



Maximum Permissible Exposure Evaluation

FCC ID: 2AOQ6-AX02

1. Client Information

Applicant	:	ChongQing Lavid Industrial Co., Ltd.
Address	:	No.2 Workshop, Electronic and Electrical Manufacturing Base, Union Community, Chenjiaba Street, Wanzhou District, Chongqing, China
Manufacturer	:	ChongQing Lavid Industrial Co., Ltd.
Address	:	No.2 Workshop, Electronic and Electrical Manufacturing Base, Union Community, Chenjiaba Street, Wanzhou District, Chongqing, China

2. General Description of EUT

EUT Name	:	WIFI6 AX
Models No.	:	AX02, AX03, AX08, AX09, AX12, AX13, AX15, AX16
Model Difference	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is Appearance.
Sample ID	:	HC-C-202405-0242-01-01-1#&HC-C-202405-0242-01-01-2#
Product Description	:	Operation Frequency: 802.11b/g/n(HT20): 2412MHz~2462MHz 802.11ax(HE20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz 802.11ax(HE40): 2422MHz~2452MHz U-NII-1: 5180MHz~5240MHz U-NII-3: 5745MHz~5825MHz
Power Rating	:	Adapter(LV-PW02) INPUT: 100-240V~50/60Hz 0.3A OUTPUT: 12V, 1A
Software Version	:	210
Hardware Version	:	V1.1
Connecting I/O Port(S)	:	Please refer to the User's Manual
Remark	:	the MPE report used the EUT-2(HC-C-202405-0242-01-01-2#).

MPE Calculations for FCC

1. Antenna Gain:

Antenna	Brand	Model Name	Type	Antenna Gain(dBi)	
				Ant.0	Ant.1
2.4G WIFI	N/A	N/A	Internal	3.87	3.87
U-NII-1	N/A	N/A	Internal	4.52	4.52
U-NII-3	N/A	N/A	Internal	4.39	4.39

2. EUT Operation Condition:

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

3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

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

4. Simultaneous transmission MPE Considerations

According to KDB447498: All transmitters and antennas in the host must be either evaluated for MPE compliance, by measurement or computational modeling, or qualify for the standalone MPE test exclusion in section 7.1. Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is ≤ 1.0 .

This means that:

$\sum$ of MPE ratios ≤ 1.0



5. Standalone MPE Evaluation:

2.4G WIFI Worst Maximum MPE Result Ant.0							
Mode	N _{TX}	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm ²) [S]
802.11b	1	22.12	22±1	23	3.87	20	0.09677
802.11g	1	17.31	17±1	18	3.87	20	0.03060
802.11n20	1	14.46	14±1	15	3.87	20	0.01534
802.11n40	1	13.46	13±1	14	3.87	20	0.01218
802.11ax20	1	14.70	14±1	15	3.87	20	0.01534
802.11ax40	1	14.09	14±1	15	3.87	20	0.01534
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted Output Power.							

2.4G WIFI Worst Maximum MPE Result Ant.1							
Mode	N _{TX}	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm ²) [S]
802.11b	1	19.05	19±1	20	3.87	20	0.04850
802.11g	1	16.62	16±1	17	3.87	20	0.02431
802.11n20	1	13.44	13±1	14	3.87	20	0.01218
802.11n40	1	13.07	13±1	14	3.87	20	0.01218
802.11ax20	1	13.97	13±1	14	3.87	20	0.01218
802.11ax40	1	13.62	13±1	14	3.87	20	0.01218
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted Output Power.							



5.2G WIFI Worst Maximum MPE Result Ant.0							
Mode	N _{TX}	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/cm ²) [S]
802.11a	1	19.11	19±1	20	4.52	20	0.05633
802.11n20	1	16.65	16±1	17	4.52	20	0.02823
802.11n40	1	16.73	16±1	17	4.52	20	0.02823
802.11ac20	1	15.48	15±1	16	4.52	20	0.02243
802.11ac40	1	16.71	16±1	17	4.52	20	0.02823
802.11ac80	1	15.48	15±1	16	4.52	20	0.02243
802.11ax20	1	15.30	15±1	16	4.52	20	0.02243
802.11ax40	1	15.60	15±1	16	4.52	20	0.02243
802.11ax80	1	14.50	14±1	15	4.52	20	0.01781
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted Output Power.							

5.2G WIFI Worst Maximum MPE Result Ant.1							
Mode	N _{TX}	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/cm ²) [S]
802.11a	1	20.06	20±1	21	4.52	20	0.07092
802.11n20	1	19.30	19±1	20	4.52	20	0.05633
802.11n40	1	18.11	18±1	19	4.52	20	0.04474
802.11ac20	1	18.18	18±1	19	4.52	20	0.04474
802.11ac40	1	19.48	19±1	20	4.52	20	0.05633
802.11ac80	1	17.68	17±1	18	4.52	20	0.03554
802.11ax20	1	17.89	17±1	18	4.52	20	0.03554
802.11ax40	1	17.16	17±1	18	4.52	20	0.03554
802.11ax80	1	17.44	17±1	18	4.52	20	0.03554
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted Output Power.							



5.8G WIFI Worst Maximum MPE Result Ant.0							
Mode	N _{TX}	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/cm ²) [S]
802.11a	1	21.80	21±1	22	4.39	20	0.08664
802.11n20	1	19.25	19±1	20	4.39	20	0.05467
802.11n40	1	19.05	19±1	20	4.39	20	0.05467
802.11ac20	1	17.40	17±1	18	4.39	20	0.03449
802.11ac40	1	16.45	16±1	17	4.39	20	0.02740
802.11ac80	1	16.80	16±1	17	4.39	20	0.02740
802.11ax20	1	17.78	17±1	18	4.39	20	0.03449
802.11ax40	1	17.25	17±1	18	4.39	20	0.03449
802.11ax80	1	17.48	17±1	18	4.39	20	0.03449
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted Output Power.							

5.8G WIFI Worst Maximum MPE Result Ant.1							
Mode	N _{TX}	Conducted Power(max) (dBm)	Turn-up Power (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/cm ²) [S]
802.11a	1	22.03	22±1	23	4.39	20	0.10908
802.11n20	1	19.56	19±1	20	4.39	20	0.05467
802.11n40	1	19.78	19±1	20	4.39	20	0.05467
802.11ac20	1	17.92	17±1	18	4.39	20	0.03449
802.11ac40	1	17.56	17±1	18	4.39	20	0.03449
802.11ac80	1	17.30	17±1	18	4.39	20	0.03449
802.11ax20	1	17.84	17±1	18	4.39	20	0.03449
802.11ax40	1	17.58	17±1	18	4.39	20	0.03449
802.11ax80	1	16.92	16±1	17	4.39	20	0.02740
Note: N _{TX} = Number of Transmit Antennas RF Output power specifies that Maximum Conducted Output Power.							



6. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Power density (mW/ cm ²)
300-1,500	F/1500
1,500-100,000	1.0

7. Summary simultaneous transmission information

The sample supports four antennas for (2.4G WIFI Antenna0+Antenna1) and (5G WIFI Antenna0+Antenna1).

The (2.4G WIFI Antenna0+Antenna1) and (5G WIFI Antenna0+Antenna1) can transmit simultaneous.

The (2.4G WIFI Antenna0+Antenna1) and (5G WIFI Antenna0+Antenna1) with four different Antenna.

According to KDB447498 for Transmitters used in mobile exposure conditions for simultaneous transmission operations;

$\sum$ of MPE ratios ≤ 1.0

8. Summary simultaneous transmission results

2.4G WIFI Antenna0 + 2.4G WIFI Antenna1 + 5G WIFI Antenna0+ 5G WIFI Antenna1 Maximum Simultaneous transmission MPE Ratios is

$0.09677+0.04850+0.08664+0.10908=0.34099 \leq 1.0$.

9. Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

-----END OF THE REPORT-----

