

RF Exposure Evaluation Report

Report Reference No......: **MTWC21100788-H**

FCC ID.....: **2A3I7-KJ600FK**

IC.....: **N/A**

Compiled by

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Representative Laboratory Name..: **Shenzhen Most Technology Service Co., Ltd.**

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Applicant's name.....: **GIGA CLOUD LOGISTICS (HONGKONG) LIMITED**

Address: Suite 2409, Everbright Centre 108 Gloucester Road, Wanchai
HONGKONG

Test specification/ Standard: **47 CFR Part 1.1307**

47 CFR Part 1.1310

KDB447498D01 General RF Exposure Guidance v06

TRF Originator.....: Shenzhen Most Technology Service Co., Ltd.

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Test item description: Air purifier

Trade Mark: N/A

Manufacturer: **Olansi Healthcare Co.ltd.**

Model/Type reference.....: KJ600FK09B

Listed Models: N/A

Modulation Type: CCK/DSSS/ OFDM

Operation Frequency.....: From 2412 - 2462MHz

Hardware Version.....: V1.1.0

Software Version: V3.1.1

Rating: AC 110~120V ;50Hz/60Hz

Result.....: **PASS**

TEST REPORT

Equipment under Test : Air purifier

Model /Type : KJ600FK09B

Listed Models : N/A

Applicant : **GIGA CLOUD LOGISTICS (HONGKONG) LIMITED**

Address : Suite 2409, Everbright Centre 108 Gloucester Road, Wanchai
HONGKONG

Manufacturer : **Olansi Healthcare Co.ltd.**

Address : No.1 Haiyi Street, Lanhe Town, Nansha district, Guangzhou.

Test Result:	PASS
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2021.11.02	Initial Issue	Alisa Luo

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

2.1.2 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
(B) Limits for General Population/Uncontrolled Exposure				
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

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$ Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.1.3 EUT RF Exposure

Antenna Gain: 3dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.4 in linear scale. Output Power Into Antenna & RF Exposure Evaluation Distance:

IEEE for 802.11b mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	11.421	11.421 ± 1	12.421	17.462
Middle(2437MHz)	12.228	12.228 ± 1	13.228	21.028
Highest(2462MHz)	12.179	12.179 ± 1	13.179	20.792

IEEE for 802.11g mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	8.209	8.209 ± 1	9.209	8.335
Middle(2437MHz)	10.181	10.181 ± 1	11.181	13.125
Highest(2462MHz)	8.516	8.516 ± 1	9.516	8.945

IEEE for 802.11n(HT20) mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	8.281	8.281 ± 1	9.281	8.474
Middle(2437MHz)	8.885	8.885 ± 1	9.885	9.738
Highest(2462MHz)	7.786	7.786 ± 1	8.786	7.561

Worst case: IEEE for 802.11b mode					
Channel	Maximum Peak Conducted Output Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Highest(2437MHz)	21.028	3	0.0084	1.0	Pass

Note: 1) Refer to report MTWC21100788 for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (21.028 * 2) / (4 * 3.1416 * 20^2) = 0.0084$

.....THE END OF REPORT.....