



# FCC RF Test Report

APPLICANT : Lenovo(Shanghai) Electronics Technology Co., Ltd.  
EQUIPMENT : Portable Tablet Computer  
BRAND NAME : Lenovo  
MODEL NAME : Lenovo TB-8506FS  
FCC ID : O57TB8506FS  
STANDARD : FCC Part 15 Subpart C § 15.247  
CLASSIFICATION : (DTS) Digital Transmission System

This is a data re-used report which is only valid together with the original test report. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.

Jason Jia

Reviewed by: Jason Jia / Supervisor

Alex Wang

Approved by: Alex Wang / Manager



**Sporton International (Kunshan) Inc.**

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## REVISION HISTORY

| REPORT NO.   | VERSION | DESCRIPTION             | ISSUED DATE   |
|--------------|---------|-------------------------|---------------|
| FR120606-04C | Rev. 01 | Initial issue of report | Apr. 19, 2021 |
|              |         |                         |               |
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# 1 General Description

## 1.1 Applicant

Lenovo(Shanghai) Electronics Technology Co., Ltd.

Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone

## 1.2 Manufacturer

Lenovo PC HK Limited

23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong, P.R.China

## 1.3 Product Feature of Equipment Under Test

| Product Feature                 |                                                                                                                                                         |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment                       | Portable Tablet Computer                                                                                                                                |
| Brand Name                      | Lenovo                                                                                                                                                  |
| Model Name                      | Lenovo TB-8506FS                                                                                                                                        |
| FCC ID                          | O57TB8506FS                                                                                                                                             |
| EUT supports Radios application | WLAN 2.4GHz 802.11b/g/n HT20/HT40<br>WLAN 5GHz 802.11a/n HT20/HT40<br>WLAN 5GHz 802.11ac VHT20/VHT40/VHT80<br>Bluetooth BR/EDR/LE<br>FM Receiver / GNSS |
| HW Version                      | Lenovo TB-8506FS                                                                                                                                        |
| SW Version                      | Lenovo TB-8506FS_RF01_210305                                                                                                                            |
| EUT Stage                       | Identical Prototype                                                                                                                                     |

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

## 1.4 Product Specification of Equipment Under Test

| Standards-related Product Specification |                                                                                        |
|-----------------------------------------|----------------------------------------------------------------------------------------|
| Tx/Rx Channel Frequency Range           | 2412 MHz ~ 2462 MHz                                                                    |
| Antenna Type / Gain                     | IFA Antenna with gain -5.54 dBi                                                        |
| Type of Modulation                      | 802.11b : DSSS (DBPSK / DQPSK / CCK)<br>802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) |



## 1.5 Modification of EUT

No modifications are made to the EUT during all test items.

## 1.6 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

|                           |                                                                                                                                                                          |                            |                                           |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------------|
| <b>Test Firm</b>          | Sporton International (Kunshan) Inc.                                                                                                                                     |                            |                                           |
| <b>Test Site Location</b> | No. 1098, Pengxi North Road, Kunshan Economic Development Zone<br>Jiangsu Province 215300 People's Republic of China<br>TEL : +86-512-57900158<br>FAX : +86-512-57900958 |                            |                                           |
| <b>Test Site No.</b>      | <b>Sporton Site No.</b>                                                                                                                                                  | <b>FCC Designation No.</b> | <b>FCC Test Firm<br/>Registration No.</b> |
|                           | 03CH06-KS                                                                                                                                                                | CN1257                     | 314309                                    |

## 1.7 Test Software

| Item | Site      | Manufacture | Name | Version       |
|------|-----------|-------------|------|---------------|
| 1.   | 03CH06-KS | AUDIX       | E3   | 6.2009-8-24al |



## 1.8 Re-use of Measured Data

### 1.8.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: Lenovo TB-8506FS, FCC ID: O57TB8506FS) is electrically identical to the reference device (Model: Lenovo TB-8506X, FCC ID: O57TB8506X) for the portions of the circuitry corresponding to the data being re-used, as treated by KDB Publication 484596 D01.

### 1.8.2 Difference Section

For details concerning the similarity with respect to component placement, mechanical/electrical design etc., please refer to the Product Equality Declaration.

The re-used RF data includes the following bands provided in Appendix B (Sporton RF Report No. FR120606-01C for the reference device Model: Lenovo TB-8506X, FCC ID: O57TB8506X).

### 1.8.3 Reference detail Section:

| Equipment Class | Reference FCC ID | Folder Test           | Report Title/Section    |
|-----------------|------------------|-----------------------|-------------------------|
| DSS (BR/EDR)    | O57TB8506X       | Part15C(FR120606-01A) | All sections applicable |
| DTS (BLE)       | O57TB8506X       | Part15C(FR120606-01B) | All sections applicable |
| DTS (WLAN)      | O57TB8506X       | Part15C(FR120606-01C) | All sections applicable |

### 1.8.4 Spot Check Verification Data Section

In order to confirm hardware similarity of the subject device with the reference device, spot check measurements were performed on the subject device for the following test items, the test result were consistent with FCC ID: O57TB8506X.

Assertions concerning the similarity of these devices are based on representations by the applicant. The applicant accepts full responsibility for the validity of the similarity claim, and for the determination that verification test data are sufficient to support it.

| Test Item                           | Mode              | O57TB8506X Worst Result | O57TB8506FS Worst Result | Difference (dB) |
|-------------------------------------|-------------------|-------------------------|--------------------------|-----------------|
| Radiated Spurious Emission (dBuV/m) | BT BR/EDR_Tx_Ch00 | 56.03                   | 55.92                    | 0.11            |
|                                     | BLE 4.1 _Tx_Ch39  | 46.24                   | 45.61                    | 0.63            |
|                                     | BLE 5.0 _Tx_Ch39  | 47.1                    | 46.36                    | 0.74            |
|                                     | 11n HT20_Tx_Ch01  | 50.94                   | 50.45                    | 0.49            |



## 2 List of Measuring Equipment

| Instrument                | Manufacturer | Model No.              | Serial No. | Characteristics      | Calibration Date | Test Date     | Due Date      | Remark                |
|---------------------------|--------------|------------------------|------------|----------------------|------------------|---------------|---------------|-----------------------|
| EMI Test Receiver         | Keysight     | N9038A                 | MY56400004 | 3Hz~8.5GHz;Max 30dBm | Oct. 17, 2020    | Mar. 19, 2021 | Oct. 16, 2021 | Radiation (03CH06-KS) |
| EXA Spectrum Analyzer     | Keysight     | N9010A                 | MY55150208 | 10Hz~44GHz           | Apr. 14, 2020    | Mar. 19, 2021 | Apr. 13, 2021 | Radiation (03CH06-KS) |
| Loop Antenna              | R&S          | HFH2-Z2                | 100321     | 9kHz~30MHz           | Nov. 01, 2020    | Mar. 19, 2021 | Oct. 31, 2021 | Radiation (03CH06-KS) |
| Bilog Antenna             | TeseQ        | CBL6111D               | 49921      | 30MHz~1GHz           | May 29, 2020     | Mar. 19, 2021 | May 28, 2021  | Radiation (03CH06-KS) |
| Double Ridge Horn Antenna | ETS-Lindgren | 3117                   | 00218652   | 1GHz~18GHz           | Apr. 27, 2020    | Mar. 19, 2021 | Apr. 26, 2021 | Radiation (03CH06-KS) |
| SHF-EHF Horn              | Com-power    | AH-840                 | 101115     | 18GHz~40GHz          | Nov. 10, 2020    | Mar. 19, 2021 | Nov. 09, 2021 | Radiation (03CH06-KS) |
| Amplifier                 | SONOMA       | 310N                   | 187289     | 9KHz ~1GHZ           | Apr. 14, 2020    | Mar. 19, 2021 | Apr. 13, 2021 | Radiation (03CH06-KS) |
| Amplifier                 | MITEQ        | EM18G40GGA             | 060728     | 18~40GHz             | Jan. 06, 2021    | Mar. 19, 2021 | Jan. 05, 2022 | Radiation (03CH06-KS) |
| high gain Amplifier       | MITEQ        | AMF-7D-00101800-30-10P | 2025788    | 1Ghz~18Ghz           | Jan. 06, 2021    | Mar. 19, 2021 | Jan. 05, 2022 | Radiation (03CH06-KS) |
| Amplifier                 | Keysight     | 83017A                 | MY53270203 | 500MHz~26.5GHz       | Apr. 15, 2020    | Mar. 19, 2021 | Apr. 14, 2021 | Radiation (03CH06-KS) |
| AC Power Source           | Chroma       | 61601                  | F104090004 | N/A                  | NCR              | Mar. 19, 2021 | NCR           | Radiation (03CH06-KS) |
| Turn Table                | ChamPro      | EM 1000-T              | 060762-T   | 0~360 degree         | NCR              | Mar. 19, 2021 | NCR           | Radiation (03CH06-KS) |
| Antenna Mast              | ChamPro      | EM 1000-A              | 060762-A   | 1 m~4 m              | NCR              | Mar. 19, 2021 | NCR           | Radiation (03CH06-KS) |

NCR: No Calibration Required



### 3 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage  $K=2$  to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

#### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 5.0dB |
|-------------------------------------------------------------------------|-------|

#### Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 5.0dB |
|-------------------------------------------------------------------------|-------|

#### Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 5.1dB |
|-------------------------------------------------------------------------|-------|





## **Appendix B. Reference Report**

Please refer to Sporton report number FR120606-01C which is issued separately.