




Test report No.: 2360237R-RFUSV17S-A

RF Exposure Report

Product Name	Peplink Pepwave Wireless Product
Trademark	 PEPWAVE
Model and /or type reference	B One 5G B-ONE-5GN-T-PRM B One B-ONE-T-PRM B One Plus B-ONE-PLUS-LTE-US-T-PRM
FCC ID	U8G-P1AX23
Applicant's name / address	PISMO LABS TECHNOLOGY LIMITED A8, 5/F, HK Spinners Industrial Building, Phase 6, 481 Castle Peak Road, Cheung Sha Wan, Hong Kong
Manufacturer's name	PISMO LABS TECHNOLOGY LIMITED
Test method requested, standard	KDB 447498 D01 v06 <input checked="" type="checkbox"/> Minimum test separation distance ≥ 20 cm <input type="checkbox"/> For low power devices
Verdict Summary	IN COMPLIANCE
Documented By (Project Specialist / Ida Tung)	<i>Ida Tung</i>
Tested By (Senior Engineer / Jack Hsu)	<i>Jack Hsu</i>
Approved By (Manager / Tim Sung)	<i>Tim Sung</i>
Date of Receipt	2023/06/07
Date of Issue	2024/03/06
Report Version	V1.0

Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

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5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Revision History

Report No.	Version	Description	Issued Date
2360237R-RFUSV17S-A	V1.0	Initial issue of report.	2024/03/06

1. General Information

1.1. EUT Description

Product Name	Peplink Pepwave Wireless Product
Trademark	
Model and /or type reference	B One 5G B-ONE-5GN-T-PRM B One B-ONE-T-PRM B One Plus B-ONE-PLUS-LTE-US-T-PRM

Note: For more detailed information please refer to report No.: 2360237R-RFUSV01S-A, 2360237R-RFUSV01S-B and 2360237R-RFUSV03S-A.

2. Test Facility

USA	FCC Registration Number: TW0033
Canada	CAB Identifier Number: TW3023 / Company Number: 26930

Site Description	Accredited by TAF
	Accredited Number: 3023

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
	Linkou Laboratory
Address	No.5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan, R.O.C
Performed Location	No. 26, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan, R.O.C.
Phone Number	+886-3-275-7255
Fax Number	+886-3-327-8031

3. RF Exposure Evaluation

3.1. Standard Applicable

According to KDB 447498 D01 (7.1), A minimum test separation distance ≥ 20 cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits.

3.2. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
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
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/ Uncontrolled Exposures				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

Simultaneous transmission MPE test exclusion applies when the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0

3.3. Test Result of RF Exposure Evaluation

Product	Peplink Pepwave Wireless Product
Test Item	RF Exposure Evaluation

Band	E.I.R.P (dBm)	E.I.R.P (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
Bluetooth LE	10.980	12.531	0.0025	1.000
WiFi 2.4G	29.640	920.450	0.1831	1.000
WiFi 5G U-NII-1	31.420	1386.756	0.2759	1.000
WiFi 5G U-NII-3	29.950	988.553	0.197	1.000
WCDMA Band 2	28.91	778.037	0.155	1.000
WCDMA Band 4	28.87	770.903	0.153	1.000
WCDMA Band 5	27.79	601.174	0.120	0.549
LTE B2/CA_2C	28.91	778.037	0.155	1.000
LTE B4	28.87	770.903	0.153	1.000
LTE B5/CA_5B	27.79	601.174	0.120	0.549
LTE B7/CA_7C	27.43	553.350	0.110	1.000
LTE B12	28.24	666.807	0.133	0.466
LTE B13	28.49	706.318	0.141	0.518
LTE B14	28.49	706.318	0.141	0.525
LTE B17	28.24	666.807	0.133	0.469
LTE B25	28.91	778.037	0.155	1.000
LTE B26(814-824)	27.79	601.174	0.120	0.543
LTE B26(824-849)	27.79	601.174	0.120	0.549
LTE B30	22.76	188.799	0.038	1.000
LTE B38/CA_38C	30.43	1104.079	0.220	1.000
LTE B41/CA_41C	30.64	1158.777	0.231	1.000
LTE B42/42C(3450-3550)	22.22	166.725	0.033	1.000
LTE B43(3700-3800)	22.36	172.187	0.034	1.000
LTE B48/CA_48C	19.47	88.512	0.018	1.000
LTE B66	28.87	770.903	0.153	1.000
LTE B71	28.33	680.769	0.135	0.442
5G NR n2	28.91	778.037	0.155	1.000
5G NR n5	27.79	601.174	0.120	0.549
5G NR n7	27.43	553.350	0.110	1.000
5G NR n12	28.24	666.807	0.133	0.466
5G NR n13	28.49	706.318	0.141	0.518
5G NR n14	28.49	706.318	0.141	0.525
5G NR n25	28.91	778.037	0.155	1.000
5G NR n26(814-824)	27.79	601.174	0.120	0.543

Band	E.I.R.P (dBm)	E.I.R.P (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
5G NR n26(824-849)	27.79	601.174	0.120	0.549
5G NR n30	22.76	188.799	0.038	1.000
5G NR n38	30.43	1104.079	0.220	1.000
5G NR n41	30.64	1158.777	0.231	1.000
5G NR n48	19.47	88.512	0.018	1.000
5G NR n66	28.87	770.903	0.153	1.000
5G NR n70	28.87	770.903	0.153	1.000
5G NR n71	28.33	680.769	0.135	0.442
5G NR n77	22.47	176.604	0.035	1.000
5G NR n78	22.47	176.604	0.035	1.000

Note: The conducted output power is refer to report No.: 2360237R-RFUSV01S-A, 2360237R-RFUSV01S-B and 2360237R-RFUSV03S-A from the DEKRA and SEWA2304000052RG02 from the SGS.

Co-location
<p>Conclusion: The formula of calculated the MPE is: $CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$ CPD = Calculation power density LPD = Limit of power density</p> <p>WiFi 2.4 GHz function + WiFi 5 GHz function + Bluetooth LE + WWAN module : WCDMA function = $0.183 + 0.276 + 0.002 + 0.218 = 0.679$, therefore the maximum calculations of above situations are less than the “1” limit.</p> <p>WiFi 2.4 GHz function + WiFi 5 GHz function + Bluetooth LE + WWAN module : LTE function = $0.183 + 0.276 + 0.002 + 0.306 = 0.767$, therefore the maximum calculations of above situations are less than the “1” limit.</p> <p>WiFi 2.4 GHz function + WiFi 5 GHz function + Bluetooth LE + WWAN module : 5G NR function = $0.183 + 0.276 + 0.002 + 0.306 = 0.767$, therefore the maximum calculations of above situations are less than the “1” limit.</p>

Results	PASS
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