RF Exposure Evaluation declaration

Product Name	Router
Model No.	Z1
FCC ID	UDX-60024010

Applicant	Meraki Inc.
Address	660 Alabama St., San Francisco, CA, 94110

Date of Receipt	Aug. 30, 2012
Date of Declaration	Sep. 12, 2012
Report No.	129065R-RFUSP28V01

1. RF Exposure Evaluation

1.1. 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				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula
Friis transmission formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where
Pd = power density in mW/cm^2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
Pi = 3.1416
R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm^2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.
The temperature and related humidity: 18℃and 78％ RH.

1.3. Test Result of RF Exposure Evaluation

Product : Router
Test Item : RF Exposure Evaluation
Test Site : No.3 OATS

802.11b (1Mbps) Output Power Into Antenna & RF Exposure Evaluation Distance (2.8dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
1	2412.00	161.4359	0.061197
6	2437.00	292.4152	0.110849
11	2462.00	124.1652	0.047069

Power density in column 4 is much lower than the limit (1 mW/cm^2).

802.11g (6Mbps) Output Power Into Antenna & RF Exposure Evaluation Distance (2.8dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
1	2412.00	139.9587	0.053056
6	2437.00	203.7042	0.077220
11	2462.00	133.9677	0.050784

Power density in column 4 is much lower than the limit (1 mW/cm^2).

802.11a (6Mbps) Output Power Into Antenna & RF Exposure Evaluation Distance (2.0dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
149	5745.00	304.0885	0.095881
157	5785.00	296.4831	0.093483
165	5825.00	276.6942	0.087243

Power density in column 4 is much lower than the limit (1 mW/cm^2).

802.11n-20MHz_14.4Mbps - 2.4G Band

Output Power Into Antenna & RF Exposure Evaluation Distance (2.8dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
01	2412.00	115.8777	0.043927
06	2437.00	203.7042	0.077220
11	2462.00	106.6596	0.040432

Power density in column 4 is much lower than the limit (1 mW/cm^2).

802.11n-40MHz_30Mbps - 2.4G Band

Output Power Into Antenna & RF Exposure Evaluation Distance (2.8dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
01	2422.00	59.8412	0.022685
04	2437.00	166.3413	0.063057
07	2452.00	49.3174	0.018695

Power density in column 4 is much lower than the limit (1 mW/cm^2).

802.11n-20MHz_14.4Mbps - 5G Band

Output Power Into Antenna & RF Exposure Evaluation Distance (2.0dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
149	5745.00	297.8516	0.093914
157	5785.00	282.4880	0.089070
165	5825.00	266.6859	0.084087

Power density in column 4 is much lower than the limit (1 mW/cm^2).

802.11n-40MHz_30Mbps - 5G Band

Output Power Into Antenna & RF Exposure Evaluation Distance (2.0dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
151	5755.00	173.3804	0.054668
159	5795.00	250.6109	0.079019

Power density in column 4 is much lower than the limit (1 mW/cm^2).

802.11a (6Mbps) Output Power Into Antenna & RF Exposure Evaluation Distance (2.0dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
36	5180.00	59.4292	0.018738
44	5220.00	47.6431	0.015022
48	5240.00	47.5335	0.014988

Power density in column 4 is much lower than the limit (1 mW/cm^2).

802.11n-20MHz_14.4Mbps

Output Power Into Antenna & RF Exposure Evaluation Distance (2.0dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
36	5180.00	45.8142	0.014445
44	5220.00	46.0257	0.014512
48	5240.00	43.9542	0.013859

Power density in column 4 is much lower than the limit (1 mW/cm^2).

802.11n-40MHz_30Mbps

Output Power Into Antenna & RF Exposure Evaluation Distance (2.0dBi):

Channel	Frequency (MHz)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm2)
38	5190.00	49.0908	0.015479
46	5230.00	44.6684	0.014084

Power density in column 4 is much lower than the limit (1 mW/cm^2).