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RF Exposure evaluation

Report Reference No.: CTL2506062031-WFH

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Product Name.....: Camera

Model/Type reference.....: MDPT3301LE

List Model(s).....: MDPT2301LE, MDPT2302LE, MDPT2303LE, MDPT3302LE, MDPT3303LE, MDPT3401LE, MDPT3402LE, MDPT3403LE, MDPT5801LE, MDPT5802LE, MDPT5803LE, T10, T20, T30, T40, T50, T60, T12

Trade Mark.....: N/A

FCC ID.....: 2BRPK-M3301

Applicant's name.....: MAYON ELECTRONIC TECHNOLOGY CO.,LTD

Address of applicant.....: Area A01, 4th Floor, Building 1, No. 15, Pingbei 2nd Road, Nanping, Xiangzhou District, Zhuhai City, China

Test Firm.....: Shenzhen CTL Testing Technology Co., Ltd.

Address of Test Firm.....: Floor 1-A, Baisha Technology Park, No.3011, Shahehexi Road, Nanshan District, Shenzhen, China 518055

Test specification.....:

Standard.....: 47CFR §1.1310

47CFR §2.1091

KDB447498 D01 General RF Exposure Guidance v06

TRF Originator.....: Shenzhen CTL Testing Technology Co., Ltd.

Master TRF.....: Dated 2011-01

Date of receipt of test item.....: June 9, 2025

Date of Test Date.....: June 9, 2025-August 12, 2025

Date of Issue.....: August 18, 2025

Result.....: Pass

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RF Exposure evaluation REPORT

Test Report No.: CTL2506062031-WFH	August 18, 2025 Date of issue
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Equipment under Test : Camera

Sample No : CTL2506062031

Model /Type : MDPT3301LE

Listed Models : MDPT2301LE, MDPT2302LE, MDPT2303LE,
MDPT3302LE, MDPT3303LE, MDPT3401LE,
MDPT3402LE, MDPT3403LE, MDPT5801LE,
MDPT5802LE, MDPT5803LE, T10, T20, T30, T40, T50, T60,
T12

Applicant : MAYON ELECTRONIC TECHNOLOGY CO.,LTD

Address : Area A01, 4th Floor, Building 1, No. 15, Pingbei 2nd Road,
Nanping, Xiangzhou District, Zhuhai City, China

Manufacturer : MAYON ELECTRONIC TECHNOLOGY CO.,LTD

Address : Area A01, 4th Floor, Building 1, No. 15, Pingbei 2nd Road,
Nanping, Xiangzhou District, Zhuhai City, China

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

** Modified History **

[illegible]

1. GENERAL INFORMATION

1.1.Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C -35°C
Relative Humidity:	35%-55 %
Air Pressure:	101 KPa

1.2. Product Information

FCC ID:	2BRPK-M3301
Product name	Camera
Model number	MDPT3301LE
Power supply	Input: DC 5V/2A
Modulation Type	QPSK, 16QAM
Antenna Type	External antenna
Antenna Gain	LTE Band 2:2.58dBi, LTE Band 4:2.07dBi, LTE Band 5:-1.78dBi, LTE Band 12: -3.44dBi, LTE Band 13: -3.40dBi, LTE Band 66: 2.77dBi
Hardware version	V3.7
Software version	2446.0.19.15
Operation Frequency Band	4G: Band 2, Band 4, Band 5, Band 12, Band 13, Band 66
Exposure category	General population/uncontrolled environment
EUT Type	Production Unit
Device Type	Mobile Device

1.3. Test Facility

1.3.1 Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.

Floor 1-A, Baisha Technology Park, No.3011 Shaheji Road, Nanshan District, Shenzhen, China 518055

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.10 and CISPR 32/EN 55032 requirements.

1.3.2 Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L7497

Shenzhen CTL Testing Technology Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No. 4343.01

Shenzhen CTL Testing Technology Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

IC Registration No.: 9618B

CAB identifier: CN0041

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with Registration No.: 9618B.

FCC-Registration No.: 399832

Designation No.: CN1216

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 399832.

1.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Shenzhen CTL Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTL laboratory is reported:

Test	Measurement Uncertainty	Notes
Transmitter power conducted	± 0.57 dB	(1)
Transmitter power Radiated	± 2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	± 1.60 dB	(1)
Occupied Bandwidth	± 0.20 ppm	(1)
Radiated Emission 9KHz~30MHz	± 3.40 dB	(1)

Radiated Emission 30~1000MHz	$\pm 4.10\text{dB}$	(1)
Radiated Emission Above 1GHz	$\pm 4.32\text{dB}$	(1)
Conducted Disturbance 0.15~30MHz	$\pm 3.20\text{dB}$	(1)

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

2. Evaluation Method

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

In accordance with KDB447498D01 for 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 modelled or measured field strengths or power density, is ≤ 1.0 . The MPE ratio of each antenna is determined at the minimum test separation distance required by the operating configurations and exposure conditions of the host device, according to the ratio of field strengths or power density to MPE limit, at the test frequency. Either the maximum peak or spatially averaged results from measurements or numerical simulations may be used to determine the MPE ratios. Spatial averaging does not apply when MPE is estimated using simple calculations based on far-field plane-wave equivalent conditions. The antenna installation and operating requirements for the host device must meet the minimum test separation distances required by all antennas, in both standalone and simultaneous transmission operations, to satisfy compliance.

3. Limit

3.1 Refer evaluation method

[ANSI C95.1–1999](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

[FCC KDB publication 447498 D01 General 1 RF Exposure Guidance v06](#): Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

[FCC CFR 47 part1 1.1310](#): Radiofrequency radiation exposure limits.

[FCC CFR 47 part2 2.1091](#): Radiofrequency radiation exposure evaluation: mobile devices.

3.2 Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
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

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 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

*=Plane-wave equivalent power density

4. MPE Calculation Method

Predication of MPE limit at a given distance

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 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

5. Antenna Information

The EUT can only use antennas certificated as follows provided by manufacturer;

External Identification	Antenna type and antenna number	Operate frequency band	Maximum antenna gain
LTE	External antenna	720-960MHz 1710-2690MHZ	LTE Band 2:2.58dBi, LTE Band 4:2.07dBi, LTE Band 5:-1.78dBi, LTE Band 12: -3.44dBi, LTE Band 13: -3.40dBi, LTE Band 66: 2.77dBi

6. Conducted Power and Manufacturing Tolerance

General Note:

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing, further SAR test reduction and MPE.

<LTE Max Conducted Power>

Test Mode		Max Conducted Power (dBm)	Tune-Up
LTE	Band 2	22.69	22.0±1
	Band 4	22.99	22.0±1
	Band 5	24.02	24.0±1
	Band 12	23.67	23.0±1
	Band 13	23.19	23.0±1
	Band 66	23.13	23.0±1

7. Measurement Results

7.1 Standalone MPE

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, $r = 20\text{cm}$, as well as the gain of the used antenna refer to antenna information, the RF power density can be obtained.

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW				
LTE Band 2	23.00	199.5262	2.58	1.8113	0.0719	1.0000
LTE Band 4	23.00	199.5262	2.07	1.6106	0.0639	1.0000

LTE Band 5	25.00	316.2278	-1.78	0.6637	0.0418	0.5510
LTE Band 12	24.00	251.1886	-3.44	0.4529	0.0226	0.4677
LTE Band 13	24.00	251.1886	-3.40	0.4571	0.0228	0.5197
LTE Band 66	24.00	251.1886	2.77	1.8923	0.0946	1.0000

Remark:

1. Output power (Average) including turn-up tolerance;
2. Output power is burst average power;
3. MPE evaluate distance is 20cm from user manual provide by manufacturer;
4. MPE values = $PG/4\pi R^2$

8. Conclusion

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

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