Spot Check Evaluation

APPLICANT	:	**Lenovo (Shanghai) Electronics Technology Co., Ltd.**
EQUIPMENT	:	**Portable Tablet Computer**
BRAND NAME	:	**Lenovo**
MODEL NAME	:	**TB328XU**
FCC ID	:	**O57TB328XU**
STANDARD	:	**47 CFR Part 15 Subpart C §15.209** **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

Reviewed by: Jason Jia / Supervisor

Alex Wang

Approved by: Alex Wang / Manager

ACCREDITED Cert #5145.02

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1D0313	Rev. 01	Initial issue of report	Jan. 26, 2022

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	TB328XU
FCC ID	O57TB328XU
HW Version	Lenovo Tablet TB328XU
SW Version	TB328XU_RF01_220118
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.

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: TB328XU, FCC ID: O57TB328XU) is electrically identical to the reference device (Model: TB328FU, FCC ID: O57TB328FU) 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) reuse the original model's result and do spot-check, following the FCC KDB 484596 D01 v01.

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID: O57TB328XU .

2.2 Model Difference Information

The **main** difference between FCC ID: O57TB328FU and FCC ID: O57TB328XU is as below:

- Add WWAN Band.

Other differences and all the details of similarity and difference can be found in the confidential documents (TB328XU_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 Filling (Variant)	Report Title/Section
15C	DSS (BR/EDR)	2400~2483.5	O57TB328FU	Original Grant	FR1D0313-01A	O57TB328XU	All sections applicable
	DTS (BLE)	2400~2483.5	O57TB328FU	Original Grant	FR1D0313-01B	O57TB328XU	All sections applicable
	DTS (WLAN)	2400~2483.5	O57TB328FU	Original Grant	FR1D0313-01C	O57TB328XU	All sections applicable
15E	U-NII-1	5150~5250	O57TB328FU	Original Grant	FR1D0313-01D	O57TB328XU	All sections applicable
	U-NII-2A	5250~5350	O57TB328FU	Original Grant	FR1D0313-01D	O57TB328XU	All sections applicable
	U-NII-2C	5470~5725	O57TB328FU	Original Grant	FR1D0313-01D	O57TB328XU	All sections applicable
	U-NII-3	5725~5850	O57TB328FU	Original Grant	FR1D0313-01E	O57TB328XU	All sections applicable
	DFS	5250~5350 5470~5725	O57TB328FU	Original Grant	FZ1D0313-01	O57TB328XU	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

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

Test Item	Mode	O57TB328FU Parent Worst Result	O57TB328XU Variant Check Result	Difference (dB)
Conducted Power (dBm)	BT BR/EDR	11.30	10.89	0.41
	BT-LE-1M	8.00	7.41	0.59
	BT-LE-2M	7.98	7.38	0.6
	802.11b	22.23	22.11	0.12
	802.11g	23.85	23.69	0.16
	11n HT20	23.58	23.42	0.16
	11n HT40	22.17	22.02	0.15
	11a, 5.2GHz	16.12	16.05	0.07
	11n HT20, 5.2GHz	15.54	15.41	0.13
	11n HT40, 5.2GHz	13.18	13.05	0.13
	11ac VHT20, 5.2GHz	14.68	14.45	0.23
	11ac VHT40, 5.2GHz	13.01	12.89	0.12
	11ac VHT80, 5.2GHz	12.20	12.09	0.11
	11a, 5.3GHz	16.36	16.28	0.08
	11n HT20, 5.3GHz	15.76	15.72	0.04
	11n HT40, 5.3GHz	13.23	13.11	0.12
	11ac VHT20, 5.3GHz	14.96	14.82	0.14
	11ac VHT40, 5.3GHz	12.97	12.83	0.14
	11ac VHT80, 5.3GHz	12.56	12.41	0.15
	11a, 5.5GHz	16.65	16.52	0.13
	11n HT20, 5.5GHz	16	15.85	0.15
	11n HT40, 5.5GHz	13.84	13.69	0.15
	11ac VHT20, 5.5GHz	15.23	15.1	0.13
	11ac VHT40, 5.5GHz	13.28	13.17	0.11
	11ac VHT80, 5.5GHz	12.76	12.62	0.14
	11a, 5.8GHz	16.93	16.82	0.11
	11n HT20, 5.8GHz	16.08	15.85	0.23
	11n HT40, 5.8GHz	13.66	13.52	0.14
	11ac VHT20, 5.8GHz	15.29	15.11	0.18
	11ac VHT40, 5.8GHz	13.08	12.99	0.09
	11ac VHT80, 5.8GHz	11.88	11.75	0.13

Test Item	Mode	O57TB328FU Parent Worst Result	O57TB328XU Variant Check Result	Difference (dB)
Radiated Spurious Emission (dBuV/m)	BT(3M)_Tx_Ch78	56.06	58.62	2.56
	BLE_Tx_Ch39	49.33	50.99	1.66
	11b_Tx_Ch01	50.82	50.59	0.23
	11a(n40)_Tx_Ch38	50.99	50.39	0.6
	11a_Tx_Ch165	56.96	57.11	0.15

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 measurements from the original parent model reports to list on the grant.

The same DFS detection is used in the variant. Hence, there is no spot check data for DFS

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. 14, 2021	Jan. 18, 2022	Oct. 13, 2022	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 06, 2022	Jan. 18, 2022	Jan. 05, 2023	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 06, 2022	Jan. 18, 2022	Jan. 05, 2023	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz;Max 30dBm	Oct. 16, 2021	Jan. 06, 2022~ Jan. 11, 2022	Oct. 15, 2022	Radiation (03CH06-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz-44GHz	Apr. 12, 2021	Jan. 06, 2022~ Jan. 11, 2022	Apr. 11, 2022	Radiation (03CH06-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Jan. 06, 2022~ Jan. 11, 2022	Oct. 29, 2022	Radiation (03CH06-KS)
Bilog Antenna	TeseQ	CBL6111D	49921	30MHz-1GHz	May 27, 2021	Jan. 06, 2022~ Jan. 11, 2022	May 26, 2022	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 25, 2021	Jan. 06, 2022~ Jan. 11, 2022	Apr. 24, 2022	Radiation (03CH06-KS)
SHF-EHF Horn	Com-power	AH-840	101093	18GHz~40GHz	Jan. 05, 2022	Jan. 06, 2022~ Jan. 11, 2022	Jan. 04, 2023	Radiation (03CH06-KS)
Amplifier	SONOMA	310N	187289	9KHz ~1GHZ	Apr. 12, 2021	Jan. 06, 2022~ Jan. 11, 2022	Apr. 11, 2022	Radiation (03CH06-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2022	Jan. 06, 2022~ Jan. 11, 2022	Jan. 04, 2023	Radiation (03CH06-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1Ghz-18Ghz	Jan. 05, 2022	Jan. 06, 2022~ Jan. 11, 2022	Jan. 04, 2023	Radiation (03CH06-KS)
Amplifier	Keysight	83017A	MY53270203	500MHz~26.5GHz	Apr. 13, 2021	Jan. 06, 2022~ Jan. 11, 2022	Apr. 12, 2022	Radiation (03CH06-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 06, 2022~ Jan. 11, 2022	NCR	Radiation (03CH06-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 06, 2022~ Jan. 11, 2022	NCR	Radiation (03CH06-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 06, 2022~ Jan. 11, 2022	NCR	Radiation (03CH06-KS)

NCR: No Calibration Required.

-THE END-