RF Exposure Evaluation Declaration

Product Name	:	peplink PEPWAVE Wireless Product
Brand Name	:	PEPWAVE / peplink
Model No.	:	MAX Transit Pro E, MAX-TST-PROE-DUO-LTEA-Q-T-PRM
FCC ID	:	U8G-P1AX09

Applicant	:	PISMO LABS TECHNOLOGY LIMITED
Address	:	A8, 5/F, HK Spinners Industrial Building, Phase 6, 481 Castle Peak Road, Cheung Sha Wan, Hong Kong

Date of Receipt	:	Jul. 06, 2022
Issued Date	:	Sep. 26, 2022
Report No.	:	2270145R-RFUSMPEV02-A
Report Version	:	V1.0

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.
This report must not be used to claim product endorsement by TAF or any agency of the government.
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.
The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd.

Product Name	:	peplink PEPWAVE Wireless Product
Applicant	:	PISMO LABS TECHNOLOGY LIMITED
Address	:	A8, 5/F, HK Spinners Industrial Building, Phase 6, 481 Castle Peak Road, Cheung Sha Wan, Hong Kong
Manufacturer	:	PISMO LABS TECHNOLOGY LIMITED
Address	:	A8, 5/F, HK Spinners Industrial Building, Phase 6, 481 Castle Peak Road, Cheung Sha Wan, Hong Kong
Brand Name	:	PEPWAVE / peplink
Model No.	:	MAX Transit Pro E, MAX-TST-PROE-DUO-LTEA-Q-T-PRM
FCC ID	:	U8G-P1AX09
EUT Voltage	:	DC 12V for power port (adapter) DC 12~56V for terminal block port
Applicable Standard	:	FCC 47 CFR Part 2.1091 Radiofrequency radiation exposure evaluation: mobile devices.
Laboratory Name	:	DEKRA Testing and Certification Co., Ltd. Hsin Chu Laboratory
Address	:	No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan, R.O.C.
Test Result	:	Complied

Documented By : Hailey Peng

(Hailey Peng / Senior Engineer)

Approved By : Rueyyan.Lin

(Rueyyan Lin / Supervisor)

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd.

Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	Sep. 26, 2022

1. General Information

1.1. EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
WiFi 2.4 GHz	2400 ~ 2483.5	2412 ~ 2462	802.11b: DSSS 802.11g/n/ac: OFDM 802.11ax: OFDMA
WiFi 5 GHz	5150 ~ 5250 5725 ~ 5850	5180 ~ 5240 5745 ~ 5825	802.11a/n/ac: OFDM 802.11ax: OFDMA

The EUT contains two of the same WWAN modules and the detail as below.

Brand Name	Model	FCC ID	Bands	Operating Frequency Range (MHz)	Function
Telit	LN920A12-WW	RI7LN920	WCDMA Band 2	TX: 1852.4 ~ 1907.6 RX: 1932.4 ~ 1987.6	WCDMA / HSDPA / DC-HSDPA / HSUPA / HSPA+
			WCDMA Band 4	TX: 1712.4 ~ 1752.6 RX: 2112.4 ~ 2152.6	
			WCDMA Band 5	TX: 826.4 ~ 846.6 RX: 871.4 ~ 891.6	
			Bands	Operating Frequency Range (MHz)	Modulation Type
			LTE Band 2	Uplink: 1850 ~ 1910 Downlink: 1930 ~ 1990	QPSK / 16QAM / 64QAM
			LTE Band 4	Uplink: 1710 ~ 1755 Downlink: 2110 ~ 2115	
			LTE Band 5	Uplink: 824 ~ 849 Downlink: 869 ~ 894	
			LTE Band 7	Uplink: 2500 ~ 2570 Downlink: 2620 ~ 2690	
			LTE Band 12	Uplink: 699 ~ 716 Downlink: 729 ~ 746	
			LTE Band 13	Uplink: 777 ~ 787 Downlink: 746 ~ 756	
			LTE Band 14	Uplink: 788 ~ 798 Downlink: 758 ~ 768	
			LTE Band 17	Uplink: 704 ~ 716 Downlink: 734 ~ 746	
			LTE Band 25	Uplink: 1850 ~ 1915 Downlink: 1930 ~ 1995	
			LTE Band 26	Uplink: 824 ~ 849 Downlink: 859 ~ 894	
			LTE Band 26 (Part 90)	Uplink: 814 ~ 824 Downlink: 859 ~ 869	
			LTE Band 30	Uplink: 2305 ~ 2315 Downlink: 2350 ~ 2360	
			LTE Band 38	Uplink: 2570 ~ 2620 Downlink: 2570 ~ 2620	
			LTE Band 41	Uplink: 2496 ~ 2690 Downlink: 2496 ~ 2690	
			LTE Band 41 (HPUE)	Uplink: 2496 ~ 2690 Downlink: 2496 ~ 2690	
			LTE Band 48	Uplink: 3550 ~ 3700 Downlink: 3550 ~ 3700	
			LTE Band 66	Uplink: 1710 ~ 1780 Downlink: 2110 ~ 2200	
			LTE Band 71	Uplink: 663 ~ 698 Downlink: 617 ~ 652	
Note: LTE Band supports CA Band: 5C, 7C, 38C and 41C.					

The brand name/model number in the following table are all refer to the identical product.

Brand Name	Description
PEPWAVE	There is nothing different of two models, just for different marketing use.
peplink	
Model No.	
MAX Transit Pro E	
MAX-TST-PROE-DUO-LTEA-Q-T-PRM	

From the above models, model: MAX Transit Pro E was selected as representative model for the test and its data was recorded in this report.

Note: The above EUT information is declared by the manufacturer.

1.2. Test Facility

Laboratory Information

USA	**:**	**FCC Registration Number: TW3024**
Canada		**CAB identifier : TW3024**

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw

If you have any comments, please don't hesitate to contact us. Our test sites as below:

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
Address	1. No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C. 2. No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
Phone number	1. +886-3-582-8001 2. +886-3-582-8001
Fax number	1. +886-3-582-8958 2. +886-3-582-8958
E mail address	info.tw@dekra.com
Website	http://www.dekra.com.tw
Note: Test site number for address 1 includes HC-SR02. Test site number for address 2 includes HC-CB02, HC-CB03, HC-CB04, HC-SR10 and HC-SR12.	

2. RF Exposure Evaluation

2.1. Test Limit

(A) Test Limit for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-3.0	614	1.63	*(100)	<6
3.0-30	1842/f	4.89/f	*(900/f²)	<6
30-300	61.4	0.163	1.0	<6
300-1500	-	-	f/300	<6
1500-100,000	-	-	5	<6

(B) Test Limit for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f²)	<30
30-300	27.5	0.073	0.2	<30
300-1500	-	-	f/1500	<30
1500-100,000	-	-	1.0	<30

Note: f = frequency in MHz; *Plane-wave equivalent power density

Power Density (S) is calculated by the following formula:

$$S=(P*G)/4\pi R^2$$

where:

S = power density (in appropriate units, e.g. mW/ cm^2)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

π = 3.1416

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

2.2. Test Result of RF Exposure Evaluation

Exposure Environment: General Population / Uncontrolled Exposure

Evaluation Mode	E.I.R.P (dBm)	E.I.R.P (mW)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Test Result (PASS/FAIL)
WiFi 2.4 GHz	28.15	653.13	0.130	1.000	PASS
WiFi 5 GHz Band 1	23.86	243.39	0.048	1.000	PASS
WiFi 5 GHz Band 4	24.61	289.07	0.058	1.000	PASS
WCDMA Band 2	25.31	339.63	0.068	1.000	PASS
WCDMA Band 4	25.13	325.84	0.065	1.000	PASS
WCDMA Band 5	21.46	139.96	0.028	0.549	PASS
LTE Band 2	25.26	335.74	0.067	1.000	PASS
LTE Band 4	24.55	285.10	0.057	1.000	PASS
LTE Band 5	21.16	130.62	0.026	0.549	PASS
LTE Band 7	25.69	370.68	0.074	1.000	PASS
LTE Band 12	21.10	128.82	0.026	0.466	PASS
LTE Band 13	20.94	124.17	0.025	0.518	PASS
LTE Band 14	20.89	122.74	0.024	0.525	PASS
LTE Band 17	20.83	121.06	0.024	0.469	PASS
LTE Band 25	24.91	309.74	0.062	1.000	PASS
LTE Band 26	20.99	125.60	0.025	0.549	PASS
LTE Band 26 (Part 90)	21.10	128.82	0.026	0.543	PASS
LTE Band 30	20.82	120.78	0.024	1.000	PASS
LTE Band 38	25.60	363.08	0.072	1.000	PASS
LTE Band 41	28.00	630.96	0.126	1.000	PASS
LTE Band 41 (HPUE)	28.00	630.96	0.126	1.000	PASS
LTE Band 48	22.38	172.98	0.034	1.000	PASS
LTE Band 66	24.74	297.85	0.059	1.000	PASS
LTE Band 71	21.16	130.62	0.026	0.442	PASS
LTE Band 5C	22.04	159.96	0.032	0.549	PASS
LTE Band 7C	26.83	481.95	0.096	1.000	PASS
LTE Band 38C	26.32	428.55	0.085	1.000	PASS
LTE Band 41C	26.77	475.34	0.095	1.000	PASS

Distance (cm): 20 for Maximum Permissible Exposure.

Co-location
Conclusion: The formula of calculated the MPE is: **CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1** **CPD = Calculation power density** **LPD = Limit of power density** 1. WiFi 2.4 GHz function + WiFi 5 GHz function + WWAN WCDMA function = 0.130 + 0.058 + 0.068 = 0.256, therefore the maximum calculations of above situations are less than the “1” limit. 2. WiFi 2.4 GHz function + WiFi 5 GHz function + WWAN LTE function = 0.130 + 0.058 + 0.126 = 0.314, therefore the maximum calculations of above situations are less than the “1” limit.

Note:

1. The above EUT information is declared by the manufacturer.
2. The results are evaluated using the maximum power.