FCC RF EXPOSURE REPORT

For

BE16000 Whole Home Mesh Wi-Fi 7 System

MODEL NUMBER: Deco BE79, Deco BE16000

REPORT NUMBER: 4790853724-RF-3

ISSUE DATE: July 17, 2023

FCC ID: 2AXJ4BE79

Prepared for

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Prepared by

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The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products.

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	July 4, 2023	Initial Issue	
V1	July 17, 20233	Added WIFI 5G UNII-2A and UNII-2C and WIFI 6E	Denny Huang

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	TP-Link Corporation Limited
Address:	Room 901, 9/F. , New East Ocean Centre, 9 Science Museum Road, Tsim Sha Tsui, Kowloon, Hong Kong

Manufacturer Information

Company Name:	TP-Link Corporation Limited
Address:	Room 901, 9/F. , New East Ocean Centre, 9 Science Museum Road, Tsim Sha Tsui, Kowloon, Hong Kong

EUT Information

EUT Name:	BE16000 Whole Home Mesh Wi-Fi 7 System
Model:	Deco BE79, Deco BE16000
Sample Received Date:	Please refer to clause 5.1. DESCRIPTION OF EUT
Sample ID:	June 5, 2023
Date of Tested:	June 24, 2023 to July 16, 2023

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC 47CFR§2.1091	**PASS**
KDB-447498 D01 V06	**PASS**

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Checked By:

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Senior Project Engineer

Approved By:

Stephen Guo

Operations Manager

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 and KDB 447498 D01 General RF Exposure Guidance v06.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011

Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OFS.

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4. DESCRIPTION OF EUT

EUT Name:		BE16000 Whole Home Mesh Wi-Fi 7 System
Model:		Deco BE79, Deco BE16000
Model Difference:		Deco BE16000 have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction with Deco BE79.The difference lies only the model number and Deco BE79 one more 10 GHz Combo, all the RF circuit, parameter, antennas are the same.
Product Description (2.4G WLAN)	Frequency Range:	2412 MHz to 2462 MHz
	Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g/n: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11ax: OFDMA (1024-QAM,64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11be: OFDMA (4096QAM, 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
	Radio Technology:	IEEE802.11b/g/n HT20/n HT40/n VHT20/n VHT40/ax HE20/ax HE40/be EHT20/be EHT40
Product Description (5G RLAN)	Frequency Range:	U-NII-1 Band: 5180 MHz to 5240 MHz U-NII-2A Band: 5260 MHz to 5320 MHz U-NII-2C Band: 5500 MHz to 5700 MHz U-NII-3 Band: 5745 MHz to 5825 MHz
	Type of Modulation:	IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11be: OFDMA (4096QAM, 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
	Radio Technology:	IEEE802.11a/n HT20/n HT40/ ac VHT20/ac VHT40/ac VHT80/ac VHT160/ ax HE20/ax HE40/ax HE80/ax HE160/ be EHT20/be EHT40/be EHT80/be EHT160/be EHT240
Product Description (6G RLAN)	Operation Frequency:	UNII-5 Band: 6115 MHz ~ 6415 MHz UNII-7 Band: 6535 MHz ~ 6875 MHz UNII-8 Band: 6895 MHz ~ 7095 MHz
	Type of Modulation:	IEEE 802.11ax: OFDMA (BPSK, QPSK,16QAM,64QAM, 256QAM, 1024QAM) IEEE 802.11be: OFDMA (BPSK, QPSK,16QAM,64QAM, 256QAM, 1024QAM, 4096QAM)
	Radio Technology:	IEEE802.11ax HE20/ax HE40/ax HE80/ax HE160/ be EHT20/be EHT40/be EHT80/be EHT160/be EHT320
Normal Test Voltage:		DC 12 V via adapter

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5. REQUIREMENT

LIMIT AND CALCULATION METHOD

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

Limits for General Population/Uncontrolled Exposure

RF EXPOSURE LIMIT

Frequency Range (MHz)	E-field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (Minutes)
0.3 -- 1.34	614	1.63	(100)*	30
1.34 -- 30	824/f	2.19/f	($180/f^2$)*	30
30 -- 300	27.5	0.073	0.2	30
300 -- 1500	--	--	f/1500	30
1500 -- 100,000	--	--	1.0	30

CALCULATION METHOD

$S=PG/4\pi R^2$

Where:

S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

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CALCULATED RESULTS

Radio Frequency Radiation Exposure Evaluation

(Worst case)				
Operating Mode	Max. Tune up Power	Max. Directional Antenna Gain	Power density	Limit
	(dBm)	(dBi)	(mW/ cm^2)	
WIFI 2.4G	27.44	2	0.1749	1

(Worst case)				
Operating Mode	Max. Tune up Power	Max. Directional Antenna Gain	Power density	Limit
	(dBm)	(dBi)	(mW/ cm^2)	
WIFI 5G	27.34	3	0.2152	1

6 GHz WiFi (Worst case)				
Operating Mode	Max. Tune up Power	Max. Directional Antenna Gain	Power density	Limit
	(dBm)	(dBi)	(mW/ cm^2)	
WIFI 6G	25.43	3	0.1386	1

Note:
1. The calculated distance is 20 cm.
2. The power comes from test report 4790853724-RF-1/2/5.
3. 5 GHz WiFi + 2.4 GHz WiFi = 0.1749 + 0.2152 + 0.1386 = 0.5287 (mW/cm^2)
Therefor the maximum calculations of above situations are less than the “1” limit.

END OF REPORT

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