FCC RF EXPOSURE REPORT

FCC ID: 2AXJ4VX20

Project No.	:	2101C102A
Equipment	:	AX1800 Mesh Wi-Fi 6 System with Built-in Smart Speaker
Brand Name	:	tp-link
Test Model	:	Deco Voice X20
Series Model	:	N/A
Applicant	:	TP-Link Corporation Limited
Address	:	Room 901, 9/F. , New East Ocean Centre, 9 Science Museum Road, Tsim Sha Tsui, Kowloon, Hong Kong
Manufacturer	:	TP-Link Corporation Limited
Address	:	Room 901, 9/F. , New East Ocean Centre, 9 Science Museum Road, Tsim Sha Tsui, Kowloon, Hong Kong
Date of Receipt	:	Jan. 11, 2021 Jul. 29, 2021
Date of Test	:	Feb. 03, 2021 ~ Apr. 09, 2021
Issued Date	:	Aug. 24, 2021
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG2021020289
Standard(s)	:	FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091 FCC Title 47 Part 2.1091, OET Bulletin 65 Supplement C

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

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Approved by : Ethan Ma

ACCREDITED
TESTING CERT #5123.02

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Compared with original report(BTL-FCCP-5-2101C102), changed the BT antenna, which does not affect the test results. Other are kept the same.	Aug. 24, 2021

1. TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 3 Jinshagang 1st Rd. Shixia, Dalang Town, Dongguan City, Guangdong, People's Republic of China.
BTL's Test Firm Registration Number for FCC: 357015
BTL's Designation Number for FCC: CN1240

2. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi r^2} = \frac{EIRP}{4\pi r^2}$$

where:
S = power density
P = power input to the 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

Table for Filed Antenna:

For BT:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	tp-link	N/A	Dipole	I-PEX	0.96

Note:
The antenna gain is provided by the manufacturer.

For LE:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1	tp-link	N/A	Dipole	I-PEX	0.96

Note:
The antenna gain is provided by the manufacturer.

For 2.4GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	tp-link	N/A	Dipole	I-PEX	1.97
2	tp-link	N/A	Dipole	I-PEX	1.96

Note:
1) This EUT supports CDD, and all antenna gains are not equal, so Directional gain=10log[($10^{G1/20}$+$10^{G2/20}$+...$10^{GN/20}$)^2/N]dBi,
that is Directional gain=10log[($10^{1.97/20}$+$10^{19.96/20}$)^2/2]dBi =4.98.
2) The antenna gain is provided by the manufacturer.

For 5GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	tp-link	N/A	Dipole	I-PEX	0.82	UNII-1
2	tp-link	N/A	Dipole	I-PEX	0.85	UNII-1
1	tp-link	N/A	Dipole	I-PEX	0.86	UNII-3
2	tp-link	N/A	Dipole	I-PEX	0.94	UNII-3

Note:

1) This EUT supports CDD, and all antenna gains are not equal, so Directional gain=10log[$(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2$/N]dBi,
   For UNII-1: that is Directional gain=10log[$(10^{0.82/20}+10^{0.85/20})^2$/2]dBi =3.85.
   For UNII-3: that is Directional gain=10log[$(10^{0.86/20}+10^{0.94/20})^2$/2]dBi =3.91.
2) The antenna gain is provided by the manufacturer.

3. TEST RESULTS

For BT:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
0.96	1.2474	9.42	8.7498	0.00217	1	Complies

For LE:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
0.96	1.2474	9.55	9.0157	0.00224	1	Complies

For 2.4GHz:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
4.98	3.1477	27.77	598.4116	0.37493	1	Complies

For 5GHz UNII-1:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
3.85	2.4266	27.88	613.7620	0.29645	1	Complies

For 5GHz UNII-3:

Directional Gain (dBi)	Directional Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
3.91	2.4604	27.46	557.1857	0.27287	1	Complies

For the max simultaneous transmission MPE:

Power Density (S) (mW/cm^2)	Power Density (S) (mW/cm^2)	Power Density (S) (mW/cm^2)	Total	Limit of Power Density (S) (mW/cm^2)	Test Result
LE	2.4GHz	5GHz			
0.00224	0.37493	0.29645	0.67362	1	Complies

Note: The calculated distance is 20 cm.
Output power including tune up tolerance(tune up tolerance: 0.5 dBm).

End of Test Report