

Maximum Permissible Exposure Evaluation

FCC ID: 2AL8K-H4

1. Client Information

Applicant : NZS Inc. DBA Clary Icon
Address : 224 Ferris Square, Suite C, San Diego, California, United States
Manufacturer : Shenzhen Konka E-display Co.,Ltd
Address : 22A, KONKA Building, South Technology Road No.12th, High-tech Industrial Park, Nanshan, Shenzhen, China

2. General Description of EUT

EUT Name	:	Interactive Touch Screen	
Models No.	:	H4 OneScreen, H* OneScreen (*can be A-Z,0-9,or space, or dash)	
Model Difference	:	All these models are identical in the same PCB layout and electrical circuit, the only difference is model name for commercial.	
Product Description	:	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
		RF Output Power:	802.11b: 19.16 dBm 802.11g: 15.80 dBm 802.11n (HT20): 14.90 dBm 802.11n (HT40): 13.37 dBm
		Antenna Gain:	5 dBi Dipole Antenna
Power Supply	:	AC Voltage supplied	
Power Rating	:	Input: AC 100~240V, 50/60Hz, 2.5A	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Note: More information about the RF function, please refer the RF test reports.			

MPE Calculations for WIFI

1. Antenna Gain:

Dipole Antenna: 5 dBi.

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. Test Result:

Worst Maximum MPE Result								
Mode	N _{TX}	Freq. (MHz)	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	2412	18.88	19±1	20	5	20	0.0629
		2437	18.80	19±1	20	5	20	0.0629
		2462	19.16	19±1	20	5	20	0.0629
802.11g	1	2412	14.52	15±1	16	5	20	0.0250
		2437	15.80	15±1	16	5	20	0.0250
		2462	15.78	15±1	16	5	20	0.0250
802.11n (HT20)	1	2412	13.58	14±1	15	5	20	0.0199
		2437	14.46	14±1	15	5	20	0.0199
		2462	14.90	14±1	15	5	20	0.0199
802.11n (HT40)	1	2422	12.64	13±1	14	5	20	0.0158
		2437	12.72	13±1	14	5	20	0.0158
		2452	13.37	13±1	14	5	20	0.0158
Note: (1) N _{TX} = Number of Transmit Antennas (2) RF Output power specifies that Maximum Conducted Peak Output Power.								

5. 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

For 802.11b/g/n (2412~2462 MHz)

MPE limit S: 1 mW/ cm²

The MPE is calculated as $0.0629 \text{ mW} / \text{cm}^2 < \text{limit } 1 \text{ mW} / \text{cm}^2$. So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

Note

For a more detailed features description, please refer to the RF Test Report.

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