	1.000	PASS
LTE B5	24	251.189	-0.7	0.9	20	0.043	0.558	PASS
LTE B7	24	251.189	-0.82	0.8	20	0.041	1.000	PASS
LTE B12	24	251.189	0.63	1.2	20	0.058	0.472	PASS
LTE B13	24	251.189	1.38	1.4	20	0.069	0.521	PASS
LTE B30	24	251.189	-2.81	0.5	20	0.026	1.000	PASS
LTE B38	24	251.189	-0.82	0.8	20	0.041	1.000	PASS
LTE B41	24	251.189	-0.82	0.8	20	0.041	1.000	PASS
LTE B66	24	251.189	-0.61	0.9	20	0.043	1.000	PASS

According to above test result, the device complies with the exposure requirements.

**\*\*\*END OF REPORT\*\*\***