

Spot Check Evaluation

APPLICANT : Lenovo (Shanghai) Electronics Technology Co., Ltd.
EQUIPMENT : Portable Tablet Computer
BRAND NAME : Lenovo
MODEL NAME : TB360ZJK
FCC ID : O57TB360ZJK
STANDARD : 47 CFR Part 2, 22(H), 27(M), 90(S)
47 CFR Part 15 Subpart C §15.247
47 CFR Part 15 Subpart E §15.407

We, Sporton International Inc. (Kunshan), 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 Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia



Sporton International Inc. (Kunshan)

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People's Republic of China**



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
362005	Rev. 01	Initial issue of report	Jul. 19, 2023

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty"

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



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, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Portable Tablet Computer
Brand Name	Lenovo
Model Name	TB360ZJK
FCC ID	O57TB360ZJK
IMEI Code	Conducted: 869917060004897 Radiation: 869917060004491
HW Version	Lenovo Tablet TB360ZJK
SW Version	TB360ZJK_RF01_230610
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 Modification of EUT

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

1.5 Testing Site

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

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH04-KS TH01-KS	CN1257	314309

1.6 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24al

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC KDB 484596 D01 Referencing Test Data v01
- ♦ 47 CFR Part 2, 22(H), 27(M), 90(S)
- ♦ 47 CFR Part 15 Subpart C §15.247
- ♦ 47 CFR Part 15 Subpart E §15.407
- ♦ ANSI C63.10-2013
- ♦ ANSI C63.26-2015

2 Re-use of Measured Data

2.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: TB360ZJK, FCC ID: O57TB360ZJK) is electrically identical to the reference device (Model: TB360ZU, FCC ID: O57TB360ZU) and (Model: TB360ZJ, FCC ID: O57TB360ZJ) for the portions of the circuitry corresponding to the data being re-used. Based on their similarity, the FCC Part 15C (equipment class: DTS, DSS) and FCC Part 15E (equipment class: NII) and FCC Part 22, 27, 90 (equipment class: TNB) reuse the original model's result and do spot-check, following the FCC KDB 484596 D01 Referencing Test Data v01.

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID: O57TB360ZJK .

2.2 Model Difference Information

The **main** difference between FCC ID: O57TB360ZU and FCC ID: O57TB360ZJK is as below:

- Remove GSM850/900/1800/1900, WCDMA II/IV/VI/XIX, LTE B2/4/7/13/19/20/25/32/34/38/39/40/66 and 5G NR n1/n5/n7/n8/n20/n38/n40/n66/n71/n79.
- Add LTE B11.

The **main** difference between FCC ID: O57TB360ZJ and FCC ID: O57TB360ZJK is as below:

- Add LTE B12, 5G NR n41.

Other differences and all the details of similarity and difference can be found in the confidential documents (TB360ZJK_Operational Description of Product Equality Declaration).



2.3 Reference detail Section:

Rule Part	Equipment Class	Frequency Band (MHz)	Reference FCC ID (Parent)	Type Grant/ Permissive Change	Reference Title	FCC ID (Variant)	Report Title/Section
15C	DSS (BR/EDR)	2400~2483.5	O57TB360ZU	Original Grant	FR311926A	O57TB360ZJK	All sections applicable
	DTS (BLE)	2400~2483.5	O57TB360ZU	Original Grant	FR311926B	O57TB360ZJK	All sections applicable
	DTS (WLAN)	2400~2483.5	O57TB360ZU	Original Grant	FR311926C	O57TB360ZJK	All sections applicable
15E	U-NII	5180~5240	O57TB360ZU	Original Grant	FR311926D	O57TB360ZJK	All sections applicable
		5260~5320	O57TB360ZU	Original Grant	FR311926D	O57TB360ZJK	All sections applicable
		5500~5720	O57TB360ZU	Original Grant	FR311926D	O57TB360ZJK	All sections applicable
		5745~5825	O57TB360ZU	Original Grant	FR311926D	O57TB360ZJK	All sections applicable
		5260~5320 5500~5720	O57TB360ZU	Original Grant	FZ311926	O57TB360ZJK	All sections applicable
22, 27, 90	TNB (WCDMA)	Band V	O57TB360ZU	Original Grant	FG311926A	O57TB360ZJK	All sections applicable
	TNB (LTE)	B5/26	O57TB360ZU	Original Grant	FG311926B	O57TB360ZJK	All sections applicable
	TNB (LTE)	B41	O57TB360ZJ	Original Grant	FG312017A	O57TB360ZJK	All sections applicable
	TNB (LTE)	B26 (90S)	O57TB360ZU	Original Grant	FG311926D	O57TB360ZJK	All sections applicable

2.4 Spot Check Verification Data Section

Conducted power test and radiated spurious emission test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model.

All test procedures follow the related section of parent report.

Summary for power and RSE spot check for each rule entry and technology is listed as below:

Test Item	Mode	O57TB360ZU Parent Worst mode Test Result	O57TB360ZJK Variant Check Test Result	Difference (dB)
Conducted Power (dBm)	BT BR/EDR	5.27	4.78	0.49
	BLE 1M	5.19	4.71	0.48
	BLE 2M	5.47	4.98	0.49
	2.4G 11b	19.53	19.40	0.13
	2.4G 11g	20.54	20.21	0.33
	2.4G 11n20	18.51	18.48	0.03
	2.4G 11n40	18.75	18.30	0.45
	5G 11a UNII-1	15.76	15.27	0.49
	5G 11a UNII-2A	15.76	15.39	0.37
	5G 11a UNII-2C	15.86	15.44	0.42
	5G 11a UNII-3	15.59	15.30	0.29
	5G 11n20 UNII-1	14.53	14.04	0.49
	5G 11n20 UNII-2A	14.43	14.26	0.17
	5G 11n20 UNII-2C	14.52	14.13	0.39
	5G 11n20 UNII-3	14.30	14.15	0.15
	5G 11n40 UNII-1	15.47	15.02	0.45
	5G 11n40 UNII-2A	15.53	15.43	0.10
	5G 11n40 UNII-2C	15.97	15.48	0.49
	5G 11n40 UNII-3	15.27	14.81	0.46
	5G 11AC20 UNII-1	13.73	13.34	0.39
	5G 11AC20 UNII-2A	13.86	13.79	0.07
	5G 11AC20 UNII-2C	13.87	13.46	0.41
	5G 11AC20 UNII-3	13.65	13.33	0.32
	5G 11AC40 UNII-1	12.44	11.99	0.45
	5G 11AC40 UNII-2A	12.40	12.30	0.10
	5G 11AC40 UNII-2C	12.92	12.45	0.47
	5G 11AC40 UNII-3	12.24	11.96	0.28
	5G 11AC80 UNII-1	12.21	11.88	0.33
	5G 11AC80 UNII-2A	11.84	11.74	0.1
	5G 11AC80 UNII-2C	12.69	12.25	0.44
	5G 11AC80 UNII-3	11.83	11.61	0.22
	WCDMA Band V	24.32	23.98	0.34
	LTE Band 5	23.94	23.57	0.37
	LTE Band 26 (22H)	24.10	23.50	0.6
	LTE Band 26 (90S)	24.01	23.48	0.53
Radiated Spurious Emission (dBm)	WCDMA Band V	-47.26	-42.65	-4.61
	LTE Band 26 (22H)	-33.98	-35.80	1.82



Test Item	Mode	O57TB360ZJ Parent Worst mode Test Result	O57TB360ZJK Variant Check Test Result	Difference (dB)
Conducted Power (dBm)	LTE Band 41	25.88	25.48	0.40
Radiated Spurious Emission (dBm)	LTE Band 41	-26.69	-25.95	-0.74

Conclusion:

Radiated spurious emission test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model.

Based on the spot check test result, the test data from the original model is representative for the variant model. The power level and RSE spot check are shown within expected level compliant to limit line.

We are using power and ERP/EIRP measurements from the original parent model reports to list on the grant.

The same DFS detection mechanism/software is used in the variant. Hence, there is no spot check data for DFS hand-shaking mechanism.

We confirm that the test data reuse policy of FCC KDB 484596 D01 Referencing Test Data v01 has been followed and the test data as referenced from the parent model report represents compliance with new FCC ID.



3 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 12, 2022	Jul. 07, 2023	Oct. 11, 2023	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 05, 2023	Jul. 07, 2023	Jan. 04, 2024	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 05, 2023	Jul. 07, 2023	Jan. 04, 2024	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Jul. 07, 2023	NCR	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz~44G, MAX 30dB	Oct. 12, 2022	Jul. 04, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 22, 2022	Jul. 04, 2023	Sep. 21, 2023	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz~1GHz	Apr. 09, 2023	Jul. 04, 2023	Apr. 08, 2024	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Oct. 16, 2022	Jul. 04, 2023	Oct. 15, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 08, 2023	Jul. 04, 2023	Jan. 07, 2024	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	380827	9KHz~1GHz	Jul. 11, 2022	Jul. 04, 2023	Jul. 10, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2023	Jul. 04, 2023	Jan. 04, 2024	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz~18Ghz	Oct. 12, 2022	Jul. 04, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz~18Ghz	Oct. 12, 2022	Jul. 04, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jul. 04, 2023	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jul. 04, 2023	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jul. 04, 2023	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required.

4 Measurement Uncertainty

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 Conducted Measurement

Test Item	Uncertainty
Conducted Power	± 0.46 dB

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	3.82dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	3.56dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	3.54dB
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-THE END-