



Maximum Permissible Exposure Evaluation

FCC ID: 2A6YC-M9

1. Client Information

Applicant	:	Shenzhen meterle photoelectric Technology Co. Ltd
Address	:	7th floor, no.10-5, Minsheng 1st Road, Baoyuan community, Shiyan street, Bao'an District, Shenzhen, China
Manufacturer	:	Shenzhen meterle photoelectric Technology Co. Ltd
Address	:	7th floor, no.10-5, Minsheng 1st Road, Baoyuan community, Shiyan street, Bao'an District, Shenzhen, China

2. General Description of EUT

EUT Name	:	Projector				
Models No.	:	M9, X9, M9-A, M9-B, M9-C, M9-D, M9-E, M9-F, M9-G, M8-A, M8-B, M8-C, M8-D, M8-E, M8-F, M8-G				
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is different customers, different model name.				
Product Description	:	<table border="1"> <tr> <td>Operation Frequency:</td> <td>Bluetooth 4.2: 2402MHz~2480MHz Bluetooth LE4.2: 2402MHz~2480MHz 802.11b/g/n(HT20): 2412MHz~2462MHz n(HT40): 2422MHz~2452MHz</td> </tr> <tr> <td>Antenna Gain:</td> <td>4.14dBi FPC Antenna</td> </tr> </table>	Operation Frequency:	Bluetooth 4.2: 2402MHz~2480MHz Bluetooth LE4.2: 2402MHz~2480MHz 802.11b/g/n(HT20): 2412MHz~2462MHz n(HT40): 2422MHz~2452MHz	Antenna Gain:	4.14dBi FPC Antenna
	Operation Frequency:	Bluetooth 4.2: 2402MHz~2480MHz Bluetooth LE4.2: 2402MHz~2480MHz 802.11b/g/n(HT20): 2412MHz~2462MHz n(HT40): 2422MHz~2452MHz				
Antenna Gain:	4.14dBi FPC Antenna					
Power Rating	:	Input: AC 100-240V~50/60Hz, 1.5A				
Software Version	:	----				
Hardware Version	:	2800-A925E5-34				
Connecting I/O Port(S)	:	Please refer to the User's Manual				
Remark	:	the evaluation report used the EUT(202207-0331-5-2#).				



MPE Calculations for WIFI

1. EUT Operation Condition:

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

2. 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

3. 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

4. Test Result:

Mode	Channel	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	2412	18.533	19±1	20	4.14	20	0.05161
	2437	18.437	18±1	19	4.14	20	0.04100
	2462	18.037	18±1	19	4.14	20	0.04100
802.11g	2412	17.249	17±1	18	4.14	20	0.03256
	2437	17.109	17±1	18	4.14	20	0.03256
	2462	18.275	18±1	19	4.14	20	0.04100
802.11n20	2412	17.159	17±1	18	4.14	20	0.03256
	2437	16.985	17±1	18	4.14	20	0.03256
	2462	16.636	17±1	18	4.14	20	0.03256
802.11n40	2412	17.062	17±1	18	4.14	20	0.03256
	2437	17.613	18±1	19	4.14	20	0.04100
	2452	17.145	17±1	18	4.14	20	0.03256
Mode	Channel	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]
Bluetooth LE	2402	1.848	2±1	3	4.14	20	0.00103
	2440	1.63	2±1	3	4.14	20	0.00103
	2480	1.825	2±1	3	4.14	20	0.00103
Mode	Channel	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]
GFSK	2402	1.502	2±1	3	4.14	20	0.00103
	2441	1.156	1±1	2	4.14	20	0.00082
	2480	0.035	0±1	1	4.14	20	0.00065
π/4-DQPSK	2402	1.501	2±1	3	4.14	20	0.00103
	2441	1.155	1±1	2	4.14	20	0.00082
	2480	0.05	0±1	1	4.14	20	0.00065
8-DPSK	2402	1.53	2±1	3	4.14	20	0.00103
	2441	1.197	1±1	2	4.14	20	0.00082
	2480	0.018	0±1	1	4.14	20	0.00065

5. Summary simultaneous transmission results

2.4G Wifi and Bluetooth MHz Maximum Simultaneous transmission MPE Ratios is $0.05161+0.00103=0.05264 \leq 1.0$.

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

Note

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

7. Conclusion:

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

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