

FCC RF EXPOSURE REPORT

FCC ID:2AEMI-PHOTON

Project No. : 1504C213
Equipment : PHOTON
Model : PHOTONH
Applicant : Spark Labs, Inc.,
Address : 320 Alabama St #2 San Francisco, United
States 94110

According: : FCC Guidelines for Human Exposure IEEE
C95.1

B T L I N C .

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MPE CALCULATION METHOD:

Calculation Method of RF Safety Distance:

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

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

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)	Note
1	ACX	AT7020 -E3R0HBA	Chip	N/A	-1.30	TX/RX
2	CRM _X ™	104-1004	Dipole	RP-TNC	2.15	TX/RX

TEST RESULTS

EUT :	PHOTON	Model Name :	PHOTONH
Temperature :	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX B MODE /CH01, CH06, CH11_Chip antenna		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-1.30	0.7413	19.74	94.1890	0.01389794	1	Complies
-1.30	0.7413	19.15	82.2243	0.01213250	1	Complies
-1.30	0.7413	19.65	92.2571	0.01361289	1	Complies

EUT :	PHOTON	Model Name :	PHOTONH
Temperature :	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX G MODE /CH01, CH06, CH11_ Chip antenna		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-1.30	0.7413	22.63	183.2314	0.02703649	1	Complies
-1.30	0.7413	22.6	181.9701	0.02685038	1	Complies
-1.30	0.7413	22.38	172.9816	0.02552410	1	Complies

EUT :	PHOTON	Model Name :	PHOTONH
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-20M MODE /CH01, CH06, CH11_ Chip antenna		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-1.30	0.7413	22.86	193.1968	0.02850692	1	Complies
-1.30	0.7413	22.67	184.9269	0.02728666	1	Complies
-1.30	0.7413	22.76	188.7991	0.02785803	1	Complies

EUT :	PHOTON	Model Name :	PHOTONH
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX B MODE /CH01, CH06, CH11_ Dipole antenna		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2.15	1.6406	19.43	87.7001	0.02863851	1	Complies
2.15	1.6406	19.18	82.7942	0.02703649	1	Complies
2.15	1.6406	19.91	97.9490	0.03198530	1	Complies

EUT :	PHOTON	Model Name :	PHOTONH
Temperature :	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX G MODE /CH01, CH06, CH11_ Dipole antenna		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2.15	1.6406	22.02	159.2209	0.05199366	1	Complies
2.15	1.6406	22.38	172.9816	0.05648724	1	Complies
2.15	1.6406	22.74	187.9317	0.06136919	1	Complies

EUT :	PHOTON	Model Name :	PHOTONH
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N-20M MODE /CH01, CH06, CH11_ Dipole antenna		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
2.15	1.6406	22.37	172.5838	0.05635732	1	Complies
2.15	1.6406	22.33	171.0015	0.05584064	1	Complies
2.15	1.6406	22.08	161.4359	0.05271696	1	Complies

Note: the calculated distance is 20 cm.