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RF Exposure Evaluation Report

Report No.: CQASZ20251202831E-03
Applicant: Shenzhen Shuying Technology Co., Ltd.
Address of Applicant: Room 01, 13th Floor, No. 9988 Shennan District, Shenzhen, China
Equipment Under Test (EUT):
EUT Name: wan AIChef ultra (Smart Microwave Oven)
Model No.: DW226-B, DW226-G
Test Model No.: DW226-B
Brand Name: N/A
FCC ID: 2BB9R-DW226
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt: 2025-12-08
Date of Test: 2025-12-08 to 2025-12-29
Date of Issue: 2026-4-8
Test Result: **PASS***

*In the configuration tested, the EUT complied with the standards specified above

Tested By: Lewis Zhou
(Lewis Zhou)

Reviewed By: Timo Lei
(Timo Lei)

Approved By: Jack Ai
(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20251202831E-03	Rev.01	Initial report	2026-4-8

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3 General Information

3.1 Client Information

Applicant:	Shenzhen Shuying Technology Co., Ltd.
Address of Applicant:	Room 01, 13th Floor, No. 9988 Shennan District, Shenzhen, China
Manufacturer:	Shenzhen Shuying Technology Co., Ltd.
Address of Manufacturer:	Room 01, 13th Floor, No. 9988 Shennan District, Shenzhen, China
Factory:	Jiangmen Jens Smart Appliances Co., Ltd.
Address of Factory:	No.88 Heshun Road Hechen Town Heshan City Jiangmen Guangdong Province China

3.2 General Description of EUT

Product Name:	wan AIChef ultra (Smart Microwave Oven)
Model No.:	DW226-B, DW226-G
Test Model No.:	DW226-B
Trade Mark:	N/A
Software Version:	5.10.14
Hardware Version:	3.0
EUT Power Supply:	Power supply AC 120V

3.3 General Description of NFC

Operation Frequency:	13.56MHz
Type of Modulation:	ASK
Number of Channel:	1 Channels
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	PCB antenna
Antenna Gain:	-0.58dBi

3.4 General Description of 2.4G WIFI Classic

Operation Frequency:	IEEE 802.11b/g/n(HT20)/ax(HE20): 2412MHz to 2462MHz IEEE 802.11n(HT40)/ax(HE40): 2422MHz to 2452MHz
Type of Modulation:	802.11b: DSSS(CCK/QPSK/BPSK) 802.11g: OFDM(BPSK/QPSK/16QAM/64QAM) 802.11n : OFDM (64QAM, 16QAM, QPSK, BPSK) 802.11ax(HE20 and HE40): OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	IEEE 802.11b/g/ax(HE20), IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40/ax HE40: 7 Channels
Channel Separation:	5MHz
Transfer Rate:	IEEE for 802.11b: 1Mbps/2Mbps/5.5Mbps/11Mbps IEEE for 802.11g : 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps IEEE for 802.11n(HT20) : 6.5Mbps/13Mbps/19.5Mbps/26Mbps/39Mbps/52Mbps/58.5Mbps/65Mbps IEEE for 802.11n(HT40) : 13.5Mbps/27Mbps/40.5Mbps/54Mbps/81Mbps/108Mbps/121.5Mbps/135Mbps IEEE for 802.11ax(HE20): 8.6Mbps/17.2Mbps/25.8Mbps/34.4Mbps/51.6Mbps/68.8Mbps/77.4Mbps /86.7Mbps/103.3Mbps/114.7Mbps/129.0Mbps/143.4Mbps IEEE for 802.11ax(HE40): 17.2Mbps/34.4Mbps/51.6Mbps/68.8Mbps/103.2Mbps/137.6Mbps/154.9Mbps /173.3Mbps/206.5Mbps/229.4Mbps/258.1Mbps/286.8Mbps
Sample Type:	☒ Mobile ☐ Portable
Antenna Type:	FPC antenna
Antenna Gain:	Ant1:4.56dBi Ant2:4.56dBi Ant1+Ant2:7.57dBi

3.5 General Description of 5G WIFI Classic

Operation Frequency:	IEEE 802.11a/n/ac/ax(20M): 5150MHz ~5250 MHz IEEE802.11n/ac/ax(40M): 5150MHz ~5250 MHz IEEE802.11ac/ax(80M): 5150MHz ~5250 MHz IEEE 802.11a/n/ac/ax(20M): 5725MHz ~5850 MHz IEEE802.11n/ac/ax(40M): 5725MHz ~5850 MHz IEEE802.11ac/ax(80M): 5725MHz ~5850 MHz
Channel Numbers:	IEEE 802.11a/n/ac(20M): 5150MHz ~5250MHz/ 4 channel IEEE 802.11n/ac(40M): 5150MHz ~5250MHz/ 2 channel IEEE 802.11n/ac(80M): 5150MHz ~5250MHz/ 1 channel IEEE 802.11a/n/ac(20M): 5250MHz ~5350MHz/ 4 channel IEEE 802.11n/ac(40M): 5250MHz ~5350MHz/ 2 channel

	IEEE 802.11n/ac(80M): 5250MHz ~5350MHz/ 1 channel IEEE 802.11a/n/ac/ax(20M): 5150MHz ~5250 MHz IEEE802.11n/ac/ax(40M): 5150MHz ~5250 MHz IEEE802.11ac/ax(80M): 5150MHz ~5250 MHz IEEE 802.11a/n/ac/ax(20M): 5725MHz ~5850 MHz IEEE802.11n/ac/ax(40M): 5725MHz ~5850 MHz IEEE802.11ac/ax(80M): 5725MHz ~5850 MHz
Type of Modulation:	IEEE for 802.11a/n/ac: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11ax:OFDMA(1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Sample Type:	☒ Mobile ☐ Portable
Test Software of EUT:	Serial
Antenna Type:	FPC antenna
Antenna gain:	Ant1:2.93dBi Ant2:2.93dBi Ant1+Ant2:5.94dBi
Cable loss:	1.0 dB

Note:

The above parameters will directly affect the test results. The information is provided by the applicant.

4 MPE Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 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.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.1.3 EUT RF Exposure

1) For 2.4G WIFI

Antenna Gain: 2.93dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.96 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

11G mode				
Test channel	AV Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	13.86	14±1	15	31.62
Middle(2437MHz)	13.84	14±1	15	31.62
Highest(2462MHz)	15.28	15.5±1	16.5	44.67

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
44.67	2.93	0.0174473362	1.0	PASS

Note: 1) Refer to report No. CQASZ20251202831E-01 for EUT test Conducted AV Output Power value.

2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (44.67 * 1.96) / (4 * 3.1416 * 20^2) = 0.0174473362$

2) For 5G WIFI Classic

Antenna Gain: 5.94dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 3.93 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

11AX20 MIMO mode				
Test channel	AV Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(5180MHz)	17.40	17.5±1	18.5	70.79
Middle(5200MHz)	16.59	17.0±1	18	63.10
Highest(5240MHz)	14.06	14.5±1	15.5	35.48

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
70.79	5.94	0.0014085180	1.0	PASS

Note: 1) Refer to report No. CQASZ20251202831E-02 for EUT test Max Conducted AV Output Power value.

2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (70.79 * 3.93) / (4 * 3.1416 * 20^2) = 0.0014085180$

3) For NFC

Antenna Gain: 0dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

ASK mode					
Test frequency	EIRP	EIRP	Tune up tolerance (dBm)	Maximum tune-up Power	
	(dBμV/m)	(dBm)		(dBm)	(mW)
13.56MHz	77.76	-17.4	-17±1	-16	0.03

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
0.03	0	0.0000049972	1.0	PASS

Note: 1) Refer to report No. CQASZ20251202831E-02 for EUT test Max EIRP value.

2) $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2) = (0.03 \cdot 1) / (4 \cdot 3.1416 \cdot 20^2) = 0.0000049972$

4) For Radar TX

$$EIRP = E_{Meas} + 20 \log(d_{Meas}) - 104.7$$

where

EIRP is the equivalent isotropically radiated power, in dBm
 E_{Meas} is the field strength of the emission at the measurement distance, in dB μ V/m
 d_{Meas} is the measurement distance, in m

Measurement Data

FMCW mode					
Test frequency	EIRP	EIRP	Tune up tolerance	Maximum tune-up Power	
	(dB μ V/m)	(dBm)		(dBm)	(mW)
24.125Hz	102.358	7.2	7.5 $\pm$ 1	8.5	7.08

The worst case:

Maximum tune-up Power (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
7.08	0.0014085180	1.0	PASS

Note: 1) Refer to report No. WT268500471 for EUT test Max EIRP value.

2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = 7.08 / (4 * 3.1416 * 20^2) = 0.0014085180$

Simultaneous transmission:

MPE ratios(NFC)+MPE ratios(2.4G WIFI)+MPE ratios(5G WIFI)+MPE ratios(Radar TX)

=0.0000049972 /1+0.0174473362/1+0.0014085180/1+0.0014085180 /1

=0.020269369 $\leq$ 1

*** END OF REPORT ***