

Maximum Permissible Exposure Evaluation

FCC ID: 2A6PW-P10

1. Client Information

Applicant	:	Shenzhen Hongxin NetVision Digital Technology Co., Ltd.
Address	:	5 / F, building 4, rundongsheng Industrial Park, Longteng community, Xixiang street, Bao'an District, Shenzhen, Guangdong, China
Manufacturer	:	Shenzhen Hongxin NetVision Digital Technology Co., Ltd.
Address	:	5 / F, building 4, rundongsheng Industrial Park, Longteng community, Xixiang street, Bao'an District, Shenzhen, Guangdong, China

2. General Description of EUT

EUT Name	:	MINI projector
Models No.	:	P10, P20, P30, P40, M10, M20, M30, M40
Model Difference	:	All PCB boards and circuit diagrams are the same, the only difference is the appearance.
Product Description	Operation Frequency:	Bluetooth 5.0: 2402MHz~2480MHz 802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz U-NII-1: 5180MHz~5240MHz U-NII-3: 5745MHz~5825MHz
	Number of Channel:	Bluetooth 5.0(EDR): 79 channels Bluetooth 5.0(BLE): 40 channels 802.11b/g/n(HT20):11 channels 802.11n(HT40): 7 channels U-NII-1: 7 channels U-NII-3: 8 channels
	Antenna Gain:	2dBi FPC Antenna
Power Rating	:	For Adapter: Input: AC 100-240V~ 50/60Hz Output:19V $\overline{\text{---}}$, 3A
Software Version	:	4.9.170
Hardware Version	:	H700-V3.1-211023
Connecting I/O Port(S)	:	Please refer to the User's Manual

MPE Calculations for WIFI

1. Antenna Gain:

PCB Antenna:2dBi.

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]
BT(GFSK)	1	2402	2.44	2±1	3	2	20	0.0006
		2441	2.34	2±1	3	2	20	0.0006
		2480	2.24	2±1	3	2	20	0.0006
BT(π /4-DQPSK)	1	2402	4.47	4±1	5	2	20	0.0010
		2441	4.33	4±1	5	2	20	0.0010
		2480	4.26	4±1	5	2	20	0.0010
BT(8DPSK)	1	2402	4.69	5±1	6	2	20	0.0013
		2441	4.5	5±1	6	2	20	0.0013
		2480	4.45	4±1	5	2	20	0.0010
BLE_1M	1	2402	-3.6	-3±1	-2	2	20	0.0002
		2440	-3.78	-3±1	-2	2	20	0.0002
		2480	-3.55	-3±1	-2	2	20	0.0002

BLE_2M	1	2402	1.69	2±1	3	2	20	0.0006
		2440	1.26	1±1	2	2	20	0.0005
		2480	1.31	1±1	2	2	20	0.0005
802.11b	1	2412	16.19	16±1	17	2	20	0.0158
		2437	15.89	16±1	17	2	20	0.0158
		2462	15.15	15±1	16	2	20	0.0126
802.11g	1	2412	17.24	17±1	18	2	20	0.0199
		2437	17.13	17±1	18	2	20	0.0199
		2462	16.51	17±1	18	2	20	0.0199
802.11n(HT20)	1	2412	17.58	18±1	19	2	20	0.0250
		2437	17.49	17±1	18	2	20	0.0199
		2462	16.86	17±1	18	2	20	0.0199
802.11n(HT40)	1	2422	17.81	18±1	19	2	20	0.0250
		2437	17.65	18±1	19	2	20	0.0250
		2452	17.33	17±1	18	2	20	0.0199
802.11a	1	5180	16.33	16±1	17	2	20	0.0158
		5220	17.81	18±1	19	2	20	0.0250
		5240	16.38	16±1	17	2	20	0.0158
802.11a	1	5745	15.73	16±1	17	2	20	0.0158
		5785	15.22	15±1	16	2	20	0.0126
		5825	14.96	15±1	16	2	20	0.0126
802.11n(HT20)	1	5180	17.61	18±1	19	2	20	0.0250
		5220	16.91	17±1	18	2	20	0.0199
		5240	16.43	16±1	17	2	20	0.0158
802.11n(HT20)	1	5745	16.06	16±1	17	2	20	0.0158
		5785	15.33	15±1	16	2	20	0.0126
		5825	15.48	15±1	16	2	20	0.0126

802.11n(HT40)	1	5190	17.27	17 ± 1	18	2	20	0.0199
		5230	16.43	16 ± 1	17	2	20	0.0158
802.11n(HT40)	1	5755	15.95	16 ± 1	17	2	20	0.0158
		5795	14.92	15 ± 1	16	2	20	0.0126
802.11 n(AC20)	1	5180	17.52	17 ± 1	18	2	20	0.0199
		5220	17.16	17 ± 1	18	2	20	0.0199
		5240	16.00	16 ± 1	17	2	20	0.0158
802.11 n(AC20)	1	5745	15.83	16 ± 1	17	2	20	0.0158
		5785	15.21	15 ± 1	16	2	20	0.0126
		5825	15.42	15 ± 1	16	2	20	0.0126
802.11 n(AC40)	1	5190	17.16	17 ± 1	18	2	20	0.0199
		5230	16.49	16 ± 1	17	2	20	0.0158
802.11 n(AC40)	1	5755	15.58	16 ± 1	17	2	20	0.0158
		5795	14.97	15 ± 1	16	2	20	0.0126
802.11 n(AC80)	1	5210	17.05	17 ± 1	18	2	20	0.0199
		5775	15.72	16 ± 1	17	2	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 2.4WIFI:2412~2462 MHz and 5GWIFI 5180MHz~5240MHz

MPE limit S: 1mW/ cm²

The MPE is calculated as $0.0250 \text{ mW} / \text{cm}^2 < \text{limit } 1 \text{mW} / \text{cm}^2$. 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.

6. Conclusion:

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

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