


RF EXPOSURE EVALUATION REPORT

FCC ID : U8G-P1930LITER5
Equipment : Pepwave / Peplink / Pismo Labs Wireless Product
Brand Name : Pepwave / Peplink / Pismo
Model Name : MAX Transit Mini
Max transit mini
MAX-Transit-Mini
MAX Transit Mini LTE
Max Transit Mini LTE
MAX Transit Mini LTEA
Max Transit Mini LTEA
MAX BR1 Mini
Max BR1 Mini
MAX BR1 Mini LTE
MAX BR1 Mini LTEA
MAX BR1 M2M
Pismo 930 LITE
Pismo930 LITE
Pismo930LITE
MAX-BR1-MINI-LTE-US
MAX-BR1-MINI-LTE-US-T
Pismo 930 Lite
Pismo930LITER5
Pismo 930LITER5
Applicant : Pismo Labs Technology Limited
Unit A5, 5/F, HK Spinners Ind. Bldg., Phase 6, 481 Castle
Peak Road, Cheung Sha Wan, Kowloon, Hong Kong
Manufacturer : Pismo Labs Technology Limited
Unit A5, 5/F, HK Spinners Ind. Bldg., Phase 6, 481 Castle
Peak Road, Cheung Sha Wan, Kowloon, Hong Kong
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated in accordance with 47 CFR Part 2.1091 for the device and pass the limit.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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History of this test report

Report No.	Version	Description	Issued Date
FA8O2320	Rev. 01	Initial issue of report	Feb. 21, 2019

**1. Description of Equipment Under Test (EUT)**

Product Feature & Specification	
EUT Type	Pepwave / Peplink / Pismo Labs Wireless Product
Brand Name	Pepwave / Peplink / Pismo
Model Name	MAX Transit Mini Max transit mini MAX-Transit-Mini MAX Transit Mini LTE Max Transit Mini LTE MAX Transit Mini LTEA Max Transit Mini LTEA MAX BR1 Mini Max BR1 Mini MAX BR1 Mini LTE MAX BR1 Mini LTEA MAX BR1 M2M Pismo 930 LITE Pismo930 LITE Pismo930LITE MAX-BR1-MINI-LTE-US MAX-BR1-MINI-LTE-US-T Pismo 930 Lite Pismo930LITER5 Pismo 930LITER5
FCC ID	U8G-P1930LITER5
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz
Mode	802.11b/g/n HT20/HT40
EUT Stage	Identical Prototype
Remark: 1. Below either one WWAN module will be possible integrated into this host, therefore, the transmit simultaneous with WWAN operation is necessary, and WWAN maximum powers are showing on section 2 according to module report.	



Module Information	
Integrated Module 1	Brand Name: Telit Model Name: LE910-NA V2 FCC ID: R17LE910NAV2
Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM
Integrated Module 2	Brand Name: Telit Model Name: LE910C4-NF FCC ID: R17LE910CXNF
Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 14: 790.5 MHz ~ 795.5 MHz LTE Band 66: 1710.7 MHz ~ 1779.3 MHz LTE Band 71: 665.5 MHz ~ 695.5 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM
Integrated Module 3	Brand Name: Sierra Model Name: MC7455 FCC ID: N7NMC7455
Wireless Technology and Frequency Range	WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz LTE Band 26: 814.7 MHz ~ 848.3 MHz LTE Band 30: 2307.5 MHz ~ 2312.5 MHz LTE Band 41: 2498.5 MHz ~ 2687.5 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA LTE: QPSK, 16QAM

Reviewed by: Jason WangReport Producer: Wan Liu

2. Maximum RF average output power among production units

<WLAN>

Band / Channel / Frequency (MHz)			IEEE 802.11 Average Power (dBm)			
			11b	11g	HT20	HT40
2.4GHz WLAN (DTS)	Ch 1	2412	16	14	14	
	Ch 3	2422				12.5
	Ch 6	2437	16	14	14	12.5
	Ch 9	2452				12.5
	Ch 11	2462	16	14	14	

<LE910-NA V2>

Mode		Average Power (dBm)
WCDMA	Band II	24.5
	Band V	24.5
LTE	Band 2	24
	Band 4	24
	Band 5	24
	Band 12	24
	Band 13	24
	Band 17	24

<LE910C4-NF>

Mode		Average Power (dBm)
WCDMA	Band II	25
	Band IV	25
	Band V	25
LTE	Band 2	25
	Band 4	25
	Band 5	25
	Band 12	25
	Band 13	25
	Band 14	25
	Band 66	25
	Band 71	25



<MC7455>

Mode		Average Power (dBm)
WCDMA	Band II	24
	Band IV	24
	Band V	24
LTE	Band 2	24
	Band 4	24
	Band 5	24
	Band 7	23
	Band 12	24
	Band 13	24
	Band 25	24
	Band 26	24
	Band 30	23
	Band 41	23

3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled 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
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
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
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

<LE910-NA V2>

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
WCDMA Band 2	1852.4	3.77	24.5	28.270	0.671	671.429	0.134	1.000	0.134
WCDMA Band 5	826.4	1.69	24.5	26.190	0.416	415.911	0.083	0.551	0.150
LTE Band 2	1850.7	3.77	24	27.770	0.598	598.412	0.119	1.000	0.119
LTE Band 4	1710.7	3.74	24	27.740	0.594	594.292	0.118	1.000	0.118
LTE Band 5	824.7	1.69	24	25.690	0.371	370.681	0.074	0.550	0.134
LTE Band 12	699.7	1.93	24	25.930	0.392	391.742	0.078	0.466	0.167
LTE Band 13	779.5	1.93	24	25.930	0.392	391.742	0.078	0.520	0.150
LTE Band 17	706.5	1.93	24	25.930	0.392	391.742	0.078	0.471	0.166

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band

<LE910C4-NF>

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
WCDMA Band 2	1852.4	3.77	25	28.770	0.753	753.356	0.150	1.000	0.150
WCDMA Band 4	1712.4	3.74	25	28.740	0.748	748.170	0.149	1.000	0.149
WCDMA Band 5	826.4	1.69	25	26.690	0.467	466.659	0.093	0.551	0.169
LTE Band 2	1850.7	3.77	25	28.770	0.753	753.356	0.150	1.000	0.150
LTE Band 4	1710.7	3.74	25	28.740	0.748	748.170	0.149	1.000	0.149
LTE Band 5	824.7	1.69	25	26.690	0.467	466.659	0.093	0.550	0.169
LTE Band 12	699.7	1.93	25	26.930	0.493	493.174	0.098	0.466	0.210
LTE Band 13	779.5	1.93	25	26.930	0.493	493.174	0.098	0.520	0.189
LTE Band 14	790.5	1.74	25	26.740	0.472	472.063	0.094	0.527	0.178
LTE Band 66	1710.7	3.74	25	28.740	0.748	748.170	0.149	1.000	0.149
LTE Band 71	665.5	1.47	25	26.470	0.444	443.609	0.088	0.444	0.199

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band

<MC7455>

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
WCDMA Band 2	1852.4	3.77	24	27.770	0.598	598.412	0.119	1.000	0.119
WCDMA Band 4	1712.4	3.74	24	27.740	0.594	594.292	0.118	1.000	0.118
WCDMA Band 5	826.4	1.69	24	25.690	0.371	370.681	0.074	0.551	0.134
LTE Band 2	1850.7	3.77	24	27.770	0.598	598.412	0.119	1.000	0.119
LTE Band 4	1710.7	3.74	24	27.740	0.594	594.292	0.118	1.000	0.118
LTE Band 5	824.7	1.69	24	25.690	0.371	370.681	0.074	0.550	0.134
LTE Band 7	2502.5	2.75	23	25.750	0.376	375.837	0.075	1.000	0.075
LTE Band 12	699.7	1.93	24	25.930	0.392	391.742	0.078	0.466	0.167
LTE Band 13	779.5	1.93	24	25.930	0.392	391.742	0.078	0.520	0.150
LTE Band 25	1850.7	3.77	24	27.770	0.598	598.412	0.119	1.000	0.119
LTE Band 26	814.7	1.99	24	25.990	0.397	397.192	0.079	0.543	0.146
LTE Band 30	2307.5	2.64	23	25.640	0.366	366.438	0.073	1.000	0.073
LTE Band 41	2498.5	2.80	23	25.800	0.380	380.189	0.076	1.000	0.076

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band

<WLAN>

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
2.4GHz WLAN	2412.0	5.33	16.00	21.330	0.136	135.831	0.027	1.000	0.027

Note: For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band

**4.2. Collocated Power Density Calculation****<LE910-NA V2>**

WWAN Power Density / Limit	WLAN Power Density / Limit	Σ (Power Density / Limit) of WWAN+WLAN
0.167	0.027	0.194

Note:

1. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN).
2. Considering the WWAN module collocation with the WLAN transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant

<LE910C4-NF>

WWAN Power Density / Limit	WLAN Power Density / Limit	Σ (Power Density / Limit) of WWAN+WLAN
0.210	0.027	0.237

Note:

1. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN).
2. Considering the WWAN module collocation with the WLAN transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant

<MC7455>

WWAN Power Density / Limit	WLAN Power Density / Limit	Σ (Power Density / Limit) of WWAN+WLAN
0.167	0.027	0.194

Note:

1. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN).
3. Considering the WWAN module collocation with the WLAN transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.